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selected papers from

training course on

sociological and economic aspects of housing



government of india

national buildings organisation



nhd

un regional housing centre ecafe

nirman bhawan new delhi

**Selected Papers from
Training Course on
Sociological and Economic Aspects of Housing**

Government of India

National Buildings Organisation

and

UN Regional Housing Centre Ecafe

Nirman Bhawan New Delhi

FOREWORD

The National Buildings Organisation organises training courses on the 'Sociological and Economic Problems in the Field of Housing' for the benefit of 'in-service' officials connected with the various disciplines of housing and building. The objective of these courses is to acquaint men in the field with the problems encountered and to suggest methods of tackling them suitably. Lectures on subjects concerning sociological and economic aspects of housing are delivered by specialists in the field. This publication is a compilation of selected lectures from the first three training courses held by the National Buildings Organisation. It contains 64 lectures presented under 8 chapters.

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I Evolution Of Housing

The Development of Housing and Its Relation to Town Planning in the West*

By

Mrs. Paula Escheverria†

1. I was to speak to you today on the evolution of housing, from its earliest development to the present day. I will not burden you with the events leading to the limitation I have set on this proposed title, but I will warn you that you will not hear today a recounting of the earliest archaeological findings on prehistoric camping grounds, nor of man's use of cave and cairn for a shelter, which signified a momentary fixity in space in those nomadic days of hunting and gatering. Nor shall we discourse on his gradual mastery of some of the elements of his environment, his progress over tens of thousands of years in domesticating animals, his observations on the values and the characteristics of edible plants, his development of methods of propagation and cultivation which led finally to the earliest fixed village settlements.

2. Why do I say "his" progress? "his" mastery and "his" observation. In Bengal, that land par excellence of 'mother worship', it was probably the "woman" who was responsible for those early steps in domestication which led to the urban civilization we know today. "Woman", the breeder, the protector and educator of her young, the provider of a steadier and more secure nourishment as she wielded the planting stick and hoe—and from the very forms of her body, encircling arms, enclosing uterus, to her skilful hands—is the shaper of the earliest enclosures and shelters; on the smaller scale, the baskets, jars and pots used for storing water and grain, and on a more permanent scale, the woman has always been a full participant in the design and construction of shelter—the 'house'.

To this day, we see her in the village society, largely responsible for house maintenance from day to day—gathering thatch for roofing, and tracing with delicate fingers the elaborate drawings on wall and threshold that keep wealth and fortune, propitiating the goddess who protects her family, or smoothing her dung and mud plaster over the floor.

In my country, she is the master mechanic with a hairpin and a kitchen knife, the lady who wires the lamps, changes the washer on leaky faucets, wields the paint brush on the kitchen cabinets. She buys the coal, tends the furnace, bargains with the contractor for the new roof, and writes the cheques that pay for most of American domestic life.

3. We then come to the more sophisticated development of urban culture where we see a reversion to male dominance. 'Man' as priest, as king, as tyrant, became increasingly responsible as a spokesman for a society, increasingly aware of the claims of all its citizens and therefore hopefully,

increasingly democratic. But now in this male dominated society, we are forced more and more by non-human loyalties, by unreasoning or helpless leaders, the urge to divert larger and larger sums to mankind's destruction instead of witnessing a concentrating of all our energies and resources on construction—on the creation of a world where children can be born in safety, be educated cultivating respect for others, and develop a rich appreciation of their own potentials, grow in honour and decency, with aspirations beyond the filling of a belly or the placating of terrible and malevolent gods.

4. I would now like to refer you briefly to the abundant sources that trace the growth of human habitation. The materials for such a history are available in varied readings—of archaeologists and historians, of modern anthropological writings, and in the voluminous literature on urbanism. The most recent, and certainly a masterly presentation, has been written by Lewis Mumford in his book, "The City in History".

5. The reference to "readings" reminds me of the provocative cross-cultural exchange we carried on with an English colleague last summer in Calcutta. Commenting on the not always purely intellectual conclusions of the academic community to publish, he scoffed at the numerous volumes by American college teachers titled "Readings in Urban Sociology", "Readings in Regional Planning"—"In Asian Geography" etc. "Other than validating the scholarly *bonafides* of the author, and more importantly, insuring his departmental tenure, how really useful are such readings to the student?", our English friend asked.

"Is it not more productive for the student to browse alone, in a library, stumbling on a brilliant work with an awakening awareness and a sense of independent discovery, or even more important, finding and reading the bad books, the narrow, imperfect productions of writers who sometimes show more passion than judgement, more research skill than analytic ability? Isn't it the less than perfect that provokes the student, that turns him into a scholar, debating with the author, filling in the areas ignored or misinterpreted by him? Isn't it the tussle with the hasty, the incomplete, the wrong recommendation that sharpens the mind and the skill and develops original scholarships?"

It is on this basis that I, with certain humility, stand before you today. You who are experienced and seasoned in your own offices and who have come here for clear answers, or for fresh insights and sharper definition of the diffuse and complex problems that you grapple with daily. As the

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lecturer and the listener work together through this course, exchange roles, correct and clarify each other's point of view, we may be able to hammer out a few pertinent recommendations for action, or introduce serious areas of research and exploration that must precede final policy decisions.

6. Let us start by looking at housing in the modern western city as it evolved in the tough school of 19th century industrial growth. We need not make any lengthy disquisitions on the beneficial effects of this growth on the macro-economy. In that age were established and developed, the physical and social infra-structures that have led finally to the so called "Economy of Abundance". This is the society to which social philosophers of the West now address themselves—in terms of ultimate values—posing the alternative choices now open to us in the allocation of resources. Our potential permits us to choose between television and refrigerators on the one hand, or schools and government support of the arts and sciences on the other. On the allocation of resources to eliminate poverty, disease, slums and traffic jams—or to invest further in missiles and counter missiles.

7. This is the society to which the underdeveloped world looks, from which it sets a standard of emulation on the one hand or from whose failures it can learn a lesson and avoid wastages in an economy that cannot afford expensive mistakes.

8. The apparently healthy growth of the 19th Century economy, was countered by the equally apparent social disorganization that it generated. The requirements of mine and mill took precedence over all other human needs; water supply was contaminated by industrial waste, as was the air. Filmy housing—cheap and hastily built—was put up for migrant workers from the rural areas of England. Poverty and religious discrimination sent hordes of immigrant workers to America, where though employment opportunities were plentiful, the number of hands available, their ignorance and strangeness in a new environment, made the grossest exploitation possible. On the edges of the mining towns of Pennsylvania and West Virginia one can still see the remnants of the incredible squalor of workers housing, as one can see in the coolie lines attached to the Jute Mills of Calcutta.

9. In Europe and America, the factory city gave new opportunities for education, social and political life. The consciences of at least some influential citizens was awakened early and local governments began to assume responsibility for socialized municipal house keeping. Technological developments of the time facilitated the process. Private water supply was replaced by public owned water networks, the provision of abundant water led to the development of sewage mains, and sewage treatment plants, at least in the larger cities. Street paving, permissible through the development of asphalt topping techniques, finally made possible the daily washing of streets. Municipal responsibility for garbage disposal completes the list of western successes. Air pollution, though considerably improved, is still a problem for us.

10. Housing preoccupied the conscience of idealists and the Fabian Socialist Society became a strong pressure group. A few business men had launched in Bourneville and Port Sunlight in England, the first paternalistic model towns for workers.

11. In the last decade of the 19th Century, an obscure little man named Ebenezer Howard conceived of a new idea and launched the garden city movement, as an answer to the filth and degradation of human values that he saw in London. This movement, enlisting the support of progressive industrialists and wealthy reformers, successfully established the first two satellite cities—Letchworth and Welwyn Garden City. Howard's ideas were simple and logical and it was possibly their very simplicity, plus the dedicated drive of their originator, that has aided in their final successful acceptance. There were—

- (1) Limited urban population size of 30,000.
- (2) Industrial decentralization.
- (3) Shorten journey to work (walk) (ignoring steel mill coke oven).
- (4) Provision of all conveniences—shopping, schools, health, etc.
- (5) Creation of an environment, propitious for the active emergence of the individual, stifled in the urban environment.
- (6) All to be surrounded by agricultural Green Belt (2,000 pop.).
- (7) All land, agricultural as well as the inner city, totalling 6,000 acres, was to be owned by the development corporation.
- (8) Series of 10 such towns, joined for broader commercial and cultural services.

Howard was influenced not only by earlier Victorian idealists and reformers, but by writings of Peter Kropotkin, a geographer, who almost fifty years before his time saw the technological possibilities of decentralized industry and the potential equalization of amenity between town and country, made possible through improved communications. In his book "Fields Factory and Farm" he developed these ideas.

12. Both in England and in America by the first decades of the 20th Century, the results of Fabian Socialism, the growing labour movement, the new field of sociology had given birth to a series of pamphlets, newspaper stories and full blown research studies on the life and conditions of the working classes.

13. Patrick Geddes the great biologist, sociologist and town planner, with the grasp of a Universal Man of the Renaissance had developed his great city exhibition and had stressed the importance of the civic survey as an aid to organic understanding of the functioning of the city. Aside from his broad human approach to urban life, Geddes was a botanist and was interested in plant ecology, which when translated to human ecology, contained the elements of the biological as well as the social relations between man and his environment. Geddes's unique contribution to Indian Planning was a cautious respect for what man and history had wrought, and a conservative approach (he called it conservative surgery) in all of his recommendations for urban improvement. Two of his particular observations were, (i) the economies to be gained from conservative approach to urban renewal: treatment of areas, based on the criterion of selective renovation rather than total demolition. Aside from the actual savings in cash, such an approach preserves the basic social matrix of the area to be improved. It has

further considerable aesthetic significance. He insisted on constant and conscientious observation in the field and the need to leave the drafting table or the office to walk step by step through every nook and cranny of the redevelopment area so that one may observe not only the social significance of actual qualities and conditions, but with the creative talents of the designer one may bring a sure architectural hand to the creative aspects of the work. The final product is not only sound economically and culturally but is also more beautiful and more satisfying. I lay special emphasis on this question of aesthetics because early city planning which was developed purely from the aesthetic point of view, shifted its own emphasis in its missionary efforts to include social and economic aspects in the study of urban development. This tended to a swing of the pendulum which placed the artistic contribution of the architect and designer in a secondary position. Actual construction has the virtue of being a tangible sign of the future, and therefore contributes toward a positive morale, through a gradually growing visible achievement.

14. One, too often, hears in India that in the present economic conditions we have no time for design or aesthetics. Any good architect will quickly defend his profession on the grounds that a good design is rational and hence economical—often more economical than the unimaginative proposals of administrators. In addition, however, there is no need to depreciate the absolute contribution of aesthetics to human society, in housing and town planning work.

15. In America, the social reformer and journalist Jacob Reiss had indefatigably toured the slums of the Lower East Side of New York, and after years of writing and exhortation, had been instrumental in launching the first privately supported model houses for workers that were built in the city. In England, there was even an earlier recognition on the part of municipal bodies of their responsibilities in improving housing, and I believe that the first corporation houses to be built in the late 19th Century, were in Liverpool.

16. Jane Addams in Chicago, had after years of work in the slums established the first American Settlement House—Hull House in Chicago. Here, university students and professional social workers developed the earliest techniques of community organization, which were later recognized as essential supports to any lasting solutions to the knotty social and physical problems encountered in urban improvement works.

17. The ever increasing interest of reformers in slum improvement was accompanied by new developments in social research skills. The University of Chicago Community Inventory, based on the work of Ernest Burgess had laid down the lines for the study of human ecology by sociologists as well as geographers. By this time, the social survey of the city was amassing data on population characteristics, and social problems, as indices of change or social disorganisation. These data, on age, sex, population growth, occupation, income, religion, race, etc—were analyzed through mapping, for their spatial connotations. This led to the observation of a series of coincidences of similar social characteristics in specific sectors of the city and ended by correlating the high inci-

dence of social malaise, crime, prostitution, disease, high death rates, divorce, suicide, etc, with poverty and slums. This was what the proponents of public housing in America were waiting for.

18. In Europe, notably in Holland, and the Scandinavian countries, as well as in England early intervention of municipal government in subsidized housing for the working classes and the needy had been initiated even prior to World War I. In America, it was not until the depression, and the beginning of the Roosevelt era, that government began to take a more direct role in solving these social problems. From 1932, under the NIRA and the PWA, housing was supported by government, as part of its programs to aid industrial recovery through, consuming raw materials, and giving employment to the jobless. It was not until 1937 that the United States Housing Act was finally passed, enunciating a general housing policy for the U.S.—subsidized housing related to slum clearance—as a part of the solution to the physical and social ills of the economy. The last U.S. Housing Act—1949 amended and enlarged the scope of slum clearance by :

- (1) freeing the developers from the exclusive requirement to construct housing on slum cleared areas;
- (2) enlarging the powers of municipalities to condemn blighted lands, and resell at use values for redevelopment by private investors.

The Legislation, at the time of 1930's, also provided for an American experimentation with the garden city idea of E. Howard. Six Green Belt towns were built—incorporating partial elements of the English reformer's vision, and adding an American ingredient.

19. In 1927-31 there appeared in eight volumes a study of New York and its Environments in which was an article by Clarence Perry, proposing, once again, a return to individual values, the warmth and social utility of close primary face-to-face associations that had been considered the strength of the village society, and had been lost in the anonymous mass of the large industrial city. By this time American society had developed an unhappy awareness of municipal corruption and ward politics where a working class vote was a commodity to be purchased by favour or by cash, and where the rich had fled the grey and spiritless central core to the sunny and bucolic joys of suburbia. It was assumed that here, in renewed face-to-face contacts, they reformed as active citizens, participating at all stages in local government decisions. Perry's response to the loss of prestige and social responsibility in the city was a proposal to incorporate the supposed qualities of suburban and village life into the urban neighbourhood; hence the birth of the "neighbourhood theory" as a convenient social philosophy for planners, and the neighbourhood unit as a convenient spatial tool for design.

Together with Sir Raymond Unwin, the British Planner, Perry might have asked "Where is the spatial economy in the high density, narrow lot, city street Plan, which provides neither safety

nor convenience for pedestrians, and which consumes an unnecessarily high proportion of land for traffic movement?" He presented a physical diagram that would not only provide a safe and intimate domestic scale in the residential precinct, but would ease traffic movement on the periphery. Though the core of Clarence Perry's idea, was face-to-face social contact, sustainable only within a walking distance radius, since it was determined that the young child's daily walk to school and playground should not exceed $\frac{1}{4}$ mile, the widest dimension of the neighbourhood unit was set at a half mile, with the school at its core. A population of 5,000 was assessed as a large enough group to support the primary school, convenience shopping, church, library etc. The most important aspect of the plan was the community centre. Here, local citizens would once more develop the strong sense of civic responsibility without which the surface democratic government structure fast deteriorates.

20. This idea, full of reform zeal in 1920's and 30's will not have been unheard of in India, where in 1957 J. P. Narayan returning from his trips to Yugoslavia and Egypt brought back the message of decentralized democracy that he had observed in Belgrade and in rural Egypt.

21. In 1959, the Royal Commissions' Report on Municipal Reorganization for London discussed the possibility of decentralized administration of certain personal services like schools, health, housing, etc. The latest report of Mr. B. Chatterjee of Delhi, proposes that the function of his neighbourhood councils be expanded, to exercise some of the functions of panchayati raj.

22. Let us not examine the merits of that proposal at this moment, but start now to examine, for India and the developing countries, the applicability of the concepts whose historical development I have just finished tracing in the West. The Western experience was gone through so far without illustrating parallel developmental phenomena in India, or in Latin America—both of which I know—because, there are some gross similarities in economic and urban development between East and West; there are also profound dissimilarities. Yet the systematic exposition of western planning thought is being passed on to Asian students, as they go abroad, and is adopted whole hog by Asian administrators who need quick solutions to real problems.

23. Planning schools and research agencies here are developing a corpus of social information and evaluating present construction efforts, as well as proposing experimental forms that may lead to solutions that more directly reflect Indian and Asian socio-cultural conditions. I should like to do a bit of that kind of evaluation, now. Let us start by underlining some of the obvious differences between European and Indian urban development.

24. Though the demographic picture is roughly parallel to Western development, there are significant differences. Indian urban development, starting 50 years later, has been developing at a slower pace than urbanization in the West—and there would seem to be good economic causes for it. However, migration is continuing and Indian cities will be expanding in population in the future.

(1) The proportion of urban economic growth carried by the Industrial and Manufacturing sector has been smaller than that of Europe of comparable

periods in the history. Further, India is predominant in small scale and cottage industry types, mostly family run, offering a smaller employment potential to the open market.

(2) Indian urban labour force is engaged to a small extent in manufacturing than Europe was at a comparable period of urban growth. The largest employment sector is in service. Further, India has the historical bad luck to face the technical developments of today, where new industry is increasingly less labour intensive. Service industries in the West are now often the major economic base of the great urban centres—and are increasingly becoming so in the smaller cities too. In Indian cities, too, the service component rises high. In Calcutta it is something like 40% of the total labour force. This is an element that has been ignored in industry-based new town planning both in East and West.

The problem of adaptation and standardization of small-scale and cottage type industries to modern production requirements is a serious one. Indian planners are studying the possible applications of the Japanese experience to this Country, since Japan has developed a very successful system of standardization and subcontracting to ancillary small industries.

(3) **An unbalanced labour market:**—Since rationalized industry is producing the same products, by modern means, as small scale industries, we have non-competitive production, with manufacturers often serving two different social markets. Therefore, there is no straight line in the development of mechanical and administrative skills and we have what Bert Hoselitz calls a *fractured labour market*. This imbalance is recognized up and down the line, where the call to develop vocational education and skilled labour is countered with the presence of skilled or highly educated workers facing long periods of unemployment today. Consequently, social mobility and the upward pattern of adaptation to urban living habits is therefore slowed down.

25. These differences in economic development lead us to social and cultural differences that exist between Eastern and Western states.

(1) **The presence of communal groups:**—The influence of caste and linguistic and regional differences lead to a spatial separation in the pattern of human settlement and a peculiar spatial immobility that may have to be reckoned with. The caste system as a whole we know, is a further impediment to social mobility. Thus, we have in Indian Cities agglomerations of different castes and communities living side by side, moving in separate social orbits and served by separate social facilities.

(2) In addition, the urban elite is highly westernized and often wide of the mark in identifying with a villager, or a lower middle class and working class groups of

the City. We face a problem of a conflict in values, with planners and administrators proposing solutions that are often unrelated to the needs and aspirations of the people they serve. We are faced with the question "what is upward mobility in this culture?" Let us not get into the question of values of the merits of westernization as opposed to perpetuation of traditional culture. Let us simply state the actual emergence of new cultural patterns in the cities whether they are born of East or West.

- (3) Western town government grew out of the evolution of the city state of Renaissance times in Europe. Municipal autonomy did not develop here due to well-known history: invasions from the North, Feudal wars—and the perpetuation of a feudal agricultural economy, the ultimate colonial status of the sub-continent in the last 200 years where crucial new responsibilities were assumed by the towns in Europe. Therefore, in India no institutions of municipal self-government developed, nor does there exist a corps of responsible municipal servants.

26. Here we might return to B. Chatterji's idea of using the neighbourhood counsels which are presently a part of the apparatus of Delhi urban community development program and converting them to "zonal counsels" in a decentralized urban Government. This suggestion has merits in that it saves energies of scarce good administrators and delegates routine administration of local services to lower level personnel. There is much to be said for the application of the principle of rural panchayati raj to the urban area. It is of course, much too early to judge the effects of the rural experiment, but the artificial distinction drawn between village and town is difficult to justify.

27. But at the same time I draw a strict line between the development of local self-government and the expansion of the rural community organizer in this function. As a planner, concerned with the problems of municipal house-keeping and provision of services, I believe that the role of the community organizer in the first stage should be set on realistic goals that will produce measurable and tangible effects, rather than expanding to meet the diffuse needs of all levels of government and the undirected *felt needs* of the people. Let me stop here to underline a concept that has been misinterpreted in the field. "Felt need" is a device, a methodological tool which is not an end in itself. One must build on felt needs in order to reach a pre-determined goal within a system of precisely defined priorities.

28. Let us now address ourselves to the values and applicability of the core principles of housing and planning that developed in theory and in fragmentary experiment between 1900 and 1947 in the West. These are:

- (1) The Garden City containing housing, work centres and ancillary services on land wholly uncontrolled by the development agency.
- (2) The neighbourhood as an integral part of what has become new town development as well as the standard applied to.

- (3) Urban renewal and slum clearance in school areas.
- (4) Urban community development utilizing a technique of community organization as a necessary support to improvement and maintenance in both old and new development zones.

29. Could we discuss the results of the practical application of these concepts in the post-war period both in India and abroad?

30. The dramatic decision of the labour government to take up the decongestion of London resulted in the development of fifteen new towns developed on the principle of the Green Belt or Garden City. Here in a nut-shell or at least in fifteen peanuts we can start to measure and evaluate the work of Ebenezer Howard's original idea and its expansion by American and British planners. We can evaluate this through a commentary on the success and failures in the U.K., U.S., and in India.

List of discussion topics:

- (1) The sheer fact of their existence is sure proof of acceptance:
 - Chandigarh.
 - Steel town Durgapur.
 - Bhubaneswar.
 - Kalyani.
- (2) The idea is highly acceptable to the houseless where it offers both home and job. Negative example—Kalyani; underlines naked housing as an inadequate solution.
- (3) The peculiar age, sex pyramid, the humps and valleys in demand for services lead to the need for careful phasing in supply of schools, health centres and shopping facilities. For example:
 - (i) Chandigarh sector 22.
 - (ii) Durgapur.

Both of these have service centres developing far from the future city centre. Parks need to consider climate and environment before applying Western standards to open spaces.

- (4) The lack of foresight in not providing for service people; resulting from over emphasis of the excellent concept of an industrial base to accompany new housing and neglect of secondary economic sector, e.g., Kitimat, British Columbia, Chandigarh.
- (5) Inacceptability to managerial class in England; to conservative old residents, professionals, intellectuals, etc., brings into question the whole concept of the neighbourhood unit. Develop ideas of Louis Wirth, American sociologist, on the ways people live in cities ranging widely. Iravati Karve points out to village society as a strong-hold of conservatives and reaction; the need to develop a broader focus in preference to the close-in neighbourhood centre.

(6) Urban Redevelopment: Experience in New York; destructions of old neighbourhoods; enormous costs to the displaced population and aggravation of their problems. This problem repeats in Calcutta, displaced bustee population forms new bustees; leads to the question of housing subsidy for re-housing slum dwellers, e.g., England and Holland, where 70% to 100% of new construction for all income group is subsidized heavily. India cannot afford this.
Need to develop experimental mini-

mum house types; for outlying areas; new development zones. The research centres NBO, CBRI Roorkee, etc, have file drawers full of models that need massive experimentation. Let's go out and build them. Possibly the success of Howard's new town lays with the fact that he made no vast social economic surveys to measure the social acceptability of his idea, but, passionately convinced of the rightness of the solution, he simply went out and experimented in the field.

Housing and the Stages of Development **

by

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1. THE HOUSING SITUATION

1.1 Whatever standard we set up as a yardstick of measuring the standard in housing for the mass of the people of India is low. Probably we can say that nine out of ten households are inadequately housed.

We know that this situation cannot be substantially changed unless the hidden resources of men and material now locked in the people and land of India are released for the corporate good. Housing will, eventually, only be provided for the masses through nationwide economic integration, expansion and diversification.

2. DEVELOPMENT

2.1 We need briefly to define this for the Indian context. The ideas that permeate the Five Year Plans are in the main social and political ideas. They reflect ideals that require economic expansion for their implementation. Because this is so, it is erroneous to consider the Plans as being exclusively production-oriented. They are not.

2.2 Economic goals are three of course :

- (i) raising of national output.
- (ii) achieving self-sustaining growth.
- (iii) making India self-supporting in world markets.

2.3 To achieve these ends, a strategy has been evolving through the series of Plans. This strategy has two main strands of thinking and activity :

Strand 1 : the establishment of heavy industry and the rationalisation of agricultural production, coal ; steel ; machinery and machine tools ; lorries ; railway engines and stock ; base chemicals and fertilizers.

Strand 2 : rural redevelopment ; village agriculture ; community development ; local construction ; rural industries ; the co-operative movements.

You will note that agriculture appears in both strands. It is the linking strain in between the two strands and also the weakest point in both strands.

2.4 These strands weaving together form the basic strategy of the Plans. Yet, unless there is an effective strategy within each strand itself they will neither evolve fruitfully or intertwine effectively. At the present time both these strands : typified on one hand by heavy industry and on the other by community development ; pursue their own

courses. They neither lean one towards the other nor make any attempt to intertwine into one evolving strategy. These two strands work under different leaderships, within frameworks of differing aspirations and have quite different pre-occupations.

3. HOW ARE THESE TWO STRANDS TO BE INTEGRATED

3.1 What dimensions have they in common ? Both strands concern the changing relationships between land and the use of land and people. The relation of land to people has many dimensions but essentially it is a spacial relationship. Both strands precipitate activities that extend out over lengthy periods of time and over very varying periods of time.

3.2 Complete integration cannot be expected between the two strands even if they were positively making an attempt to grow together, until many decades have passed.

3.3 People, space and time are the essential elements in the planning process, taking the land area as fixed and given.

3.4 These are the essential components of both strands. If they are to develop into one slowly evolving strand then these are the unifiers—people space and time—all having intimate relationships with land and its use.

4. STAGES OF DEVELOPMENT

4.1 These are typified by the character of the patterns of relationships between people and land and by the pattern of the distribution of the population over the surface of the land. Note the two extremes—an industrial nation with the majority of its population living in urban conglomerates, and a nation consisting of a constellation of villages—localised rural economics.

4.2 Development involves a tendency to move from constellations of villages to urban conglomerates. As development proceeds, as the two strands of the Five Year Plans evolve, so will be set in motion forces that will transform the relationship of people and land both in rural and urban areas. I am not here concerned with the legal aspects of such relationships but with the spacial relationships. People will come to occupy a different kind of relationship one to the other upon the land they occupy. They gradually will experience a change of space. Their living area, their horizons, expand. Their world appears larger and unless boldly conceived and ordered, malformed, fearsome and conducive of insecurity.

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4.3 Now that this is so, it is realised by the authors of the Third Five-Year Plan. They do allude to this but its implications are not followed through. However these population movements can be expected to be on such a scale that failure to account for them, within the positive framework of the Plans, could be hazardous to the successful evolution of its two distinctive strands. The question of preparing for the movement of population may prove to be a more significant factor in the development of the Plans than present concerns for population growth in terms of numbers.

4.4 Let us return to our two development strands again: typified by industrial activity and community development—the two extremes of the Plans. We saw earlier that both strands had elements in common. They were both concerned with the changing balance of relationships between men and land. We identified this as being essentially a spacial relationship and one that took place over a period of time.

4.5 Both strands of the development strategy require strategies within them of such a form that people, place, space and time are contained in comprehensible evolving patterns. These patterns will receive expression and order on the ground; they will lead to the creation of a new kind of living space.

4.6 It is therefore maintained that the successful evolution of the two strands of the existing development policy as expressed in the Five-Year Plans may depend upon the evolving of new living space patterns; new patterns of settlement that enable the new evolving patterns of changing relationships between people and land, between the population and its pattern of dispersal, to take place.

4.7 A policy is required for metropolitan and urban growth. A policy is required for the re-organisation of rural settlement.

Both are needed because,

- (i) An industrial commercial world cannot function for cities of millions of people unless it becomes a place of orderly relationships, orderly administered;
- (ii) the village is too small a unit for development. It is too highly an integrated unit to permit of evolution. It has to be absorbed into a larger whole, as a functioning part. As it does this, so will it change internally. The incorporation of existing villages into larger, wider concepts of settlement will allow the villages to be invigorated through absorption into a new functional framework of administration, government, transport, access and marketing. The essence of rural development is the transference of allegiance to wider, more embracing, opened social and political patterns of organisation.

5. HOUSING

5.1 If the foregoing is accepted, then it can be seen that housing for the millions is not only a goal of development, but it forms an integral part of the development process itself. It is an

essential component of the inner strategy that determines the success or failure of the evolution of the two strands of development; that of heavy industry and its associated urban world and that of community development with its implications of re-relating the village community to wider social frames of reference.

5.2 Neither industrial development nor the re- invigoration of agriculture and rural areas can move very far forward unless the spacial implications of development are realised and provided for. Upon these new spacial organisations of people and activity will grow the new housing—the housing which is part of the strategy of development.

6. CREATIVE HOUSING POLICY LINKED TO THE PROCESS OF DEVELOPMENT

6.1 A creative housing policy for India is then evolved from these two premises:

1. Housing is an essential component to the success of the two development strands.
2. Housing is part of the process of development itself—*i.e.*, it is a productive activity but one that works at one stage removed. The productivity of the more directly productive activities is closely linked to housing policies and activities.

7. A CONCEPTION OF THE NEW PATTERNS OF LIVING

7.1 Prior to putting such a policy based upon such premises into action, thought must be given to the form that the new settlements will make on the ground. Thought must be given to their possible size; to the problems of their organisation; to their spacial organisation and arrangement.

7.2 The design programme for both rural and metropolitan settlements in the context of rapid development is similar. Both involve vast numbers of people and large areas of land. The construction of these vast new settlements will take time even if the people contribute themselves to their construction. The continued movement of people both towards and within the new settlements will need to be provided for in their initial conception. The final form that these settlements will take cannot be predicted by us now. Each new part added will determine the nature of future growth.

7.3 We are dealing with a conception of order that involves embracing the union of opposites:

- unity/diversity
- large/small
- many/few
- inside/outside
- mass/space
- motion/rest
- individual/collective
- compactness/openness
- privacy/social intercourse

We will need spacial continuity and constructive flexibility and to remember that our measure is man's satisfaction with his newly evolving living space and the extent to which he feels at home within it,

7.4 This demands a new type of town planning. For where the planning instruments of law and law enforcement are weak, then the responsibility for design and leadership becomes greater. The new town planner directs and clarifies but does not predict every detail of the city. His thinking moves in from two directions. Outwards from the cell—the individual unit, and inwards from the whole—the evolving nature of the new living pattern; from the cell to the backbone of the settlement idea; to its stem.

7.5 Planning today, that is of town and cities, tends to concern itself in the main with relating one cell to the next cell. It does this at many scales. But this method is additive. No large comprehensible order is formed. The city lacks coherence. It is difficult to understand and difficult to move about in. The problem of human habitat on a vast scale is only half solved by this additive process of planning; one dwelling added to another; one neighbourhood added to another; one factory placed next to the other. This approach is concerned only with the cell and not with the activity of the cell, its interaction upon others, and the growth of the total environment.

7.6 The idea that a housing project can be conceived as an isolated unit—as collection of household cells placed next to one another or on top of one another—is almost a denial of life itself. Every group of people forms part of a larger group. In the same way every collection of housing units is part of a larger group, a group with a character, shape, patterns of movements and activity. A housing scheme is always an extension to an existing situation and forerunner of further extensions. It cannot be considered as an isolated event.

8. WE USE THE WORD HABITAT TO IMPLY THIS INTERACTION OF THE PARTS WITHIN THE WHOLE

8.1 It is useless to consider the house except as part of a community, owing to the interaction of one upon the other; a part/whole relationship. Because of this, we cannot write a design programme for a house unless the larger, more embracing relationship has been understood. The house forms but a cell or a larger living organisation which has its own necessities which bear upon the design and location of the individual cell—the house. Habitat then is concerned with the particular house in a particular type of community. Housing takes up the most area and the largest bulk of building in the constructed habitat. In rural areas habitat forms part of the landscape. In urban areas habitat is landscape.

8.2 We can define the concept of habitat in relation to planned development of an economy as being housing for the greatest number, i.e., housing not conceived for special groups of the population, such as industrial workers, slum dwellers, scheduled castes, but for the population as a whole, for the whole community.

9. PRINCIPLES OF HABITAT

9.1 (i) In the context of a rapidly changing landscape which accompanies development, it is impossible for each man to construct his house for himself.

(ii) It is for the government/administrator/architect/engineer/builder to make it possible for the man to make his house his home.

(iii) It is wrong to design the house in such a detail and in such a manner that people are forced to live in ways that are unnatural for them.

(iv) We must prepare the habitat only to the point at which the people as a whole, families, individuals can take over.

(v) The elements of habitat: land utilities and shelter.

(vi) It is the arrangement of land and the conceiving of patterns of utilities, water supply, drainage, sewers and light which must precede the erection of shelter. Yet this priority must not be taken to imply any particular standard of utilities; one tap per hundred families may be the appropriate temporary standard in the early days of creating a city of millions of people.

9.2 What does all this mean? What do we do next? If anything?

93. What has been said is intended not so much to offer a solution as to provide an appropriate framework for thinking. Thinking must precede action if purpose is to be achieved. Housing cannot continue to be conceived as unit plus unit plus unit plus unit plus unit plus unit. Or India will end up being a thousand miles of organised nowhere? A new climate of thinking is required; one which can create a new environment for a new India; an environment which is comprehensible and one in which people, the mass of the people feel they belong.

10. THE FIELD OF THEORY OF HABITAT

Spacial Theories

Planning	Villages
Process	Towns
Planning	Cities
Process	Regions

From the interaction of process of which we have been thinking and of theories concerning the spacial organisation of living areas, emerge planning practice, planning principles and planning law.

10.2 The principles that evolve are dependant therefore for their validity upon the validity and relevance of the theories.

And so does the law!

We can illustrate this by an example.

11. EVOLUTION OF PLANNING LAW IN THE UNITED KINGDOM

<i>Planning</i>	<i>Spacial Idea</i>
Process evolved from concern to build a finite conception "the garden city".	rural urbanism : a city in a garden separation of functions; living, work, play; but basically not a special idea at all, it is the aesthetic means of achieving a social ideal.

11.1 From the marriage of the idea of a 'finite garden city' with a social ideal has come forty years of planning legislation.

11.2 This has been modified in the last decade or so in order to come to terms with 'rational architecture'. This we can typify here by the 'north-south' slab block of flats. But the isolation one from the other, of dwellings, work areas, recreation and almost life itself from all, is one of the "principles" of planning.

11.3 We do not require this sort of planning. We do not need planning as it is. We need a new sort of town planning. "Planning as it ought-to-be".

12. THE STRATEGY OF HABITAT

12.1 The main task now confronting those worried over the housing problem in India needs little money to be applied for its solution. But it requires a great deal of mental application and intellectual effort. The main task is to conceive the character and forms of the new patterns of settlement that will emerge through the realisation of the development process, as the two strands of the Five Year Plans unwind. The conceiving of the nature of this new environment is as necessary as foreign exchange in realising the full potential of everybody's efforts.

12.2 In this way of assessing the relationship of housing to the stages of development housing becomes part of the strategy of development and having a clear role to play in both strands. Whilst housing remains an item of welfare and of consumption in this conception, it also becomes, and more importantly from the point of view of overall development progress, an item of strategic investment. Not one in which the maximum use of the funds available in the form of men, organisation, ideas, materials and designs and finance must be made for the good of the greatest number.

12.3 What effect does such a conception have on standards? What will the form of the houses be? The form of the houses that it might be possible to build within such a framework of policy has yet to be evolved. In rural settlements we might however predict a design programme something as follows:

12.4 The problem of providing great quantity in housing can be resolved without lowering standards of space, design and quality of environment by taking the 'open form' as a basis. In the open form conception the design and construction of habitat is not conceived as one final act. The use of the land, the installation of improved utilities and the shaping and completing of the home spread out in time and accompany the whole process of development.

12.5 The open form, expressed crudely as enclosed spaces and roofs by skeleton structures, unlike the closed form (the virtual completion of a finished dwelling) does not exclude the energy and initiative of the tenants. It takes it to be basic, organic and an inseparable component, as it must be in any aspect of development.

12.6 The open form house cannot be humanised without a sensitive articulation of number. This is in common with other forms of housing cell.

The cell and the stem to which it belongs have to form one inter-acting conception.

12.7 Housing units (cells) the most effective way to conceive these is to proceed from those elements which can most easily be determined; entry, cooking, washing. Then to cluster other activity areas around, *i.e.* establish the core of activity and then provide areas for associated living patterns. Larger order (stem) part of the shaping of the individual house cell is determined by the stem, and the cluster of houses of which the housing cell forms a part. The design of the house grows outwards from the family and its needs and inwards from the stem and the cluster.

The stem or larger order (the form of growth pattern of the village, town, city or region) is thus considered not only as a link between additive cells but as a generator of habitat and habitat form. It provides the environment in which the cells may function: in which the men may get to work easily, the women to market and the children to school. The design conception of the basic habitat influences the design of the cells it serves. If this conception incorporates—as it must within the situation of a development strand—ideas of mobility, change and growth, then these characteristics will necessarily affect the design of the cells. The shape of the pattern of the future is unknown. The door must always be left open to the future.

13. TRANSPORT AND THE SHAPE OF SETTLEMENTS

13.1 While people can travel at uniform speed from place of arrival, *i.e.*, the same speed all the way on foot or by cart, then habitat tends to develop readily from the point of greatest concentration—'villages'.

13.2 As soon as widely differing speeds of travel exist, of the order of ten to one or more, then development proceeds in a linear direction, *i.e.*, pedestrian movement to bust or tramcar; motor car at fifty miles an hour to aeroplane at five hundred miles an hour.

13.3 If the cost of halting the fast mode of travel is fairly cheap (bus, electric train) then the development of habitat will tend to form a continuous ribbon.

13.4 If the cost of halting is expensive (railway terminous or air terminal) development will form a series of dots along a line.

13.5 The interest of these phenomena to us who are interested in housing is that these facts provide a clue to the design of habitat stems. If we plan for swift transport in a desired direction then it will surely lead to a linear form of development.

14. THE LIFE CYCLE OF HOUSING CELLS

14.1 Many standards of housing are appropriate in the context of a stem community experiencing the transformation scenes that accompany social and economic development. There can be no one standard capable of enforcement through any particular community, large or small. Each cluster of houses within the frame of the whole city or town will be changing and evolving according to differing cycles of time and according to the extent of the involvement in the process of developments itself.

14.2 Some parts of a community could usefully be conceived as evolving through five-year cycles. Their housing would be temporary in character and designed and built for replacement.

14.3 Some parts of the community could be conceived as evolving on a twenty-year cycle. Their housing could be semi-permanent and designed for some repair but eventual replacement, as the family prospers. Some parts of the community could be conceived as having a seventy-five year cycle and

their houses would be designed for permanence and for internal flexibility to allow for changed ways of living.

14.4 The proportion of five-year, twenty-year and seventy-five year clusters in a particular community will be determined by its stage of economic development. At this present stage throughout much of India most houses will fall in five-year and twenty-year cycles.

Public Action to Accomplish Urban and Regional Planning Objective including Housing**

by

Mr. John P. Robin†

When we talk of public policies to accomplish planning objectives, including housing, we must first have a look at what kind of planning objectives we are discussing.

It is a common error, to which we are all prone, to assume that all human societies have the same purposes and areas of concentration as we would have, and that every person, even in our own time and in our own country, is in agreement with the social and economic order which we ourselves would find ideal.

History would seem to tell us very clearly that there is no universally accepted rationale, no inexorably logical process, by which a human society, a culture, a civilization, selects the objectives toward which it will choose to bring a maximum array of strength and purpose.

Some societies have been other-worldly, concerned with death and its aftermath much more than with life and its living. The ancient Egyptians, for instance, were obsessed—as we would view it—with the physical preservation of the dead and with appropriate and sumptuous entombment. We find it hard to envision a society which spent so much of its vital energies in constructing the Pyramids as tombs for its late kings. Medieval India and medieval Europe were also obsessed with the supernatural, not as lodged in the body of man but as enthroned in the very heavens. These societies expressed themselves in the houses which they built—temples and cathedrals for gods, palaces for a Superior Being. Many generations later, the Superior Being had become not a God but a man with God-like endowments—a Moghul emperor, a king of France—and such regal societies found their expression in the palaces and gardens of Delhi, or Agra, or Versailles.

The frame of some societies has been naked war—ancient Sparta, the Mongol hordes, Hitler's Germany.

The frame of others has been aesthetic expression—Athens in the age of Pericles, or the Italian cities of the Renaissance.

What frame do we find in our own world and our own day?

The answer that most of us would give is that we are obviously not other worldly except in the grim sense that we now have the power to blow *this* world into sterile lifelessness. We do not build our proudest edifices to the glory of God, and we do not exalt our rulers to the Godhead. We do spend an enormous portion of our resources in the

preparation for war but we do not look to war as a thing desirable in its ultimate yield to any segment of mankind. We arm in fear of our neighbours and contestants, not to enrich ourselves by their despoilation, and they arm in fear of us. It should be the prayer of this society—as its achievement would be its salvation—that the chain of fear will somehow, someday, be broken

The frame of our society will not be found in aesthetic expression—although that may be its evolutionary course—and it will certainly not be found in ascetic rejection of the material world.

The frame is, I think, science and technology.

The objectives *are* material.

The hope is an unparalleled revolution in the immemorial condition of man.

The planning objective is that no human being, anywhere, need be hungry or undernourished; that no human being, anywhere, be without proper clothing; that no human being, anywhere, be without decent shelter. We must plan, I would submit, so that all men and women live out their life span to the maximum years that environmental health and medical care will secure, and that every inherent skill and talent in every child everywhere find its opportunity and fulfilment.

Those are huge goals, stated in huge terms.

They will be achieved, if they are achieved, slowly and step-by-step, country-by-country, region-by-region, city-by-city, neighbourhood-by-neighbourhood, family-by-family—by an almost infinite number of actions taken by uncounted numbers of people.

It seems to me that we are perhaps coming to something like a world consensus on these planning objectives for our Twentieth Century variety of human association.

They are what the President of my country, the United States, is talking about when he calls for a war against the poverty that still remains as a tragic undercrust in very rich and productive American society.

Prime Minister Nehru and the great majority of the people of India have supported these objectives since the nation attained its independence and assumed the burdens and opportunities that are inseparable from self-government.

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We seem to be approaching a consensus.

It may be argued that we have unanimity, especially as to means and methods, and very particularly, as to the amount of economic and civil liberty that a society may withhold from its members as it pursues these aims. And throughout the world, in every nation, there are those who would rather hurt others than help themselves, people so racked by ancient national, racial, and religious hatreds as to be blind and hostile to any general good.

But with objectives and purposes understood and intuitively accepted, it does become possible to shape public policies so that they will accomplish the planning objectives that are agreed to. And that is what I came here to discuss with you; in fact, I can say that it is not only what brought me to Bangalore today at the inauguration of this course, but it is what brought me and many of my colleagues whom you will hear during its term to Calcutta and to India.

While planning program for metropolitan area and its region of influence is pre-eminently *spatial* planning, *economic* planning which in India is the responsibility of the National Planning Commission, the Ministry of Finance, and in the final analysis, of the Prime Minister and his entire Government. Economic planning varies greatly in its methods and intensity from country to country. In the traditional *laissez-faire* economy of the Nineteenth Century, following the doctrines set down by Adam Smith in his *Wealth of Nations*, it was held that governments should do no economic planning at all; it was believed that their prosperity could be best assured and the improvement of their citizens' condition best achieved by absolute freedom of trade. All economic decisions were to be decided in the market place. Competition would produce ever-increasing efficiency; the standard of living would inevitably rise as goods became better and cheaper. This economic liberalism became an article of almost religious faith in many minds. Laws regulating child labour, and the conditions of work in factories and mines, were strongly opposed in the name of *Laissez-faire*. But even in the Nineteenth Century, *laissez-faire* was more honoured in the breach than in the observance; in the United States, we adopted a protective tariff, provided huge land grants for our trans-continental railroads, and inflated the money supply, making "green-backs" (paper money) legal tender and refusing specie payment (gold or silver) for almost twenty years.

It would be fair to say that no country today is without some form of economic planning. Every national budget that is adopted, every tax measure, every tariff and excise and export inducement, is economic planning. The United States, for example, is a nation which has a philosophic belief in a maximum degree of economic freedom. That is not to say that America does not today employ a very wide selection of the tools of economic planning. There is a reluctance in America to use direct controls and a desire to create incentives but certainly the economic policies of the United States are being consciously planned to accelerate economic growth, to reduce unemployment, to stabilize farm income, to insure competition and eliminate price-fixing, and very definitely to use the economic power of government to maintain a steady flow of new housing construction.

Let me list some illustrations:

1. The President of the United States has, by law, a Council of Economic Advisers. These men—there are three of them—prepare for the President and for the nation an Annual Report in which they forecast the trends of the American economy and make recommendations whose basic purpose, under the law, is the development and maintenance of an economy which will provide full employment to the labour force of the country.

2. The national government, and state and local governments, spend each year more than twenty-five per cent of the gross national product of the American people. Obviously, the Federal budget, which is now at a level of one hundred billion dollars, or 50,000 crores of rupees, is an exercise in economic planning, and the expenditures of states and cities are by no means an insignificant factor in America's economic life. The tax structure which supports these vast outlays is an instrument which can be, and is, used to produce pronounced economic effects.

For instance, the Government of the United States is now committed to one of the major experiments of our time. On the advice of their economists, the late President Kennedy and his successor, President Johnson, most strongly urged upon the Congress that a deep cut in personnel income taxes (amounting to a 1964 aggregate of eleven billion dollars) be enacted for the admitted purpose of increasing consumer purchasing power and stimulating the growth of the national economy. The tax reductions are now law, and it is argued, among other things, that the apparent loss to the Federal treasury will be made up by the higher level of corporate and personal income which will result from the induced economic growth.

3. Through the Federal Reserve Bank and through the policies of the Treasury Department, the national government effectively regulates the money supply and the interest rate. America has "cheap" money or less cheap money as the economy seems to require; easy credit or tight credit are provided as the economy alternately seems to require stimulus or a brake.

4. It is a criminal offence in the United States for businessmen to conspire to suppress competition and to fix the price of the commodities which their companies produce.

5. Where the so-called natural monopolies exist, and where the business organisations render essential public service, as in transport and the development and distribution of electric power, public regulatory bodies—both national and state—control rates and supervise basic policies.

Many more examples of economic planning could be cited from the experience of the United State, but it is clear that in today's complex societies, even those which believe, as America does, that free enterprise and individual initiative bring an invaluable elasticity to a social system, are necessarily committed to economic planning as a means of achieving the public policies which are fundamental to the planning objectives which are now being shaped as a consensus in so much of the world.

This consensus is the belief, based on the achievements and potential achievements of science and technology, that poverty and material human misery can be abolished and that the "good life" is within reach of the great majority, instead of the tiny minority of mankind.

This is the essential planning objective we are talking about, and the one into which all others fold.

It is, in appearance and in fact, an objective which deals with the material—food and shelter, health and longevity, more creature comfort, more opportunity for physical enjoyment. It does not look on the world as necessarily a vale of wrath and tears—it looks on our life as capable of remedy; in the pursuit of happiness we will not be fatally handicapped by the physical miseries that for so many centuries have been accepted as man's inevitable fate.

Obviously, there is no messianic cure here for the spiritual and emotional burdens which we will always bear, no matter how comfortably we may shape our lives.

But within this world consensus there is nothing crass and little that is plainly selfish. It may be suggested that it is as idealistic in its goals as any age of faith, and that men and women, in every land and in every circumstance, may well find that participation in it—working toward its achievement—will bring to them a sense of purpose, a belief in the goodness of their work and its usefulness to mankind, that will be the source of enormous satisfaction.

The consensus in present context implies a basic unselfishness, a willingness to share, a realization that we cannot be truly happy in our good fortune while our brother is wretched in his pain.

It implies that there must be a sharing between nations and between continents, a wish not to pull down but to lift up. And even more it implies that within nations, the favoured will not look upon the destitute and, in blindness born of centuries of custom, let the unfavoured lie for ever in the dust, the squalor, the disease, the deprivation which has for so long been their lot.

For it is probable that we can do—and it is certain that our sons can do—what has never before been done in human history.

We can produce, if we wish, enough for all.

We can so order our affairs that in a generation, the revolution of expectations will have been recognized and accommodated throughout the world and we will have vanquished the age-old enemies, poverty, malnutrition, stifled opportunity, that so long have held so much of humanity in bondage.

It is in truth, a great time in which to live... and, as a poet said of another era, "to be young were very heaven".

The objective of the planning that we do, whether it is in the macroeconomics which sets the direction of a nation or in the tube well or sewer is for making life just a little more bearable in a Calcutta *bustee*.

In the specific field of housing, the work that policy-makers and policy implementers will do in the hundred capitals of the world, will be for the general urban environment. We may talk of grand designs and propose to execute them. But every grand design is a mosaic of a thousand small ones. To cite some examples :

The public policy of the United States, as enunciated by the Congress, is to make it possible for every American family to live in a decent, safe and sanitary home. A comprehensive housing act was passed in 1949, and it has since been amended, broadened, and improved in many areas of application.

In respect to housing, the United States has a declared objective.

By use of the Federal Government's economic power, embodied in tax resources, mortgage insurance, and influence on the interest rates available from private lenders, its economic planning leads, in broad terms, to the accomplishment of that objective.

But the actual execution of the policy—the accomplishment of the macroeconomic planning—takes place in *spatial* terms, a dwelling unit must ultimately be erected, and it must be erected according to a specific design, with its own economic plan of cost and income to defray cost, on a specific piece of land in a specific community.

Here are some macro figures which relate to housing programs in the United States.

In 1962, American financial institutions held mortgages on housing totalling \$229,800,000,000 (14,000 Crores of Rupees). Of this amount the Federal Government through its Federal Housing Administration had insured \$82,000,000,000 (4,100 Crores).

Obviously, then, there is an abundant flow of housing credit in the United States which makes it possible for the majority of the American people, 61.9 per cent, to own the homes in which they live, subject in more than half the instances of home ownership, to a mortgage which their annual income is large enough to service. It is also possible for entrepreneurs to finance and construct apartment buildings for rental to middle-income and upper-income families, finding credit in both the conventional money market and in the mortgage money made available by FHA (government) insurance, and where necessary, government purchase of the mortgage.

It is fair to say that the housing industry in the United States is very largely the product of economic planning by the Federal Government.

But the actual production of the great majority of the nation's homes depends upon a series of privately owned and operated enterprises, among them the manufacturers of building materials, architectural and engineering firms, real estate brokers, building contractors and professional home builders, lending institutions and of course, the home buyer or apartment renter who provides the market. It is here that economic planning is finally translated to *spatial* planning. Local municipalities control the development of land and quality of housing placed on land by their own selected patterns of zoning, sub-division regulation, the installation of streets and public utilities, and building and housing codes.

There is no universally applied planning standard; except for the minimum regulations which are imposed as a condition of obtaining mortgage insurance from the Federal Housing Administration, localities are generally free to regulate land use as their conscience and their knowledge guide them.

There is general agreement that we have not done so well in our spatial planning for new housing development as we have in our economic planning. But the volume of new housing which starts each year is enormous. About 1,500,000 new homes go into construction every year in the United States, which is three times our home building rate in 1940, the last year before World War II. And the restless American people are reputed to move, on the average, every four years, hopefully into housing which more nearly meets their heart's desire.

We say very harsh things about our suburban housing developments. The houses themselves are often uninspired—"ticky-tacky" is a current epithet; the developments segregate themselves by income groups; there has been insufficient land reserved for the public needs of the future; there is a complete dependence on the private automobile as a means of transportation; there is a separation from the life and variety of the bustling central city; there is the high cost of innumerable single family residences. And all these things are true.

It is also true, however, that from 1950 through 1963, more than fifteen million new non-farm dwelling units—homes and apartments—have come on the market to be bought or rented by the people of America. It is virtually certain that no such spectacular addition to the housing supply would have resulted if government in the United States, either Federal or state or municipal, had attempted to meet the need for housing by direct investment and construction instead of by the indirect method of making borrowing for home construction relatively cheap and easy. It is probable, too, that public housing projects, designed, owned, and operated by agencies of government, would not necessarily be superior in their spatial planning.

It does not mean that official American housing policy is opposed to direct public action in housing. We have found it an absolute necessity in providing decent housing for families whose incomes are too small to permit them to purchase homes in the market or to rent homes at prices they can afford. In this area, the national government has a programme of subsidized housing, but again its role is that of the macro-economist. It provides the basic credit for the construction and makes annual subsidy payments which serve to keep rents low. The selection of sites, the design of the structures, the operation of the housing—all the attributes of spatial planning—are in the hands of local agencies called public housing authorities which are, generally, controlled by municipal governments.

There are now about 550,000 dwelling units of such public low-rent housing in the United States. It is not enough, and any massive attack on the roots of poverty in America will almost certainly call for more imagination, more experiment, and more depth in our public housing programme for low income families.

Another direct urban programme, related to housing but not confined to it, is urban renewal. This is spatial planning in its very essence. Much of the impetus for urban renewal came from the desire to clear slums and blighted areas in our cities; it has evolved, during the fifteen years of its existence, into a land use programme for the re-shaping of our urban centres.

The agencies which carry out urban renewal are either our city governments or public authorities created by our cities. The Federal Government pays two-thirds of the cost of the programme, the municipality, sometimes assisted by the state, pays the remaining one-third. Our redevelopment laws regard the acquisition of property which has become blighted as a public purpose, if it is established that the basis for the acquisition is to remove the blight. After the properties are acquired, the redevelopment agency razes the obsolete buildings which have occupied the land and secures its redevelopment in accordance with the land uses which its urban planning agencies have specified in a comprehensive development plan for the city.

The new uses can be housing if that is what the plan recommends. Or they can be commercial, industrial, or public; the criterion is the plan.

As of June 30, 1963, the urban renewal programme had provided for the acquisition by public agencies of 29,196 acres of land in cities of the United States. That is forty-seven square miles of city; more than the entire area of Calcutta, almost the entire area of my native city of Pittsburgh. One hundred and fifty seven thousand families have been relocated from this renewal land—92 per cent of them into housing of satisfactory standard.

Urban renewal projects are underway in forty-two of the fifty American states, as well as in the National Capital, Puerto Rico, and the Virgin Islands. More than 1,300 separate urban renewal projects have been initiated and some very large and spectacular ones have been virtually completed.

America has not been afraid to use public power and public funds to accomplish what might well be called urban land reform.

Its economic planning for housing has also selected certain other objectives of social interest. There is a special emphasis on housing for the elderly, and for relocation housing for families who must be moved to make way for public improvements. Housing cooperatives are given special assistance in obtaining credit. As the housing programme broadens into a general consideration of urban problems, such related needs as mass transportation and metropolitan planning are given various forms of Federal assistance.

It may be remembered that the Federal Government does not compel any of its states or cities to participate in the housing programmes, which it sponsors. Some cities do not want public housing and therefore do not get it. Three states have thus far refused (they are all in the Rocky Mountains and their cities are small) to enact legislation which would permit urban renewal to operate within their jurisdiction. The programmes are available; the initiative in using them, the planning decisions, the spatial allotments, the basic operation

is local. This makes for an unevenness in planning and achievement which might worry those with a fetish of uniformity, but it has the advantage of developing diverse approaches and widely distributed skills. And the city with conspicuously able leadership and technical knowledge has an opportunity to develop its own pace and serve as an example to the others.

I have discussed at some length about American economic planning for housing and its translation into spatial planning in the localities.

Economic planning in the United States also extends deeply into agriculture, and into such welfare programmes as social security, which includes old age pensions, unemployment compensation, and payments to widows with children.

Let us now go back to a generalization :

Economic planning in the United States is largely concerned with consumption. The nation's plant, its work force, its resources, its managerial capacity, and its farms too, have been able to produce at a rate which is generally greater than the nation's capacity to consume. So there has been no need in the United States to deal with scarcities, or by public investment to develop new productive capacity. Consequently, there is no restraint applied in our economy to the number of houses which we will build and occupy, or the number of automobiles which we will manufacture, sell, and drive. Our scarcities are more likely to arise in intangibles—the services which depend upon people, such as education or medical care. We are free, as we see it, to divert more than twenty-five per cent of our gross national product into our Federal, state, and local governments for the common services they render to us; we are free to encourage and stimulate demand for such a pre-eminent consumer product as homes.

In India, by contrast, the task of economic planning is to suppress consumption and to channel resources, capital, and technical and administrative skills into the production of capital goods—into the basic industries upon which a civilization dependent on science and technology can build its future.

This is the obligation of the under-developed country which seeks to attain development in terms of modern industry, and it is a very hard one. Rigorous logic would say there was no place in it for housing, no place for anything which did not have a proved contribution to make to industrialization and productivity. And rigorous governments have attempted to apply the full force of their discipline to this very point.

But no democratic government, one which depends upon the goodwill and support of the majority of its people, can afford so hard a line.

There must be concessions; there must be some limit to the price which the people of the present are asked to pay against the advantage which will come to their children or their children's children. There must be some sign of progress, some witness of hope.

The question then arises, what should it be?

I doubt that the answer can automatically be shelter-housing. But I think it can be, if a case is made for a share of the nation's resources being allocated to housing improvement (particularly as it does not call for the foreign exchange which is so precious to India); it would, and should, have to face fierce competition as to priorities.

For instance, is environment more important than shelter? Does the structure of a house, or the square feet it contains, matter less in India than water supply, sewers, and drainage?

Working in Calcutta Metropolitan Planning Organization, it seems obvious to us that a programme of environmental improvement can affect more people, more quickly, and in greater return for rupees spent than any pucca housing programme that can be brought into being in the immediate future.

Would an expanded programme of public health and medical care do more for the people of India than a housing programme? Or would the allocation of equal resources to schools, their equipment, and their teaching capacity be more beneficial and more welcomed than the result of equal energies devoted to expanding the housing supply?

Or a massive attack on malnutrition?

Or a great and effective campaign for family planning?

These represent hard choices, a difficult selection of planning objectives.

It is certain that India will some day have, soon or late, a housing programme of great size and great variety, adjusted to this country's needs and desires as America's programme has been shaped to its requirements and capabilities.

All Americans remember that the log cabin was once a typical American house, and that from a log cabin to the White House was once a typical American political slogan. A log cabin was in effect a hut—a one-room shelter built of hewn logs, their chinks stuffed with clay—and the Americans of our pioneer days lived and raised their families in such rude forest homes. And when the pioneers reached the great plains of the West, where there were no trees and therefore no log cabins, they build houses of *sod* and lived in them until they could afford lumber and brick brought from distant places.

In those days, America too was an underdeveloped country.

No one then imagined that science and technology would revolutionize its life as they have in our own day, supported by a stable social framework, an abundance of natural resources, and an established tradition of work programming and job organization.

I would like to say one final thing; it is trite and common place, but it is unalterably true.

The macro-economics of a country can be brilliant in their concepts. The techniques proposed for achievement can be subtle and original. The

policies can be sound and well-considered. The planning objectives can be broad, unselfish and humanitarian.

But none of these things is of consequence, none of them have more than theoretical importance, until they are translated into spatial accomplishment, until they take shape as land, as improvements upon land, as structures, as articles of use.

That is the hard, sweaty work.

And no programme whether it is urban renewal in an American city, the development of a new town in the United Kingdom, or the great attack upon India's housing problem which we all hope to someday see, will ever succeed until it is organized in detail on the construction site.

In our common endeavour, there is no substitute for materials in place and for men at work.

II

URBAN & RURAL SOCIOLOGY

Urban and Rural Sociology in Relation to Housing —Social Stratification, Values and Norms***

by

Dr. Bela Ganguli†

1. INTRODUCTION

1.1 Sociology is a study of social interaction, *i.e.*, man's interaction with other human beings as well as with the environment. Though all the social sciences study human behaviour, their focus of interest is hardly identical. This variation in emphasis differentiates one social science from another. To a sociologist, society is the embodiment of social relationship.

1.2 The fundamental assumption in sociology is that, the conduct of a person, his mode of behaviour and ways of thinking on one hand, and the nature of the social order—its structural function and values, on the other, are to be understood as the product of group interaction. So human life is an unending effort to adjust with needs and aspirations within the framework of a definite social structure which again varies from group to group and place to place.

2. URBAN & RURAL SOCIOLOGY

2.1 Within the broad framework of human society there are two distinct constellations presenting one of the broadest and most revealing of all social contrasts. The two polarized extremes are termed as the 'rural' and 'urban' dimensions of the society. From the social point of view, rural and urban societies present distinct social relationship, family structure, outlook of life, customs, convention and values of life, settlement pattern, occupational pursuits and so on. The analytical study of the urban social environment and living is the subject matter of urban sociology. In the same way the subject matter of rural sociology is the rural environment. On the whole the difference between the two is not one of content of analysis but rather one of method and approach. The contents in both the cases are not something external, tangible things or kinds of things that can be identified directly by the senses. We cannot see or touch social relations or social organisations. They can neither be isolated nor subjected to laboratory experiment.

3. CENSUS CLASSIFICATION

3.1 This urban-rural dichotomy has been further substantiated in the statistical analysis of spatial hierarchy. Every country in their Census operations have laid down certain characteristics mainly based on the size of the population, density and type of occupation, to differentiate urban and rural areas in concrete terms. Officially the definitions of urban and rural vary from country to country and sometimes even within the same country. This quantitative basis for differentiating city from farm communities seems reasonably sound when examined in the light of specialised urban and rural occupations. Thus a city may be characterised

in part as a community having so high a density of population that it cannot support itself by farming. Most of its residents must have occupations other than farming.

3.2 The size of population aids indirectly in differentiating urban from rural areas, in that it influences the character of social relations among members of the community. When the population become large and most of the people are not individually known to each other, an impersonal social milieu tends to arise. An arbitrary dividing line as 2,500 as adopted by the Bureau of Census U.S.A.—or 5,000 as shown by Census of India may have value as marking the lower limit at which urban type of relationship ordinarily becomes significant.

4. OTHER POPULATION CHARACTERISTICS

4.1 The qualities of population other than density and size, *i.e.*, mobility, permanence, and heterogeneity may be mentioned as of possible value in characterising urban areas, though none of them alone seems very useful. The typical characteristics may be summed up as follows:—

- (i) Urban population is more mobile than rural population.
- (ii) A city affords permanence of residence notwithstanding the individual movement of its people.
- (iii) The city houses a heterogeneous population of both sexes, various ages and possibly of diverse ethnic groups and socio-economic classes. Typically an urban population is sufficiently heterogeneous as to age and sex. Socially, it is heterogeneous enough to support locally all of the major types of institutions necessary for the satisfaction of basic wants—family, school, church, government, industry, etc.

4.2 The size, density and mobility of urban population greatly influence the characteristics of social relation among their inhabitants although urban and rural communities have in common many basic features or the constituents of social life, especially family and friendship groups. Comparison of two communities near opposite ends of the urban-rural continuum reveals fundamental differences in types of social relations.

4.3 The characteristics of urban-rural social relations:

- (a) Urban social relationship is mainly impersonal, external and formal while rural cultures exhibits social characteristics

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which are strongly familial or primary in character, with emphasis on family and informal groups rather than upon the more temporary contractual and formal associations.

- (b) The number and variety of people encountered in the city, the extreme specialisation of their various occupations, and the diversity of social groups in which they participate, make the social world of the city exceedingly complex, in contrast with the simplicity of the farm community. The primary nature of rural life along with the physical and occupational factors which also condition people, means that the frame of reference and the value of orientation of rural people are different from those of city dwellers.

These frames of reference are more geared to land, to living things, to the ties of kinship, family and work and perhaps to sacred patterns and beliefs. Rural culture seems to place more emphasis upon customs, traditions, family and neighbourhood, and local ties than does urban culture. But there is a great danger, as Dr. Sylvia Fava of Brooklyn College has pointed out, in assuming that rural and urban cultures are two completely different types of culture, characterised by two different types of association—one primary and the other secondary. Actually there are primary and secondary qualities in every culture. The thesis that the growth of cities inevitably and universally resulted in the decline of primary groups is almost taken for granted, but it is not well documented by good research.

4.4 The Housers have pointed out that major rural-urban differentials, especially the measurable ones are decreasing and there is a trend towards a merging of the characteristics of two great cultures—rural and urban. Since in this merger process, urban trials, values, and interests appear to dominate the rural, the term urbanisation is sometimes used to denote much more than simple population concentration. It denotes a process of urban culture dominance in the making.

5. SOCIAL STRATIFICATION

5.1 Social stratification is another very important factor which goes a long way in determining the nature of group relationship in a society. Stratification is a very general term and refers to a hierarchy of inequality. Traditionally the term has been applied mostly to social rather than to other types of social systems. The basis of status varies greatly from society to society and from one historical period to another within the same society. When status is fixed by birth, as in the traditional Indian caste system, or in feudal society, the class structure tends to be compact or "integrated" and rigidly stratified at the same time. So long as birth defined status, vertical social mobility became impossible for all.

5.2 As status came to be defined more and more in terms of the new forms of mobile wealth and as birth and tradition lost their hold as criteria of prestige and power, an open-class structure evolved. Although there is disagreement among analysts as to the precise basis of inequality in the stratification sense, it involves "economic" prestige, and power differences or some combination of them. Dis-

agreement centres round such question as to which one of these dimensions, is central and which derivative, what precisely is the relationship among them and to what extent stratification is uni-dimensional or multi-dimensional.

5.3 'Economic' dimension of stratification refers to the unequal distribution of the material products and productive labour services of a social system. Economic inequality tends to foster significant differences among categories of people differentially positioned in an economic hierarchy. Social and cultural experiences and participation are directly affected, leading ultimately to differences in attitudes and values. Similarly, in case of prestige hierarchy people belonging to similar position share a common style of life. Rank differences are frequently expressed in dress, manners, speech, consumption pattern, use of leisure, and the like.

5.4 All these dimensions of stratification though analytically distinct are empirically inter-related. For example, maintenance of a style of life, characteristic of a position of high prestige, usually demands high income and wealth. So normally when the dimensions of stratification coalesce, *i.e.*, high position on one is reinforced by high position on the other, the situation is called "status consistency". But there are ample instances of "status inconsistency" which do have significant social and psychological consequences.

5.5. Values and Norms

In natural sciences there are only problems of fact but social institutions, being in part at least man-made confront the scientist with two quite different questions—

- (a) What is the character of social institutions, in fact?
- (b) How ought social institutions to be?

The first is factual and the second is normative. Thus social science is confronted with problems of fact and with problems of values or norms. The question arises at this point, *viz.*, how are these sociological concepts related to the problems of housing, and how are these taken care of in formulating housing policies.

6. HOUSING AND PERSPECTIVE

6.1 The deterioration of living conditions, multiplication of social evils, as well as the failure of the common people to cope with the situation during the last century pressed the urgency of co-operative effort, and housing emerged as a major problem and public issue. In its most general sense housing means shelter, or the means of providing shelter. Of late, it came to signify the particular problem of providing an adequate supply of dwellings for human habitation at suitable price levels and of a quality to meet acceptable standards.

6.2 Heavy exodus of population in urban areas in the wake of Industrial Revolution, created acute shortage of housing facilities ultimately leading to numerous social evils and growth of slums and blights. The pace of economic development had brought in dingy overcrowded tenement houses of the industrial towns—unhealthy, dirty, and abominably ugly. Despite vast differences in background, development, wealth

and climate, there appears to be a remarkable similarity of the incidence of housing problem of the lower and middle income groups, all over the world. It was evident that the problems of housing of the lower economic groups could not be adequately met by private construction and municipal ordinances. The housing movement became international in scope, attacking common problems and working towards more or less common goals. There has always been bad housing but the acute awareness of it, as well as the effort to do away with it, are modern phenomena. As a result, there had been considerable housing activity in most of the countries all over the world. Nearly every country has had some form of subsidized housing, some form of housing by public authorities, while slum clearance, though much talked about, has been practised very little.

6.3 The implicit purpose of all housing activity is to promote the general welfare, whether in terms of physical health, social and civic efficiency, protection of family and on the whole fulfilment of such social deals as 'equal opportunity' and 'equal rights'. These are very general goals which must be translated into sites and buildings of the most specific, tangible and permanent nature.

6.4 There were conscious efforts on the part of the public authority to encourage the production of housing of sound standards, of design, construction, livability and size for adequate family life; and also the development of well-planned, integrated residential neighbourhoods, the development and redevelopment of communities. But the question remained—how to decide what kind of housing promotes adequate family life, or the exact nature of an integrated neighbourhood, or what makes a real community and how to translate it into three dimensional terms? The problem becomes all the more complicated because the consumer is hardly of any importance in determining public policy.

6.5 On the whole it shows that every aspect of housing comes down sooner or later to qualitative social decisions "value judgment"—about individual needs and preferences, family and community functions, and group relations. Such judgments are definitely difficult to make in a modern urban society which is varied, and is constantly changing. To measure "demand" in traditional economic sense is something different from measuring 'need' in concrete qualitative terms.

6.6 To understand "needs" means to know more about people's behaviour welfare and attitudes under different external conditions. Even when "needs" objectively determined may or may not be the same as what people "want". However, the characteristic of families, viz., size, composition, educational attainment and occupational and income levels of the head of the families are easily understood and are generally measurable in definite terms. Each characteristic has a direct or indirect influence on the housing needs of the particular family.

6.7 There is another characteristic, equally important but much more difficult to describe and at the moment almost impossible to measure. This is the family's personal value orientation. Personal values are defined in one of the studies as "the totality of a number of factors, such as an individual's ideals, motives, attitudes, and tastes which are determined by his cultural background, education, habits and experience". A value differs from a preference in as much as a preference is generally based on an individual's range of experience and may not be justified on the basis of any commonly accepted standard or moral judgment. A value also differs from an attitude, in as much as an attitude only refers to what is desired whereas a value is, what is desirable. Both preferences and attitudes are likely to change more frequently than values. Values tend to be more enduring and more permanent.

6.8 Thus it looks as if no formula for a house can perhaps meet all such varied requirements. Families differ from each other in what they can afford and where they can live. Even the individual families are also constantly changing and with those changes there develop different housing requirements. Of course, there are certain basic standard requirements, fulfilment of which makes the house livable. The degree of livability that a house design provides depends upon how well the architectural feature of the house meet the needs of those who carry on activities within it. There cannot be any doubt as to the significance of housing in building up human resources. Housing touches every individual at all periods of his life span. Despite man's adaptability, housing is a determining factor in developing his attitudes and his way of life. But much of what is being done today is based on intuition or our subjective evaluation of what we think than desire.

Land Policy in Urban Areas*

by

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1. INTRODUCTION

1.1 The two concepts that land is the 'complex of natural opportunities offered to labour and capital' and that the land is a 'factor of production' hold good in a general way. But they do not hold good so far as urban land is concerned. The enrichment of land by 'treatment' has evolved the necessity of protecting the land by group action. In the rural set-up 'market orientation' and 'Physical scarcity' are conspicuous by their absence. Whereas these factors are more prominent in the case of urban area and make the characteristic of urban land more vulnerable to various changes in economic and social variables. This brings out the importance of 'space' and 'site' so far as urban areas are concerned and does not affect the price and the uses to which the land can be put. Thus the environmental control is of less consequence in urban areas, though it plays a dominant role in urban areas. It is thus evident that there are some basic points of differences which govern the various aspects of rural and urban land. Thus, while the question of land tenure is of primary importance in rural areas, the optimum pattern of land utilisation is of paramount importance in the city communities. Mode of occupancy is perhaps secondary to pattern of utilisation within the city and hence the need for an urban

land policy where sectors of emphasis are different from those of the rural areas.

1.2 The population increase³ and the role of urbanisation are posing problems, such as formulating a well-considered urban land policy to accommodate the ever-increasing number of population in the city fold without deterioration of the basic civic amenities. It is estimated that about 560 million population in Asia (26.1% of the total) would live in cities (20,000 or more persons) by 1975, compared to 13% in 1950. In India urban population of the cities is expected to be 100 million in 1975 against 43 million in 1951⁴. Another estimate puts the urban population at 120.2 million (1971) and 160.9 million (1981) for India⁵ for all types of towns. In terms of need, for these growing urban communities about 120 million houses (costing Rs. 10,000 only) would be required costing Rs. 1,200,000 million, for Asia as a whole by 1975. India's needs for housing of the same category would stand at 12 million houses, costing about Rs. 12,000 million⁶. By the end of fourth Plan period (1971) in ten metropolitan cities of the country, the population is estimated to be 31.2 million (7.75 million families) with a deficit of 3.29 million houses (161.1% to number of houses in 1951)⁷, which would need about Rs. 32,932 million for housing only.

Year	World		Asia		India	
	Million	Rise in %	Million	Rise in %	Million	Rise in %
1950	2497	..	1380	..	361.3(1951)	..
1975	3828	153.3	2210	160.1	525.0(1971)	145.3
2000	6267	250.9	3570	280.4	650.0(1981)	179.9

1. Goiger, G. R. "The Theory of the Land Question" (New York. The Macmillan Company 1936, pp. 17).
2. Monophology, Climate and Edaphic.
3. The future growth of world population, Pages 23-24 (Population Studies No. 28, 1956) U. N. Publication. For India, Dr. S. Chandrasekhar's calculations—Statesman, 4 June 1962.
4. Dr. C. M. Palvia—"International action for housing and its relation to world regional population growth".
5. Sayed S. Shafi—Location of Industries in Metropolitan Regions—Jour. Institute of Town Planners, India No. 15, July 1958.
6. *Ibid*—Foot note No. 4, pp. 9.
7. Sayed S. Shafi—An Estimate of the Relative Housing Deficit for Selected Cities in India. Jour. Institute of Town Planners, India No. 21 & 22 Jan.-April 1960 (Greater Calcutta, Greater Bombay, Delhi, Madras, Hyderabad, Ahmedabad, Mangalore, Kanpur, Patna and Lucknow), pp. 107.

The housing deficit (% of deficit to number of houses in 1951) will increase from 76.3% in 1956 to 161.1% in 1971. Over and above, the cost for land is also there, which when taken into account becomes a huge amount to be met by the community.⁸

1.3 All these bring the problem to the forefront and urge for a balanced urban land policy to be followed in the country. The broad approach rather 'regional' than 'metropolitan area' or 'individual cities' is to be followed in land policy. There is growing recognition of the fact that, the treatment of metropolitan or other urban communities cannot be in isolation of the region, as they are identified as a composite whole with the economic activities of the region. In formulating policies, an assessment of the degree of urbanization at national and then at regional level are the prerequisites.

1.4 The formulation of urban land policy, fixing priority of action, land acquisition and compensation, financing the policy and mechanics of implementation are some of the features which have been discussed on very broad lines in the following paragraphs. Urban land policies which have been discussed with Indian examples, do not vary much in principle elsewhere in the world.

2. URBAN LAND POLICY

2.1 In uncontrolled urban land the policy of 'whatever finally paid most or best should have the land and the economic right of way' and it leads to the inevitable, unregulated and unplanned growth of the city structure.⁹ Out of the physical scarcity of urban land 'the principle of first choice' be developed for specific uses and hence the need for planning, zoning and social control over land uses. Conflicts do arise because the individual viewpoint is 'market oriented' and not community-wide and it is not sufficiently long-term¹¹. The desire for quick profit of the land developers and builders runs counter to the social good as it is more or less a long-term treatment.

2.2 Land policy should aim to guide the 'use', curb the 'misuse', prevent the 'abuse', regulate the 'non-use' or 'dis-use' and the 'reuse' of land. Apart from all these, the land policy may seek to comply with one or more of the following objectives in the best interest of the community as a whole.

- (i) Control of urban land speculation or excessive land prices by issue of notification.
- (ii) To provide housing for the homeless, essential workers in industry, migrants, squatters, low and middle income groups and government employees.

- (iii) Remove slums, blight, insanitation threatening health, welfare or safety.
- (iv) Redevelop land for more desirable uses, including re-parcelling of fragmented holdings.
- (v) Rebuilding devastated areas.
- (vi) Effect a more equitable distribution of land tenure and discourage concentration of ownership.
- (vii) Encourage and promote the development of undeveloped or under-developed land.
- (viii) Decentralize cities or build new towns to effect more rational distribution of the population and industries.
- (ix) Improve beauty and amenity of cities and neighbourhoods.
- (x) Encourage industrial settlement in industrially depressed areas or where settlement is deemed beneficial in the public interest.
- (xi) Integrate land into more rational plans, prevent undesirable suburban sprawl or absorption of agricultural land which should be preserved.
- (xii) Stabilise units so as to prevent hardship or inflation.
- (xiii) Break down jurisdictional barriers obstructing rational development.
- (xiv) Improve and encourage family life; provide houses for the aging and elderly, working mothers, single persons and other special groups.
- (xv) Stabilize tenure, real estate and mortgage values, encourage formation or expansion of lending institutions.
- (xvi) Ensure that sites or improvements can be made available at prices people can afford or at which builders can develop.
- (xvii) Encourage employment through land development or home building.
- (xviii) Free land from unmarketable titles or restrictions preventing development.
- (xix) Stimulate or encourage co-operative, private, self-help, or public enterprises towards greater production.
- (xx) Preserve increment in value for the community and improve public revenues through proper land development.

8. Extra land requirement for urban dwelling (1961)—1971.

Rise in urban population (1971)=120.2 million minus 78.3 million=41.9 million, say 42 million.

Assuming a density of 100 (at the maximum for a planned town) the land requirement for residential purposes only would be 420,000 acres. Cost (assuming Rs. 10,000 per acre) the total sum needed for land only 420,000 × Rs. 10,000= Rs. 420,000,000 (Rs. 420 crores) over and above further land will be required (almost equivalent amount) for other uses.

9. F. S. Lovejoy : 'Concept of Contours in Land Utilisation' Journal of Forestry, April 1933, pp. 383.

10. 'Insensate industrial town' and 'myalopolis'—Lewis Mumford. "The Culture of Cities" (New York, Harcourt, 1938) Chaps. III & IV.

11. Fisher, Earnest M. "Advanced Principles of Real Estate Practice, New York." The Macmillan Company 1930, pp. 307-8.

- (xxi) Abolish private ownership of real estate and place all land in public ownership to carry out national policies, if possible.
- (xxii) Provide housing accommodation for war or defence workers or for other military reasons.¹²

2.3 To exercise controls is a policy rather than power and less a moral than a practical question. These may be achieved by confiscation or forfeiture of land (as it happens in socialistic countries), regulation of price¹³, building regulations, zoning, subdivision controls, acquisition or control of development rights, taxation, use of public subsidies with eminent domain, control through expropriation of extra land (excess co-ordination), public land acquisition in advance of industrial or residential settlement, approval by planning agencies of the new structures, re-parcelling of plots and setting up new townships, etc.

2.4 Under this overall policy, the policy of exercising control over the land use seems paramount which can be materialised by :

- (i) Control of subdividing and subdivision design.
- (ii) Restriction on nature of land use in conformity with a general land-use plan for the community.
- (iii) Limitations on the exterior dimensions of structures in relation to land area and dimensions, building heights, placement on the lot, and extent of land coverage.
- (iv) Establishment of minimum structure standards of strength, fire resistance, light, ventilation and sanitary facilities.
- (v) Restrictions on occupancy in terms of persons or families.

3. POLICY FOR LAND UTILISATION

3.1 By the continued adoption of business decisions in land use, urban organism becomes more complex. The social and technical change induces factors for the need of a master land-use design. It must be an expression of underlying social and economic forces over which the community have little control.¹⁴ As the present land use is not a matter of accident and as the cities have developed as an integral part of the national productive and production machinery, it is quite inevitable that artificially induced changes will meet with strong resistance, and more minor changes of great social significance be first aimed at. Natural (unregulated) growth may be curbed for the social needs.

3.2 While we do realise the fact that a very rigid 'model landuse' is unwise for all types of towns, we do certainly feel that a stage has come when

standard models of 'land-use' may be framed or designed for different 'types'¹⁵ of towns. Obviously, while they may be applied to the 'new communities', they may be taken as goals in case of the existing communities and necessary modification or change in land-use, befitting with the standards laid, be aimed at. These models must be in harmony with the population of the townships and before such things are put to action, optimum 'city sizes' have got to be determined in case of individual communities.

4. POLICY FOR PREPARATION OF MASTER PLANS

4.1 Should the master plans be prepared for the individual urban communities and metropolitan regions as such or broader perspective be taken of the entire problem in terms of region or country as a whole is a debatable question by itself. To us it sounds logical that as a first step the country need be divided into regions and the degree of urbanisation has got to be assessed at a regional level with a full view of the country as a whole. The size and character of the existing townships be determined as per the regional optimum requirements, so that the rural-urban balance which is the root of all urban problems may not get upset. New townships, if desired, may be set up as per the master plan for the entire region. Within the broad framework of the regional plan, master plans for the particular urban communities or metropolitan areas be designed. This is mainly because as per the existing set up, jurisdiction of the implementing authorities cease to exist beyond the city limit and uncontrolled developments may spring up which can only be avoided under the regional master plan.¹⁶

4.2 The principle of preparation of master plan at regional level (not on the basis of individual townships) is all the more important because an around development of the country cannot ignore the interests of the rural community. The present industrialisation and abolition of the zamindari system have brought in economic misery of the rural community which accounts for about 80% of the country's population. For economic salvation of the rural population, the master plan should follow in policy the dispersal of new industries and townships to appropriate points to extend the benefits of employment and higher levels of income to the rural populace to strike a balance of urban-rural development.

5. PRIORITY OF ACTION

5.1 Enumeration of goals and achieving them, (which are important factors by themselves) and fixing the priority for 'follow-up' the nonetheless very salient clues of success. The dimensions of the urban land problem are no doubt vast, yet the angles of attack to slow them are definitely tricky. So long, as the continuous influx of rural population to the city-fold remains unabated, so

12. Policies—Housing & town and country planning bulletin 7 United Nations, New York, pp. 34-35.

13. (i) Control of the resale price of land as of a given date.

(ii) Control of sales price on publicly aided housing.

(iii) Control of rents on new buildings.

14. Doran, H. Band A.G. Hinnen—"Urban Land Economics" (N. Y. Macmillan Co., pp. 251).

15. Types : Industrial, commercial, nodal, administrative, health, complex towns, etc.

16. "In redeveloping existing cities and building up new towns, it is of the utmost importance that the regional approach should be followed". Third Five Year Plan—pp. 692.

long as the uncontrolled horizontal-cum-vertical expansion of the city communities continues, and so long as the factors of production (industries) continue to follow the 'geographical inertia', attempts for a planned urban community will remain an 'El-Dorado'. Persistence of obsolete or cumbersome urban boundaries fixed before population and transportation bursts the existing limits, which is a fact that cannot be denied. The general tendency towards a more intensive use of inlying land, characterised by denser development also continues to exist.

5.2 As a first antidote, powers of 'development and control'¹⁷ be clamped down almost immediately to arrest further deterioration in the civic life. The disease of the city structure need be diagnosed by expert knowledge available'. The failure to develop the 'inlying' areas on account of exorbitant cost factors which drives the middle class families out of the city core and increases the blight in favour of low and high income group of people.

5.3 The use of peripheral land for residential and other purposes by providing efficient modes of transfer be aimed at by implementing 'powers of land acquisition', together with land use controls¹⁸, clearance of slums¹⁹, by eradicating the basic factors of slum development²⁰ and launching remedial measures²¹ for slum clearance.

5.4 The third and last stage of 'operation land development' should be redeveloping the city core, when the land values are considerably depreciated

by the first two measures and the 'power of levy betterment' and other miscellaneous controls.²²

5.5 This priority of action is only appropriate in case of 'matured communities' whereas in 'young' growing communities the need for the third and last stage of action is redundant. In the 'infant communities' which are and will be developed in the virgin soils, by implementing only the initial action of exercising powers of 'development control' the situation can be tackled.

6. POLICY OF LAND ACQUISITION AND COMPENSATION

6.1 The policy of land acquisition.—The concept of institution of 'Property' is dynamic with the changing needs of the society. The feudal tenure has crumpled after the Zamindari system was abolished and the exclusive right to control and 'economic good'²³ in the real property has been reduced as the concept of social obligation has expanded. In a socialistic pattern of society, to which we are pledged, it is an accepted fact, that ownership of land is exclusive but not absolute. The law does not allow a private owner unlimited and unlicensed use of his property. For public purpose and general welfare, land acquisition is possible by 'eminent domain'. With this philosophy, the legal tool, the 'Land Acquisition Act 1894' was promulgated by the Government for compulsory acquisition of land, positive encouragement, regulation and direct operations. We do subscribe to the view that the in-ordinate delay between notice issued under Sections 4 and 6 can be avoided to much relief of the property owners, by fixing some time limit for acquisition.²⁴

17. (a) Zoning plans.

(b) Architectural controls in special areas.

(c) Frame control.

(d) Building by-laws and

(e) Standard details.

S. N. Lamba : 'Zoning and other tools for the development of a new city' (Chandigarh). Journal of the Institute of Town Planners, India No. 21 and 22, Jan.-April 1960, pp. 134.

18. (a) Use zoning. (b) Density zoning. (c) Periphery Control. *Ibid.* see Foot Note No. 16.

19. "...any predominantly residential area, where the dwellings which by reason of dilapidation, over-crowding, faulty arrangement of design, lack of ventilation, light or sanitary facilities or any combination of these factors, are detrimental to safety, health or morals". The U.S.A. Housing Act of 1949.

"...chaotically occupied, unsystematically developed and generally neglected area which is over-populated by persons and over-crowded with ill-repaired and neglected structures. The area has insufficient communications, indifferent sanitary arrangements and inadequate amenities, necessary for the maintenance of physical and social health and the minimum needs and comforts of human beings and the community.... social environment.

The definition of Seminar on Slum Clearance, held in Bombay, in May 1957. ... Report of the Selected Building Projects Team on Slum Clearance. Committee on Plan Projects, New Delhi. April 1958, pp. 11.

20. (1) Phenomenal increase in population in towns.

(2) Unplanned development in the past, defective bldg. bye-laws, absence of master plans and consequent paucity of developed land.

(3) Non-enforcement of building rules and regulations.

(4) Rent control.

(5) Toleration of slums in a patronising & philanthropic manner. *Ibid.*, Foot Note. No. 18, pp. 14.

21. (i) Dispersal of population and industry, (ii) limiting further expansion of industries in big cities, (iii) establishment of new industrial estates, (iv) establishment of satellite towns, (v) establishment of dormitory towns, (vi) carrying industry to the villages (carry industry to the people than carry people to the industries), *Ibid.* Foot Note No. 18 pp. 15-17.

22. (i) Free preservation aide.

(ii) Advertisement Control Order. *Ibid.* Foot Note No. 16, pp. 134.

23. Ely. R. T.—Property and Contract in their relation to distribution of Wealth (New York, The Macmillan Company 1914), Vol. 1, pp. 101-102.

24. Land Acquisition & Compensation—Journal of Institute of Town Planners—India No. 24. Oct., p. 1.

6.2 Why Land Acquisition is Needed—The urban land with all its physical characteristics²⁵ throws a great weight in the process of its utilisation. The 'hundred per cent location'²⁶ brings in highest land values and rents and concentric pattern of city growth is disturbed on the lines of 'ease of contact with relatively little friction'²⁷

As a consequence tumour-growth of the city organism occurs which needs surgical operation by the city-fathers or other developmental agencies for treatment of the blighted portions of the city by 'redevelopment', which requires land acquisition of the city for the establishment of dormitory satellite township, linking the parent city with efficient modes of transportation. This is common with the 'matured' cities, with or without little scope for expansion. Hence land acquisition in such cities is for the reduction of social costs of blight and to increase efficiency of the urban structure, to reduce the frictions of transportation and communication and to make the community a desirable place for living.

6.3 The 'Young' city-communities pose a somewhat different problem as they are not only growing in nature but also, more often there are scopes for further 'spread' in the city-fringe. They appear to have a time-lag between core-decadance and the cessation of further spreading. Hence land acquisition in the city periphery is the need which is a obviously less valued and readily available commodity compared to the city cores of the matured communities.

6.4 The infant city-communities pose completely different problems altogether as quite often; their births are associated with the policy decisions of the Government like disposal of industries, balanced regional growth or shifting of administration centres, etc. Cities develop in virgin soils and they land in young stage within a short-span of time compared to the other two types, pointed out earlier. Since such communities are to grow, almost overnight (compared to a normal city life), the entire space for the city has got to be acquired. On such an even government-owned lands if available should contribute the bulk of the total requirement, only to keep the overhead cost of city construction at a low pitch.

6.5 The Policy of Compensation.

6.5.1 In a totalitarian or a socialistic set up, as private ownership freezes, the question of compensation does not arise. But in democracy since the ownership of land is widely distributed and the

rights are guaranteed by law with defined jurisdictions of government power among the legislature, the executive and the judiciary, the position is different and difficult; compensation is the rule rather than exception. The most perplexing question is to decide whether or not the compensation is to be paid. The N.P.C. states "the line of demarcation between these two is so hazy, uneven and overlapping, that many a time it is difficult for the community to effectively face an unscrupulous speculator"²⁸.

Different formulae adopted from time to time :

- (i) Market value +15% solatium=compensation.
- (ii) Market value on the date of issue of notice under Section 4.
- (iii) Present utilisation value without any solatium.

While in policy, the verdict of the state legislature as per article No. 10(1)(f) and (5) and 31(1)(2) & (2A)²⁹ as regards fixing the quantum of compensation, is final, we would like to evolve a formula which may be given due consideration. Potential urban land value being equivalent to market value and since land value is appreciated by the combined action of the community as a whole, the 'unearned increment' may be expropriated.

6.5.2 The proposed formula aims at fixing the land value at the lowest base of the rising market price. The corresponding date for the lowest base should be the material date for assessment of land value. The rise in land value between this material date and the date of publication under Section 4 of Land Acquisition Act should be expropriated because community action has become the contributing factor for the rising market price. Hence the recommended formula is "either the market value on the date of publication of the scheme" or the "value at the material date plus an interest of 5% for the period between the material date and the date of publication" whichever is less. The payment of interest amount is suggested as compensation for the period of 'waiting' instead of 'sacrifice' in the words of Marshall³⁰ (in fact the owner could have earned the interest amount by way of fixed deposit in the bank if the compensation could be available on the material date).

Another suggestion for fixing the land value is the value on the material date +20-25% of the rise in land value between the material date and the date of publication.

25. Space and Shape, immobility, indestructibility & heterogeneity of building lots.

26. Mark Levy "One Hundred Percent Location"—Journal of Real Estate Management, Feb. 1938, pp. 291-99.

27. Robert Murry Haig—*Towards an understanding of Metropolis. The Assignment of Activities to Areas in Urban Regions"—Quarterly Journal of Economics, May 1926, pp. 421-23.

28. National Housing. National Planning Commission (India : Bombay : Vora & Co.), Feb. 1946, pp. 65.

29. Summary : All citizens have the right to acquire, hold and dispose of property subject to reasonable restrictions in the interest of general public, and no person shall be deprived of his property save by the authority of law provided that there is no bar to his property being compulsorily acquired or requisitioned for a public purpose on payment of compensation whose amount (or the principle of determining which) will be laid down by law.

30. Journal of Institute of Town Planners, No. 21 & 22, June-April 1960.

Gupta, S. K.—Development plan and their legal tools, pp. 128.

A theoretical case may be illustrated :—

Year	1945	1950	1955	1960
	Rs.	Rs.	Rs.	Rs.
Land value	10	25	30	40 (per acre)
Rise in value	..	15	20	30

Here the lowest base of rising market price is Rs. 10 in 1945 so the material date is fixed as 1945.

$$\text{Compensation (1) Rs. } 10 + \left(\frac{5}{100} \times \text{Rs. } 10 \times 15 \right) \\ = \text{Rs. } 10 + \text{Rs. } 7.5 = \text{Rs. } 17.50$$

$$(2) \text{ Rs. } 10 + \frac{20}{100} (\text{Rs. } 40 - \text{Rs. } 10) \\ = \text{Rs. } 10 + \text{Rs. } 6 = \text{Rs. } 16$$

$$(3) \text{ Market value on the date of publication} = \text{Rs. } 40.00$$

Hence the lowest rate is indicated in item (2).

Therefore the compensation should be fixed at Rs. 16.

6.5.3 Recoupment cost can be met from levy of development charge³¹ on unacquired properties and from sale proceeds of surplus land at enhanced value. This double benefit would provide finance for furthering the cause of acquisition.

7. FINANCIAL POLICY

7.1 While the financial aspect does not come under the strict purview of the paper, this aspect will be very broadly dealt with as it is the key to land policy. Finance is essential firstly for land acquisition as a part expenditure of compensation and secondly for the operation side of the construction activities after the land is made available. It is broadly proposed that about Rs. 202 crores will be the expenditure on urban housing activities under various third plan housing schemes while the total constructional activities in the country would amount to Rs. 1125 crores.³² As per some

calculations³³ it has been estimated that by 1978 A.D. new urban population (in cities of 20,000 or more) of 560 million in Asia would require Rs. 1,200,000 million for houses of modest size. In India total urban population will be 100 million, showing an increase of 57 million people, which will require 12 million houses costing about Rs. 120,000 million during the period under review. From this the magnitude of the problem can easily be fathomed.

7.2 Since only 10-20% of the resources can be mustered from the internal resources, extension of external financial aid is a 'must', and the most effective method of inducing land development and controlling its use. Absence of effective financing mechanism³⁴ throttles the land development. Because of the rise in shelter cost, the increased dependency upon mortgage financing and the dearth of private funds, there should be a universal increase in government participation. Capital investment by public funds in Housing vary from 25-100% (or nearly so) in some European countries³⁵ and 100% in others. It facilitates in the sense that private operations were usually smaller and reliance had to be placed mainly on negative controls and restrictions—controls of location and standards by conditioning of loans upon proper plans; easier and non-flexible financial terms enables the heretofore neglected groups; and attraction of private funds with government insurance; junior financing or subsidisation are some of the benefits of Government participation in land development.

7.3 In India due to speculation, rise in land values have increased by 400 per cent since 1939 and 'raw land' including improvement cost is about 20 per cent of the total cost for single storey dwellings in the city outskirts whereas for multi-storey dwellings in better urban residential areas (city of Bombay) it is 22.2%³⁶. But since then, the land prices and the cost of materials have gone up many folds but the ratio of expenditure on the land cost and development cost might not have undergone a drastic change. Since these account for about 1/5th of the total building cost, the importance of following a judicious land policy is warranted.

31. The Calcutta Improvement Act lays down that betterment fee should be at the rate of half the increment in value due to the improvement and the Howrah Improvement Act limits it to one-third, but in each case the value is to be calculated on the footing that land is vacant.

32. Third Five Year Plan.

33. *Ibid.* See Foot Note 4, pp. 9.

34. (i) The stillbirth or collapse of private financing mechanism in most parts of the world.

(ii) The high and rising cost of developments in relation to workers' income, rendering it impossible to set up a workable formulae embracing reasonable down payments and interest rates and affording reasonable security to the lenders.

(iii) The inherent poverty of many countries and their inability to finance the material, labour and land costs essential for house building.

35. Methods and techniques of Financing House in Europe, United Nations Economic Commission for Europe (Switzerland, Geneva, U.N.) March, 1952, pp. 26 and also Domestic Financing of Economic Development. U.N. 1950.

36. Single storey dwellings :

Raw land 27.87 sq. m. (300 sq. ft.)	Rs. 250.00
Cost of improving land	Rs. 250.00
Building	Rs. 2,000.00

Rs. 2,500.00

Multi-storey dwellings :

Raw land	Rs. 500.00
Cost of improving land	Rs. 500.00
Building	Rs. 3,500.00

Rs. 4,500.00

Ibid. Foot Note. No. 33, pp. 78

(converted into rupees)

7.4 Whatever may be the cost factor of land acquisition and development, it sounds quite logical that such schemes cannot run entirely on subsidy but effective steps be taken to reduce it to the optimum. As a prerequisite, freezing land prices is essential to keep the land values low.

- (i) Allotment of land to be on lease basis so that a fair share of the value of land continues to accrue to the community.
- (ii) Betterment levies.
- (iii) Taxation on agricultural lands put to non-agricultural uses.
- (iv) Capital tax on free-hold lands.
- (v) Taxation on vacant plots in developed areas.
- (vi) Terminal tax.
- (vii) Share of the annual consolidated rates of the municipalities.

7.5 The development value³⁷ is to be secured for the community by taxation. However, the pattern of taxation is to be different from city core to the urban fringe since the cost of development varies from the core to the periphery for obvious reasons. The following policy is endorsed for taxation :

City core (built up areas)	=	Development charge.
Urban area	=	Development charge + Development cost.

Beyond city fringe (Urbanisable area)	=	Development charge + Development cost + Conversion fees, etc.
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7.6 As a policy, after the areas are developed for occupation, sectors demarcated for high-income groups, while lower ceiling will be fixed per unit of land, may be allotted to the maximum bidder in public auction. The surplus money may go a long way in compensating the cost of development and subsequent subsidy for the lower and middle income group of tenements respectively. Thus, fair share of the land development money will be met and the deficit is to be financed by the Government.

8. THE MECHANICS OF IMPLEMENTATION

8.1 If the town planning is not to be a mere theoretical discourse in speculative thinking or the formulation of a number of abstract norms, the mechanics for translating them into action is perhaps as important as the first. In a democratic set-up like that of ours, the power of 'eminent domain' is not concentrated in a single authority but is being shared by the executive, the legislature and the judiciary and any new set-up may perhaps meet severe opposition.

8.2. However, planning and development activities have grown so gigantic in proportion in our country that the present machinery appears to be inadequate and 'misfit' and may perhaps need a complete overhaul to ward off obsolescence. In principle while active participation of the public and existing local bodies³⁸ is a much desirable feature, the ultimate control be vested with the government or autonomous bodies, working in close collaboration with the government.

8.3 As elsewhere, it has been envisaged that the country need be divided into different planning regions³⁹ and the norms of development be laid down by the central body for each region; there should be a central body for such activities at central level to guide and co-ordinate the activities.⁴⁰ Setting up autonomous high-powered planning bodies at the level of the regions is also envisaged to lay out details of planning activities and assist execution by way of providing the technical know-how, to the implementing authorities if and when sought for. Planning bodies at 'micro' (or 'macro') regional level may also be taken up.

8.4 The jurisdiction of such bodies be only confined to formulating the integrated development plans, taking into stock the resource-availability in terms of money, and material at the regional level, to advise and to provide the technical know-how, leaving the implementation part to the already-existing agencies concerned, which may be re-oriented and geared up to meet the present needs. This is envisaged because there are less probabilities than not, that the regional limits and the existing administrative boundaries coincide. As per the present proposal, while the present implementing agencies' rights are not infringed upon, the overall national gain is achieved by the fulfilment of the respective development activities in bits. All these have got to be achieved by taking appropriate legislative measures.

37. Development Value = Value of developed land (Present value - cost of development).

38. Improvement trusts, co-operative societies, municipalities, etc.

39. The theories and principles of delimitation of the planning regions is beyond the scope of this treat, which are highly controversial.

40. The body like Planning Commission.

The City as a Social Complex

by

Dr. B. H. Mehta*

1. "CITY"—ITS COMPLEXITY AND PROBLEMS

1.1 The city is not only a social complex; perhaps it is the greatest complex that man has created on this planet. The city is an answer to man's hunger for food, reproduction, work, wealth and happiness. The city is complex because it is large, though comparatively small in physical size. It is a social complex because it is structurally chaotic in growth and is required to perform intricate and difficult functions to serve the most complex species on this planet. It holds a section of the human race as if it is a hill inhabited by ants. Van Loone, the geographer had depicted in his book, the entire human race packed in a wooden crate, perched on a thin and lofty peak on the Himalayas.

1.2 The city, like the physical atom, is packed with energy which is restless and active. The city is a recent and social structure produced by man. Whilst the world came into existence about two billion years ago, the first man was born only two million years ago, and the metropolitan city is hardly a hundred years old. Man is the best learner on this planet; and therefore the modern city has a great future before it. At present the city is the melting pot of the individual, the family, the clan, the cast and the community. The impact between all these produces an impersonal human mass of strangers associated together by an indivisible human relationship, a relation between citizens of both sexes and all ages, producing the complex Urban Experience of a heterogenous society which is destined to develop into some kind of integration.

1.3 The city is dominated by a material philosophy. The inhabitants are drawn to it by hopes of finding work of earning a livelihood; of creating new values for new standards of living. Some are able to amass wealth and use it in a manner different from the feudal period.

1.4 Food and Space Problem—A city's most vital problems are food, scarcity of space and employment. Here, man, the intricate organism faces problems of sex, courtship, love and passions, humours and moods, marriage—and all human relationships in general. The city is a social complex because it is not so much the inhabitants, as their minds, their thinking, and their approach to life and its problems, which create the complexities.

1.5 Mental Health—The city suffers not merely from physical ill health but from mental ill health as well. Tensions generated by inherent conflicts between emotions and ideas, frustrations and satis-

factions, tensions arising from a fund of energy used in endless activities culminating in the innate desire of the human spirit for rest and peace, produce neurosis, affecting millions of people. In the city, ambitions are stimulated, desires multiply; there is innate discontent and frustration. Life continues to fulfil itself, while changes produced by time creates new and unfulfilled ambitions.

1.6 The city stands for opportunity. Opportunity for the pioneer to build according to his dream, for the seeker to create wealth, for the unemployed to find work, for the earnest student to find education, for the creative genius—the architect, the poet, artist and professional, to give expression to his personality and inherent skills and talents. The opportunities are only a Promise; and its fulfilment depends on efforts, and perhaps on accident and luck in so vast and varied a population. The city has produced a competitive individualistic society where almost everyone has to seek his own self interest.

2. THE HISTORICAL BACKGROUND

2.1 The city has demonstrated the difference between the comparatively static life of the previous two million years on this planet, and the dynamism of social change which put humanity in the first gear about the middle of the 18th century. The city, or rather the large towns came into existence in the earliest phases of the feudal period. The early emperors and military conquerors initiated the first small concentration of human beings when stimulated by the power complex; they established rule over territories where a few could live on the labours of the many who toiled. The use of leisure in the city, the restlessness of intellectual energy, the exercise of imagination in predominantly artificial environments where the background of Nature—the blue of the sky, the brown of the earth, and the green of the trees—were absent, produced a pattern of effort, the phenomenon of dynamic social change in a new, complex and heterogenous society where tradition and the past had little meaning.

2.2 The city is a social complex because of the growth process of a giant social organism where individuals represent cells in the city structure performing their diverse, endless and bewildering functions. The dynamism of change is the result of efforts of the human brain not merely to survive, but to change and dominate the total physical and human environment. The psychologist, Adler, emphasised the power and energy aspect of the human being and man's drive for mastery was influenced by urban civilisation and culture. Freud and his pupil, Jung, dealt with the sex urge and the basic emotions like fear, which are held responsible for every kind of activity

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of the human social complex. The brain and mental functions are conditioned by the environments in which man lives.

2.3 When man occupied forests and grasslands for more than a million years, when the humble tiller with the axe and the plough cultivated the vast plains, man lived like the animal for subsistence and reproduction. He was satisfied with elementary comforts. There were no cities in the long 'gathering and hunting' stages of economic development. A concentration of population is the result of the mobility of population. The nomads are said to have created a few of the earliest towns.

2.4 One of the earliest activities of human society centered round religion and this developed a worship of Nature. Hence some of the earliest cities grew up around natural objects of religious importance.

2.5 The origin of the modern city may be traced to the concentration of wealth in feudal towns that developed round land based societies. As communication developed, the surplus produced by them was distributed to other town markets, with concentration of wealth and power together they became cities of domination.

2.6 Cities did not produce their own food and hence created leisure time. Thus arose activities that produced learning and leisure time participations. The early cities were located near sea shores or river mouths. They contributed to the expansion of economy. They were centres for the production and distribution of goods.

2.7 In the later feudal period only the aristocracy indulged in luxuries. Latent physical and mental energies came into their own in the city producing mobility and with it, a changing economy that started with the early workshops of the large towns of the mercantile period. Small cities were born before the machine came into existence. But for the scope of economic growth made possible by the growth of communications, the city, or at least the modern metropolis would not have come into existence.

2.8 The Industrial Revolution brought in the machine, and the introduction of electricity gave speed a pride of place which changed the old battle for survival and existence into a struggle for better standards of living. Man could be fed by food produced on the plains. But machines stimulated the demand for materials and markets, and cities made it possible to feed the machines through the invention of complex economics that were unknown to man for thousands of years. The modern city with its small size and large population is actually the product of the Industrial Revolution. The mercantile period created towns larger than the old feudal towns; but cities developed as a result of the use of power and the growth of communications were very much larger in size. The culmination of urban development has created what are called 'metropolitan cities' of the twentieth century.

2.9 Along with concentration of population, the extent of growth of cities has led to the emergence of the city as a social complex. The owner of wealth and power, the urban intelligencia and the growth of technology have created

opportunities for work for the working classes. At first, as recorded in the history of most Indian cities, the working classes were reluctant to leave their rural homes because slum life in cities hardly offered opportunities and advantages available to the elite of the cities.

2.10 The social structure of the large mass of urban society is based on rural origins. The city becomes a social complex when the rural mind comes to town, along with rural modes, beliefs, customs and practices. The class structure of the modern city is highly complex, because that is also a middle class between the wealth maker and owner and the masses. The middle class comes to play a critical role in the life of a city. It replaces the serf class of the feudal period. Its destiny is difficult, hemmed in as it is between the rich on the one side and the masses on the other. It is called upon to serve the former and lead the latter. This has produced the complexities of national political structures. On the one side, the city has produced democracies in which the urban minority rules and dominates the food producers and rural masses; and on the other hand, the cities have produced a communist ideology where the urban proletariat claims to rule both the intelligencia and the rural masses, hoping to eliminate the rich through a more realistic and equitable distribution of wealth. In any case the dynamism of urban objectives is able to prevent the normal and self-ordered growth of millions of persons in villages in which the majority population lives. The cities indirectly dominate villages and nations, and World organisations are also created in cities to develop complex centres of power with changing and ambiguous ideologies and political objectives. Thus a secondary role is given to social and psychological objectives. The city has produced science, technology, wealth and power; but its inadequacies seem to develop a crisis which surpasses the chaos of wars of the feudal period.

2.11 A city grows up like any living organism. It is fed by its growing functions and their accomplishments. The city is both structurally and functionally different from the earliest habitats of man. The water problem, the problem of food supply, the problem of communications from the place of residence to the work place, the vast markets needed to meet the needs of groups with different standards of living, the continuous growing size of the population as a result of migration and soaring birth rates, problems of housing, health, education and social services gradually develop the most complex social structure known as the cosmopolitan, metropolitan city.

2.12 The totality of urban complexities thus includes the physical aspect, the psychological aspect where human emotions, mind, conduct, behaviour and activities are concerned; and the complexities of the social structure which are created by the individual. The complexity of urban economy is the fulcrum of world economic development and a world market. This total urban complex produces urban culture which is material in nature, pecuniary in manifestation as the sociologist Veblen puts it, and yet bewildering, complex and ever changing in manifestations.

2.13 The complexities of emotional life in cities with their enthusiasm, passionate energy, sexual stimulations and morbidities and frenzies of all kinds, seem to produce only frustrations in the end.

Satisfactions and elations are of a temporary nature when the individual is engrossed in the self; but the city does not seem to satisfy the spirit of man as he is developing his latent skills, abilities and capacities. The frustrations are due to the inherent structural and functional shortcomings of the city, the nature of the sex and family life that develops in the city neighbourhoods, and the weaknesses produced by a chaotic and unplanned yet historic growth.

2.14 The cities have yet to discover themselves, organise themselves, manage themselves, and above all things find out the meaning and purpose of life, of the larger social objectives in terms of ideals and practical opportunities for the complete satisfaction of the human spirit and body. The city has to solve the problems of relationships, in spite of the inherent conflicts between the very highly developed individual and the human goals and objectives to obtain the welfare of a vast humanity.

2.15 Whilst the visions and achievements of the city are attractive and endless, its physical conditions are deplorable. The cities are beset with difficulties, because water, land, shelter, food and health problems are baffling enough, and they tend to produce the cancer of city society, the 'Slum'. The slums are produced by the inefficiency of undeveloped human beings who live in the city and constitute its population. The urban reality is complex, as the city is full of contradictions. Selfishness prevails over social conscience, the absence of a sense of togetherness leads to the lack of awareness for basic human needs. Even the possessors of wealth and highly educated persons lack the full development of the aesthetic sense, leading to unhappiness, immorality, delinquency, crime and social disorganisation at times. The city lacks social health because of the deficiencies of natural health and abilities of its citizens.

2.16 The city is complex because of its environmental complexity. Also, it is a product of man and society. The city arises from its contents; its boundaries are continuously destroyed or replaced. Though most cities are products of time, they are comparatively of recent origin in the history of more than two million years of the human race.

2.17 A city is the result of a concentration of population, and the concentration of structures needed to fulfil the requirements of not only its citizens, but of the nation and even of the world at large. The early structures of human habitat centered round the available food supplies of the population; but the city has to find most of its food requirements from outside.

2.18 The city is inseparably associated with its economy which is centered round the work life of its inhabitants. The work life of the urban population is complex because thousands of people perform only the simplest of economic functions in the industrial age. At the same time highly specialised brain workers are engaged in mental activities involving scientific thinking and advanced technology. The best intellects of the ancient world are left far behind, except perhaps in the spiritual and philosophical world. Intellectuals of Vedic, Egyptian, Persian, Greek and Roman cities had

to deal with a comparatively small world. Between manual labour and intellectual and scientific acumen there are now vast intermediate levels of work requiring different types of efforts, skills and experience. This creates an economic bounty and a corresponding social hierarchy with the different sections of the elite and slum dwellers. They live physically separated, and their emotional tensions erupt in periodical conflicts which at times affect every aspect of city life.

2.19 A city, apart from its work life, holds physical houses and their social counterparts, called 'homes'. Here families live; but the urban family is a product of recent history. Clans, castes, extended families and joint families belong to rural and sylvan communities. The family background of the feudal society is still in existence. Cities in India are occupied by feudal, patriarchal and extended families with their rural traditions and behaviour patterns. The small tenement in the city accommodates only a simple family. However this family has developed complex social problems. It is hardly possible here to deal with the contents, conflicts and tensions of sex life in a modern city. The original and natural sex life of the male and female have to be conditioned to the sex, love and courtship patterns prevailing in slums, affluent homes, educational institutions, temples, factories, clubs, cinema houses, railway platforms, buses, and innumerable other types of urban environments where man meets woman.

2.20 The social complex in city involves extremely complex emotional conditions and human behaviours. Urban morality, by itself, is complex in its origin, manifestation and development. There is the outer crust of social behaviour, and the functioning of complex living organism leading very complex lives. Society is governed by human relationships. Sometimes sordid, some times utopian, sometimes idealistic, rational as well as irrational, spiritual as well as material, it is hardly possible to mention the many types and great complexity of human relationships that exist in cities with millions of population. The city becomes a social complex because of the emotional life of the citizens.

2.21 The basic fundamentals of the urban social complex eventually relates to the biology of the urban citizen, the psychology of the urban population, and the city and its history.

2.22 The city is pulsating with energy to satisfy a highly complex desire nature, which is a product of situations created by home, community and social environments. Human lives, thinking and behaviour are affected also by newspapers, the radio, the cinema and the varieties of leaderships that function to direct, control and manage the innumerable aspects of the lives of large numbers of heterogeneous communities.

2.23 The physical emotional, intellectual and social life of each individual in urban society is conditioned by environmental, historical, economic and social factors. Each section of society, adult males and females, youth and children are affected. Old persons, however, conditioned by time and experience, find old age difficult and complex, unless protected by the values of old family patterns. Generations change their thinking and behaviour vary rapidly in cities, whilst

in villages traditional life patterns continue for centuries. Indian culture is changing into western patterns of thinking, working and living. Cities produce new culture which almost obliterate the cultural basis of the past because of the restlessness of action, the society of competition, the speed of life and the paucity of thought. The urban citizen is the most lonely individual in the midst of very large congregation of human beings in very small physical environments. The strain of the city on family life is immense. Many western sociologists have come to believe that family life is incompatible in an industrial society occupying metropolitan cities. The urban citizen belongs to so many environmental and functional communities, that persons eventually develop a protective wall of individuality which creates the impersonal urban personality.

2.24 Streets, neighbourhoods and localities replace the old village, and a complex community arises where relationships are impersonal and self-interested. The individual has to develop defence mechanisms and cultivate new relationships continuously, as life is tossed about from environment to environment, and situation to situation. In the slums even sleep and functioning of sexual life are difficult in the thousands of one-room tenements. The aesthetic sense and concepts of family at times become pervert and ugly. Anti-social behaviours and juvenile delinquency become chronic characteristics of city life. The already existing complexities of society become more intricate due to delinquent behaviours and actions which are motivated by criminal purposes. Vices and bad habits become indispensable recreations and the enjoyment of life often consists of an energetic efforts to escape the realities of mental life. Physically, thousands of human beings develop a condition of sub health, suffering from headaches and similar chronic ailments. The emotions are expressed through unstable moods and tensions, producing irritable and neurotic behaviour. Mental life is often delirious and unstable, lacking the capacity to face the pressure of situations and events. Thus man ages early in cities, becomes a seeker of comforts and hopes to enjoy luxuries by escaping the duties of life, which are transferred to less fortunate shoulders. Hiding behind a facade of neon-lights and extreme ostentation, the city at times produces patterns of senseless and sensuous living without thoughtful values. A decadent and pecuniary culture thus develops characteristics of a sensuous and material society.

2.25 The city is ever new and changing. Whilst other environments took centuries to develop, the city is continuously awakened to a sense of reality. It is realised that the needs of millions of human beings are different from the needs of small castes and groups. The needs are being met and sensitive urban citizens have come to realise and understand the city. Facing reality, and realising the need of understanding, urban leaders have arisen, who will eventually shape urban societies into planned environments and communities with freedom to grow and live. Even an urban culture may arise amongst refined, sensitive and creative human beings who will appreciate the importance of nature, health, intelligence, and real happiness.

2.26 The problem of space and the associated problem of the slum are physical in character, and since Environment and Man are inseparably

related, the problems of city planning and housing assume the greatest importance. Since the beginning of the human race, preference, selection and adaptability are the three factors that govern the relationships between the individual and his physical environment. For thousands of years the physical site for living was a selection by small groups. The city creates individualistic persons and it remains to be proved that city life is preferred by a majority of its citizens. It can be proved that the poor immigrants from villages prefer to return to the rural environment; but after a few decades the city leaves little scope of return to many of its inhabitants. The complexities and historical growth of feudalism brought the city into existence, and for a time it became difficult to draw the rural masses into the city. The coercion of rural circumstances and the hope of opportunities eventually brought millions to work in cities of employment opportunities. Cities have withered when employment opportunities disappeared.

2.27 The slum is a major problem of vast sections of any city. It is a physical, human and social problem. The slum grows up rapidly and accidentally. The physical conditions aggravate the problem but the real problem is the slummer. Slums do not exist only where there are one room tenements, narrow streets, absence of water supply and concentration of population, houses and dirty trades. Well laid out areas have also become slums. There are slum spots inside imposing buildings and broadways and behind public parks and gardens. Slums are only indirectly created by planners, architects and engineers because of their inability to deal with basic, social, moral and economic realities. These problems need the aid of scientists and persons with a highly developed social consciousness. The complexities cannot be altered without a revolutionary change in the outlook of all urban citizens. The cities lack resources, leadership, management and administration; and therefore slums exist. The slums are a visible expression of the class structure of a complex urban economy. The village class structure was comparatively simple; but the urban aristocracy, the educated middle classes, the successful workers and white-collar workers of the lower middle class, and the masses of the city represent a baffling class complexity, where there is a basic inability to live together, except in class atmospheres, separate neighbourhoods, environments and conditions.

2.28 The city has yet to produce rational solutions where the needs of the masses and the ambitions of the elite of the class structure can be dovetailed to produce harmony in urban living. Unless there is a rational change in social philosophy and national objectives, slums will continue to exist. Slums are rooted in the errors of the past, the haste and impatience of the present, and lack of social consciousness to design a future for all citizens. The solution of the slum problem lies in catering to the needs of social justice and human needs. As long as the city is rooted in the philosophy of the self and its energies are directed first to secure money, and then to produce, develop and create a pecuniary culture, till then the entire city outwardly attractive on the surface, will remain a vast slum where social health and human happiness and welfare of millions are conspicuous by their absence.

2.29. The human and social problems of the city are innumerable and perplexing but the most aggravating factor is housing. Cities were created by feudal aristocracies and entrepreneurs to serve their basic and economic interests. Rural masses who are drawn to the cities are provided tenements, inadequate as regards the most elementary needs of the human organism and the family institution. This brings about a physical and moral deterioration and degeneration accompanied by neurosis, other emotional disorder and social demoralisation.

2.30 The greatest victim of the slum is the human family. It lives in the physical unit of the slum, the building or structure which is a residence. Whilst the extended family of the feudal period shrinks in the city, the size of the industrial unit can so expand that a single industry can develop into a vast town. Such expansion has compelled cities to create sky-scrapers and take to vertical development in order to establish some co-relation between population needs, residential needs, workshop needs, recreational needs, and the need of urban social services. All this has produced the method of zoning and planned area developments, master plans, promotion of industrial communication (first suggested by Sir Robert Owen), co-operative housing and industrial societies, etc. These do not seem to have succeeded to serve their objectives.

2.31 Cities are unplanned to serve the needs of expansion. They have not taken any cognisance of the physical, biological and psychological needs of the individual or human groups, or of social change, a most complex phenomenon that is experienced in continuously changing social situations. Many cities in the past have been destroyed by fire, disease and war. The reconstruction of old cities have added to the existing inadequacies and complexities. There is always a disproportionate relationship between available space and the size of population. Master planning is difficult and results will prove inadequate because economic forces and social change cannot be adequately appreciated or successfully measured in advance. Many cities have shrunk in size and the importance of cities may change due to unpredictable political and economic factors. Any city has a population that is enumerated at the time of each census. The rate of change of each city is different according to political, economic and social conditions. Some cities of the world have become 'problem cities' due to political reasons. West and East Berlin are an example. Vientiane is conditioned by local and changing political conditions. Hong-kong and Shanghai are unique problems of urban growth, conditioned by forces which are not likely to be permanent. The uncertainty and insecurity of these populations can hardly be imagined. Cities in Africa are likely to experience abnormal conditions for probably a very long time to come. The problems of race, colour, class, caste and inter-group tensions create complexities that affect the lives of individuals, disorganise family and community life and affect the destiny of nations.

2.32 Many cities have an abnormal sex ratio in the population make up. Sometimes the disparity is very great. There are some cities with an excessive female population, and there are many more where males outnumber females. An unbalanced sex ratio affects marriage, family conditions, social morality and the employment situation.

2.33 Highly organised religions have existed on all the continents for many centuries. The religious life of cities is by itself a complex social problem. Conflicts between religious organisations often disturb urban harmony. The factors which separate individuals and groups in heterogeneous city populations are so numerous that they tend to produce a precarious balance by social adjustments based on self and group interests.

2.34 Modern factories in new areas are vast, functionally efficient and attractive. But the architects construct small box like tenements for workers' families, who have to live therein, irrespective of the fundamental needs of human beings. The residential community is developed according to standards which are far below the luxurious industrial environments which are built out of public taxation or public investment.

3. THE PROBLEM OF DISEASES AND ILL HEALTH

Emphasis has been laid in this paper on mental health; but the problems of physical health and physical fitness for national efficiency are inseparably linked to problems of housing and nourishment. When the minimum housing standard is only about 23.22 sqm. (250 sq. ft.) for an average family, where streets are narrow, where water supply is restricted to a few hours a day, and where nourishment of millions is linked to meals served in sub-standard restaurants or houses without a kitchen and dining facilities, physical health is bound to be poor. This is irrespective of factors like heredity, undernourished mothers, high costs of living, etc., which worsen the situation. The medical services in the city are improving; but social services are no substitute for good physical health and social health. The scourge of T. B., small pox and diseases of the respiratory and digestive systems could be controlled; but this will only add to population congestion and further need for vast economic expansions in almost non-available space. The future cities must have great scope for physical expansion, they must have a basis of natural surroundings, and they must provide large areas for parks and gardens to enable cities to breathe fresh air. City planners have yet to reach a scientific conclusion whether residential and industrial zones should be far apart; or that the industrial community should develop an integrated social and cultural base near or at the work place.

4. THE FOOD PROBLEM

4.1 The problem of urban nutrition is not merely a problem of calories, fresh food and wages. If national integration is imperative and ultimately only a classless society can achieve social health, then the separate existence of food producers and industrial workers may create serious difficulties. The food problem prevents a solution of the basic problem of urban-rural relationship and urban rural inter-dependence. Cities may achieve a high level of prosperity, but any future urban conflict with the rural masses can bring disaster. It is necessary to remember not only the Russian Revolution of 1917; but the disastrous consequences of urban-rural conflict in Russia after 1926 which led to the introduction of the New Economic Policy of Lenin. The U.S.A. is likewise compelled to subsidise farm prices to maintain the balance between the less prosperous food producers and the more powerful industrial workers. India is bent upon reducing the pressure of population on the soil.

This will mean an increase of the urban population. But at the same time food will have to be produced, higher prices will have to be paid to the rural producer* and a policy of national harmony will have to be efficiently implemented to maintain perpetual peace between urban and rural areas. Panchayati Raj has only just begun; and the city will have to face many consequences of this new policy with a sense of justice in the years to come.

5. BASIC FACTORS GOVERNING ECONOMIC DEVELOPMENT OF INDUSTRIAL CITIES

5.1 Modern urban economy is not merely an improvement of the economy of the early Industrial period. Three basic factors govern the new economic development of industrial cities. Firstly, the size of the industrial unit is vast both in the private and the public sectors; secondly the phenomenon of mass production is associated with the use of electric power and machines in preference to man-power; and thirdly there is the attempt to eliminate the industrial worker by rationalisation by the introduction of automative machines. As the atomic age has just begun, the vision of massive cities with unlimited population is yet premature. The economic situation is related to the military situation. Nuclear war has come to stay as long as man has come to realise the possible use of nuclear power. The future city must be built to achieve security against nuclear attack. Such a city will have to be small in size; machines can replace man-power in future industries. A part of the city may be underground. India is only on the threshold of Industrial Development. It has not only to overtake the West, but its rate of progress will have to keep up with the fast developing growth of industrialised nations. Most of them are trying to help the undeveloped nations; but at the same time they are trying to increase the distance of developmental growth between the highly developed and the undeveloped nations.

6. CONCLUSION

6.1 On the whole it can be ascertained that the most advanced industrialised nations have found the urban problem to be too complex of solution. They are rapidly building the new cities or expanding the old ones on the errors of the past. They have yet to master the problems of growing population, industrial strife, zonal development, horizontal versus vertical development, road transport and railways, food production, supply and distribution, water supply and drainage, social services, military security, crime and delinquency, and a host of other large and small problems that increase in number as nations are nearing a world integration, and as a world economy is replacing the competitive national economics of the past. Indian thinkers, planners and scientists must develop new approaches and a new philosophy, new objectives and architectural designs to keep India in the forefront of national progress.

6.2 The city complex is producing social problems of great magnitude. Like any society, urban societies produce their philosophers, and in the modern age most cities have received the help of scientists and technicians.

6.3 Philosophers, scientists, engineers, administrators, doctors, lawyers and the vast array of other professionals, have created cities suitable to the functional needs of the whole urban population. In each field of urban life and development, leadership is present; urban leadership is so complex, the social life lacks homogeneity and integration. Social and economic problems and their complexities have produced the politician; the emergence of political influence leads to the permeation of politics in all basic conflicts and tensions in the social and economic life of the city. This situation is baffling to the ordinary citizen. The political situation in the world today is more complex than it has ever been before. Even in democratic countries, the cities are governed by centralised administrations. It is hardly possible, in a short paper, to highlight the social problems of urban society. The magnitude of research studies carried out in cities is an index of the complexities of urban life.

6.4 Efforts to deal with cities in a systematic manner and to determine the nature and magnitude of the urban problems and needs, began some decades ago. The London Survey in England, the Springfield Survey in U. S. A., and innumerable other surveys carried out under international and national auspices have proved the complexity of city life. Since Independence, under the auspices of the Research Programmes Committee of the Planning Commission, innumerable urban studies have been carried out in India. Some of them have stimulated planning and development concepts. Dr. Cadbury's Hertfordshire survey in England is a regional survey; but all aspects of urban planning, growth and development are involved in this scientific approach to regional planning.

6.5 Cities in India, especially Delhi, Bombay, Calcutta and a few others have their approaches to planning and development. But these seem to add more to existing complexities, and many overgrown cities have realised that social problems have increased out of proportion with the growth of social services and social security measures. Problems of social ethics and morality are baffling, whilst urban cultures seem to develop their own concepts and values which are visible in the Arts, Architecture and Scientific achievements interpreting urban concepts of beauty, happiness, prosperity and social health.

6.6 Such programmes, urban culture and national standards of morality, ethics and civilisation are of the greatest importance. Cities have become the nucleus of political power and economic growth, but they have yet to seek and find the highest standards of ethical conduct, social morality and cultural values. Shorter hours of work, greater leisure, greater opportunities to develop latent talents, skills and genius of man will eventually help replace the pecuniary culture of the aristocratic elite by true culture which is an expression of the general art of living. The culture of cities is the product not of a few superlatives, but it is the combined product of the creative genius of masses and classes, eventually destined to be the common inheritance of great urban civilisations.

Problems of Urban Fringe in Relation to Metropolitan Growth*

by

Sayeed S. Shafi†

1. WHY URBAN SPRAWL

1.1 Time and technology have changed the face of the 'city'. From a rather simple human settlement, the modern city has grown into a gigantic sprawling metropolis commanding an orbit of influence which would have been difficult to conceive earlier. The immensity of big cities seems to be a universal phenomenon all over the world. It has been anticipated that if the present trends have to continue, within the next two decades, many of the great cities will grow into massive megalopolitan complexes.‡ The problems of such super cities defy imagination. And yet, this phenomenon of rapid urbanization and the emergence of large cities is by no means unique to any one country. Most of the countries of Asia, Europe and Africa are going through the same process§ Tokyo, Calcutta, Hong Kong, Cairo, Paris, Moscow, London are behaving in strangely identical ways so far as the urban scatteration is concerned.

1.2 Expressions like : "urban sprawl", "green belts", "satellite townships", "urban villages", "ring towns", "conurbation" and "ribbon development" are being heard with an increasing frequency. It appears that urbanism of the city and its accompaniments, the core and the periphery, the city centre and the suburbs, for better and for worse, are the phases of the present trend. Apparently, countries which are rural in character, cannot for long escape the emergence of giant metropolitan centres.

1.3 In the industrially developed countries, "the automobile has become the 'dragon in the streets' of the city choking off traffic, polluting the air and challenging the pedestrians".¹ Perhaps the most important single problem facing the planners is : how to create and maintain the semblance of a human scale in these rather extraordinary circumstances of the contemporary metropolis. The search for beauty, peace and harmony remains something of a dream in a contemporary city. "In the city

almost everything can be found but peace and quiet". One way to restore some harmony and to introduce the human scale has been an attempt on the part of planners and civic designers, to bring the "country", the "green" and the "nature", right into the city itself by extending green linkages—the parks, the forests, the gardens, and the lakes and water courses. But possible as it was (though not without difficulty) in the past, under the present circumstances and pressures, it has now become virtually impossible to achieve even a semblance of the natural green² and may even to maintain decently the existing greens of our towns.

2. NEED OF A CITY PLAN

2.1 In the second half of the twentieth century, as a general rule, the cities are expanding fast and often without plans. Under the present circumstances in India, it has become difficult to control the urban periphery, so that year after year good agricultural land becomes a victim of promiscuous urbanisation. The classic fortifications of the ancient towns, the proportion and geometry of Palma Nova, or of the famous rectangle of ancient Peking, or the logical framework of Shahjahanabad has all but vanished, and with them the green open spaces and gardens. Urban sprawl is the order of the day which means ever changing urban limits and shifting boundaries. The periphery is subject to tremendous pressures whereas within the central areas there exist irresistible moves to usurp the initial available open spaces. Commenting on a situation like this recently, The Statesman, in its New Delhi Notebook, pointed out :

"What is required is a league for the protection of Delhi's parks and monuments, protection from bureaucracy and the later-day practitioners of Victorian-Gothic. Unless one is formed quickly much of the capital will become unrecognizable in a few years."

†Town & Country Planning Organisation, New Delhi.

‡In a recent discussion on the challenge of conurbation and rapid urban sprawl in the USA, TIME Magazine (Maca 23/1962) stated that before long the USA may be engulfed in "strip cities" a 700-mile giant stretching unbroken from Portland Maine to Boston, Massachusetts to New York, Philadelphia to Washington; another bringing the Florida Coast, from Jacksonville to the Keys; a San-Diego to San-Fransisco in the Pacific Coast; and a Milwaukee-Chicago-Garry, Indiana.

§Somewhat similar situation exists in Japan (Tokyo), Calcutta and Bombay (India), Amsterdam-Dan Hague-Rotterdam (Holland), Paris (France), London (England), Cairo (Egypt).

1. *The cities of the 60's*. In 1911, a horse and buggy could move through Los Angeles at a rate of 17.6 k.p.h. (11 m.p.h.); in 1962 during the rush hours the average car makes the same trip at 8 k.p.h. (5 m.p.h.). TIME Magazine, Volume LXXXIX No. 12, pp. 10-13, issue of March 23/1962.

2. *Ibid.*

3. For instance, cities like Paris, Hamburg and even Berlin can boast of forests, regional parks and water courses coming right in the heart of the city.

2.2 The extent of the city of to-day is determined, not so much by its political or administrative boundaries, but by its 'area of influence' based on functional affinities which spread far and wide, well beyond the formal city limits. With the improvements in methods of communication (automobile, telephone, etc), the traditional urban-form of a compact urban community which used to neither sharply defined (physically and socially) from the surrounding rural areas, has become increasingly diffused.

2.3 Unlike the towns of the past, a metropolitan centre must be viewed as a complex organism composed of several sub-areas tied together into a functional unity. The functional affinity between the core and the periphery normally maintains a proportion to the overall size of the metropolitan community and the state of technological development at a given time, but perhaps more significantly on the mode and methods of circulation and communication. One of the key features distinguishing the present day metropolis from a city of the past, is the ease and rapidity of exchange or movement—of persons, commodities or information.

3. CHARACTERISTICS OF INDIAN METROPOLIS

3.1 A typical Indian metropolis of to-day may be said to have three major structural components, a small central core^(4, 5, 6) characterised by a pronounced concentration of retail and wholesale trade; the second tier is almost a ring surrounding the "central core" consisting of old (and usually derelict, crowded, congested and sub-standard) developments consisting of all sorts of land uses, houses turned into business premises, garages into workshops, worn-out houses and often blighted structures used as warehouses. All this is caused by an indiscriminate sprinkling of all sorts of incompatible land uses—trades and industry right in the residential buildings. And finally the third element consists of outer development, a unit of suburban type of development, forming the third or the outer ring; often called an area of hope but in fact the "limitless" and the ever-expanding periphery. With notable exceptions of a few organized and planned suburbs associated with older cities, the periphery is neither the city nor the country. Normally it mushrooms without a plan or perspective. Since population increases in the present context are taking place much too rapidly,

there is no definition, no boundary and no limit to this urban sprawl; what to-day is 'urban fringe' may not be so tomorrow.

3.2 On the other hand, however good or bad it may be, it is not the "urban fringe" but rather the "city centre" that furnishes the cynosure of a city. The character and form of the central core still defines the personality of a city though, of course, it is not the only component.⁷ Unfortunately most of the cores have stopped expanding and have consequently become stagnant and ugly. In India, several of our cities have a dual personality and have more than one "central core". Yet almost without exception, the central cores of the Indian cities have already become inadequate to meet the increasing demands and expanding functions upon their transformation from ordinary towns to metropolitan entities. Almost a total lack of planned effort to redesign the urban core has resulted in stagnation or piece-meal development which lack character and form.

3.3 As of now, there is hardly any city in India, which does not have this characteristic; inner congestion and outer sprawl, which is taking place, uncared, un-coordinated and un-planned. Moreover, the quality of this "urban sprawl" is of such a nature that for most of the cities, it is like the "sprawl of the slums" rather than low-density and sometimes rather pleasant green suburbia of Europe or North America.

4. NATIONAL CAPITAL REGION—DELHI

4.1 In the past decades, India's urban population has increased from 28.2 million in 1921 to 77.8 million in 1961. As against 28 cities in 1921 we now have 113 cities, according to 1961 Census.⁸ Almost all of the trends and projections indicate that future urban increases in the coming decades will be even more, and the process of urbanisation will be further accelerated. For one thing, the rationalization and mechanization of agriculture and rapid industrialization will push more and more people to towns and cities in search of a livelihood. In the Union Territory of Delhi alone, during the last three decades (1931-61), more than a hundred villages have been swamped into the urban orbit. In last decade alone, 43 villages with approximately 10100 ha. (25,000 acres) of land area and 94,000 population have been absorbed in what has been defined by the Census Authorities on the "1961 urban area". By 1981, it has been estimated that in Delhi another 46 villages will have been incorporated in

4. For discussion see by R. U. Ratcliff; *Urban Land Economics*, page 56-58. Mc. Graw Hill Book Company, New York—1949.

5. For details discussion of metropolitan form and structure, see *The Metropolitan Community* (New York : Mc. Graw Hill Book No. 1933)/pp. 6-7; Donald J. Bogue, "*The Structure of Metropolitan Community*"; University of Michigan Press, Ann Arbor, Michigan, 1949; Leo F. Schnora, "*The Timing of Metropolitan Decentralization*"—AIP Journal, Vol. XXV: 4 November 1959; Sachin Chowdhry : "*Centralization and Forms of Decentralization*", Paper No. 17 presented in Seminar on Urbanisation in India, University of California, Berkeley (USA), 1960.

6. Of course, there are some cities which have no cores at all like Los Angeles, and many have more than one core, like Delhi or Lucknow.

7. For an interesting debate regarding the plight of the central core, see an article by Dean Burchard of MIT's Department of Humanities in the series; *Adventures of the Mind*; "*Must Our Cities Be So Ugly?*" POST Magazine, issue of December 2, 1961.

NOTE. A tourist does not visit Paris to see its suburbs, (unless he is a planner) but its famous central core consisting of avenues, gardens and monuments. When he speaks of the City of Light, he invariably means the heart of the City.

8. See Census of India, Paper No. 1 Registrar General of India, New Delhi.

the proposed urbanizable limits.⁹ No wonder only a few years back, a well-known town planner who was initially responsible for the planned growth of Delhi said in utter despair, "I cannot keep my green-belt in place because almost every year, I am forced to shift its extent on the outside".¹⁰

4.2 Under the heading : *March of the City*, The Statesman of Delhi has described the growth tendencies of the national capital, to that of a monster which has destroyed most of the agricultural land in its vicinity and has changed the natural landscape. This change is being brought about in three distinct ways :

- (i) Firstly, by what may be called as a process of elimination through actual physical action. The city just marches out boldly and the farmland around the village becomes the site of factories or residential colonies. This is called urbanisation in the official technology.
- (ii) The second method is more subtle. In villages where the land has not site value or is unfit for habitation by the city population, the city dictates the pattern of life according to its needs. Villagers find it more profitable to produce things that the city needs rather than do what they had been doing, or what they would do if the city was not there. Some villages around Delhi find it more profitable to grow flowers during fallow periods rather than the traditional lentils. Cultivators on both sides of river Jamuna concentrate on vegetables rather than on hard crops for which this soil is eminently suitable.
- (iii) The third might be called annihilation by elevation. The expanding city disperses some of its surplus population, congestion and activity to some village, and it gets promoted to the next rung of the evolutionary ladder it becomes a town; Najafgarh, Mehrauli and Narela are small townships that have sprung up during the last few years because of the pressure from the city and they have few traces of their rural inheritance.¹¹

5. RURAL EFFECT ON URBAN GROWTH

5.1 As a general rule, a city's growth takes place due mainly to the in-migration of people from rural areas, and this in turn, takes place because of the differentials of economic opportunities prevalent in the vast surrounding hinterland. The implications arising out of the city growth however, are more pronounced, most intense and extremely significant in the areas of its immediate surroundings :

in the periphery or the urban fringe than in the central areas or areas which are too far away from the city.

5.2 This diffusion of urban and rural character around the urban periphery creates, serious problems of transition both human and economic. In the absence of any deliberate planning effort, and therefore, of any clear definition of urbanized limits, this area in fact becomes sort of a "no-man's-land" which is, strictly speaking, neither an urban area nor a rural area. It has neither the facilities of a town nor the pleasantness of a village. The expansion of a city's physical limits means far-reaching consequences, particularly in the neighbouring villages situated 3.2 to 8 km. (2 to 5 miles) away from the viable urban configuration. There are consequent changes in the occupational characteristics of the working force and latter in their pattern of living.¹² In fact, day-to-day requirements of urban concentration are such that they inevitably attract a great many people from the rural areas for maintaining and feeding the city population.

5.3 The role of the rural areas around an urban complex in supplying perishable food—green vegetables, milk, poultry, fruits, etc—to the city, implies an inevitable change in the round pattern of agricultural production. From the pattern of the normal crop production, the farmers find it more profitable to switch over to what is sometimes known as the "truck farming". This tendency can be compared in a way, to the transformation and switch over from foodgrain crops to cotton growing and, from cotton growing to sugar-cane, a kind of which has taken place in some areas of India. And, as we know, in several places it has created serious imbalances within the rural areas and later, in the urban and industrial economy as well. But this change from the normal farming to vegetable farming may not be necessarily bad or disastrous; in fact it may even be considered as conducive to maintaining the standard of living of the farmers to a level higher than in the far flung remote villages, thereby discouraging them to move to the city itself. It does, however, create significant economic and cultural changes in these rural communities. The more important and perhaps more serious pertain to the villages which one day find themselves engulfed in the midst of the urban area itself. Although they may be counted by census authorities as part of an urban area, nevertheless for many many years to come (perhaps even decades), they do not enjoy most of the normal urban amenities. There is no definite relationship between the urban sprawl and the provision of the urban amenities and services. As of now, many of the well-established urban areas within the city are in great deficit, so far as the elementary urban facilities and services are concerned. Consequently the newly engulfed villages can hardly aspire to obtain any of the urban amenities. Indeed in the process they lose whatever natural

⁹. Office of the Census Superintendent, Union Territory of Delhi; In 1931, there were 381 villages in Delhi. Out of which 49 were un-inhabited or were in flood plains; but their land was cultivated by people from nearby villages. In 1951, Delhi had only 304 villages; the rest had been urbanized in the intervening period. In 1961, there were 300 villages.

¹⁰. See Volume II; Part 3, *Master Plan for Delhi*. Chapter : XIV, RURAL DELHI, Published by the Delhi Development Authority, 1962.

¹¹. The Statesman, Delhi May 22, 1962; *March of the City-1*.

¹². There is evidence to suggest that with the increasing popularity of cycles in the rural-areas, the economic functions representing interchange and inter-dependence among the villages around the urban fringe have considerably widened. For instance, in Delhi it is a common sight to observe an endless train of "cycle-wallahs" although along with their milk cans hinged on both sides of the handle bars, coming from nearly all the directions and going into the central city every morning and every afternoon. And late at night, carts full of cabbage, cucumbers and other green vegetables move towards the vegetable markets of Delhi.

charm they have had, once they become demographically part of the urban complex. A combination of "urban-misery and rural poverty" is what actually takes place eventually in such areas.¹³ Describing the difficulties faced by villages on account of such a sudden urban expansion, last year, The Statesman† Delhi pointed out :

"Expansion of the city has brought together the rural and urban people who often do not understand each other's ways of life. There are some villages situated within the urban limits of Delhi which have tenaciously retained their agricultural character. But the villagers find it extremely difficult to carry on their fields. Early in the morning a large number of people come out for their morning walk and crush tender seedlings under foot when they happen to stray into the fields. At times, even the most conscientious city-dweller cannot help doing this. For example, in December, the tiny wheat seedlings are so small and so much like grass in appearance that they invite a stroll through them.

6. PROBLEMS OF URBAN EXPANSION

6.1 Unbridled sprawl of the urban expansion creates well-known but rarely understood problems in land speculation all over the fringe areas. Very often, the premature development of peripheral areas is caused by the so-called phantom sub-division plans 'of land on paper'. But this fictitious sub-division of land is extremely injurious to any logical or planned development of the community at large and adjoining rural areas in particular. For one thing, in most of such cases provision of even the essential urban services and amenities remain a long cherished dream. But perhaps the most undesirable feature is the fact that although the plots are drawn on paper yet the land stands committed to a land use which is not there, and not likely to materialize in the foreseeable future. Premature sub-division of the urban fringe virtually amounts to an avoidable mortgage of the future for the doubtful returns of the present. Obviously this creates problems which defy the normal planning approaches and any settled methodology. In some of the larger cities of India, like Calcutta and Delhi for example, 'bustis' and 'squatters' shacks have sprawled all around the central city.

6.2 In fact, in any metropolitan city in India which is experiencing rapid growth, there is always a good proportion of building workers and artisans which start residing in the humble huts and flimsy shacks just as close to their places of work as is possible. Now, this type of development may not necessarily be bad or un-healthy as a temporary measure in a non-urban setting but becomes intolerable when it is situated right in the midst of an urban concentration because such 'shack towns' or bustis suffer from the lack of all essential civic amenities. To date, no realistic solution has been found for the settlement of these essential and rather vital segment of population within a growing city in India. It is indeed ironical that those who build our cities virtually brick by brick, themselves remain without an elementary shelter.

6.3 The development pattern of areas around the urban fringe is generally of a level considerably below the already miserable standards of development prevailing in most parts of the urban core itself. As a rule, sewage lines and, sometimes even municipal water mains are not there and it takes quite a number of years before they can be extended by the municipal authorities. With the passage of time, almost always it becomes more and more difficult to find investments for raising the standards of sanitation, water supply and particularly of community facilities and services, such as schools and playgrounds, so as to make them more consonant with accepted norms of urbanization.

6.4 In the rural communities adjoining the urban fringe, the social life also undergoes a period of change and transition. The relationship and intimacy obtaining in a compact village is one thing and the loneliness and anomity in a large city is quite another. The basis of the social relationship undergoes a significant change largely due to the transformation of physical pattern which, in turn, changes their traditional way of life. It is generally being observed that a rural area and its community cannot exist in its traditional way once a village comes within the urbanizable limits or under the orbit of influence of a huge city. Change in the entire social, economic and cultural fabric is inevitable. But the unfortunate consequence is that this change takes place generally replacing the traditional good values by uncertain modes and doubtful pattern of social behaviour and interaction.

"The most unfortunate victims of the expansion of Delhi", said a correspondent of The Statesman, "are villages which themselves have become centres of much industrial and economic activity, and are thus *targets for migration from the city*". It has been pointed out that the 'intrusion' of cityfolks, themselves landless, but nevertheless 'outsiders' to these villages, accelerate the process of change in a rural community to a not-so-urban one.

"Whenever the expanding city has made its impact seriously felt, it has released vast disintegrative forces which have brought about the dissolution of the large family system and destroyed, the intimately corporate life they lived in earlier days. In earlier days land was not only a source of income but also a force for unity in the family".¹⁴

The inability of the farmer to stand in competition with the 'migrant from the city' has been traced to the fact that when the age-old peasant takes to non-agricultural trades and occupation, he is severely handicapped by lack of tradition. For generations, he tilled the land and ploughed the field till the real estate speculator from the city drove him out of farming by luring him to dispose off his ancestral land in return for an illusion of fat cash. From agricultural production, he then turns to selling things—something new to him. This is indeed a very significant change because it transforms completely the rest of his life. Most of the peasants end up as 'working proletariat' employed in the shops or factories run by the cityfolk—the 'outsiders'.

¹³. For detailed discussion of the causes and consequences of urbanization in Asian countries, refer to the Proceedings of Seminar on Regional Planning held in Tokyo in 1958 under the auspices of UN, Department of Social Affairs; also Seminar on Urbanization in India, held at the University of California at Berkeley, USA, in 1960.

†THE STATESMAN : March of the City, issues of May 22, 23, 24/1962.

¹⁴. 'March of the City IV', Statesman issue of 25 May 1962.

"Instead of working together and cooperating with one another to get as much as possible out of an external market, they have become competitors in the supply of labour over the demand of which they have no control. Consequently the community of interest which used to bind the whole village is fast disappearing under the exigencies of competitive wage-earning".¹⁵

6.5 The case of small village communities at the periphery of a large urban complex is equally difficult because here the community exists in a sort of no-man's land; they would not want to become part of the city, yet they depend upon the city and the city to an extent also benefits from them. And although they earn their livelihood from the city, they are neither part of the city nor are they interested in its well-being. They suffer from divided loyalties; they prefer their villages for residential purposes, while they earn their livelihood from the city to whose economy they hardly contribute anything in the way of taxes or revenues.

6.6 Recently a candid survey of the living conditions of such people was carried in Delhi. Analysing their social and cultural problems under the series. "The Other Half", the following quotation from the Statesman,¹⁶ sums up the situation rather well among the building workers from rural areas of Rajasthan.

"They are essentially rural in outlook and even as they live in the heart of a modern city they observe their traditional mode of living, in small huts that have no electricity and water, with panchayats wielding quite as much influence in their new homes as they did back in the villages.

"They, like others, are people who come to Delhi to make a living, a proud people who would not accept help from an outside agency. With jobs scarce in their rural homes, they dream of accumulated wages, a dream that never comes true. In time relations too will come over, to add to their problems."

"In the city they miss the sympathy and the understanding which their small village communities offer. They find no social organisation to replace what they have lost. Of necessity they end each working day in the catacombs of their own despondency, their own little shells. They are not even aware of the social benefits, few as they are, which the city provides, and one had the feeling that even if they did they would not claim them."

6.7 The other group of people which emerged from this survey were literate (and even educated), but semi-skilled or skilled the not-so-white collar workers. About them :

"They are the not-so-white-collar workers and the semi-skilled worker whose lives are

generally bedevilled by the temptation to fall for status symbols. Their lot is the more pathetic because, being literate they are in touch with the advances that the city makes, not all of them noticeable on the surface. Civilization of a sort has penetrated into their humble lives. Their love of false social values, which in most cases takes the form of a dowry for a daughter's marriage often leads them to money-lenders. It is among them that one finds the most resentment".¹⁷

7. URBAN SUBURBS

7.1 The nature of urban sprawl known sometimes as the 'suburbia' in the countries of Europe and North America is qualitatively different from its counter part in India though there may be some notable exceptions (e.g., Bombay or Madras). But in many ways problems created by this urban sprawl are similar. The flight of people to the periphery of the town has come into being primarily as a reaction to the un-hygienic congestion within the central areas. In the last fifty years, it has become more and more feasible, thanks to industrial progress and improvements in technology. People have often said that Hell must be similar to the core of a modern metropolis. Lack of open spaces, amenities, too much of congestion, traffic hazards, air pollution, inadequate schools, etc, seems to have been the causes most responsible for forcing people to move out to the outskirts of a city, where there is space for children to play and the air is at least comparatively fresh and clean. But there are others who think "Hell is a Suburb".

7.2 The flight to the suburbs perhaps was inevitable due to unscrupulous living conditions following the early period of rapid industrialization in the European countries and in America. There are innumerable examples of dreary slums, dingy apartments and most miserable type of industrial housing. Manchester, Birmingham, Lille, Milan, Turin and many cities of Europe still provide the terrible examples. People and planners have been trying since long, to devise means and methods of escaping far from this maddening crowd.

7.3 Among its later day exposition has been the 'garden city movement' of Ebenezer Howard which has its adherents and disciples almost in every country. More recently, it has eventually emerged in the form of new towns around some of the metropolitan cities. Several Architects and planners from Frank Lloyd Wright to Le Corbusier have tried to find out a way to effectuate a more intimate inter-action in the living pattern of people with nature. As a result of all these efforts, suburbia has now become an important component of the urban scene in the industrially developed countries. From 1950 to 1957, 97 per cent of the national growth of America took place in 174 standard metropolitan areas. But as of 1950, of the thirteen largest US Metropolitan areas, the central cities contained only about 57 per cent of the metropolitan population while the remaining 43 per cent

¹⁵. Ibid P. 2

¹⁶. The Statesman, Delhi, 20 May 1962.

¹⁷. For a detailed description and analysis of the newly arrived migrants see the series of article : The Other Half - Statesman : New Delhi.

were living in areas outside of the central city. It is remarkable to note that share of the central city has declined from 69 per cent to less than 53 per cent by 1960.¹⁸

7.4 It has been said that man has been moving to the suburbs ever since he created the urbs. "To me the country on the outskirts of the city is sweet". And it is a small wonder that the city centre in spite of its many sided attractions, have been a place compared to "hell". The Industrial Revolution of the 19th century made it worst. "Hell is a city much like London" wrote Shalley, "a populous and smoky city". By the early 19th century, middleclass suburbia was fast becoming a reality in England, but it is in the 20th century that suburbia has become a particular kind of American phenomenon. Today in 1960, in this area live one third of the entire United States population—roughly 60 million people who represent almost every segment of population. It was estimated that in the present decade, almost a million acres of rural land is swallowed annually by urbanization in the United States of America.¹⁹ The automobile has made suburbia cling into longer and farther areas. Particularly after the Second World War, new settlements have spread across acre upon acre; small shabby old helmets have been inundated by the new comers and the suburban way of life has come to stay.

7.5 Although some have called suburbia as a new frame work for the traditional American theme, yet there are others who consider it as a dream unrealised. The suburbia has its own set of social problems of conformity. "Many a suburban housewife wishes that her husband had earned more money; every mother with young children wishes she had more help; small boys wish there were fewer days at school and small girls wish there were fewer small boys". The resulting pattern is often boring, emotionally unsatisfactory and aesthetically inadequate. No wonder many serious thinkers termed the suburb, as living Hell; Dean John Burchard of Massachusetts Institute of Technology's School of Humanities, who is considered to be one of the America's foremost architectural critic stated:

"Most urban peripheries may never become even orderly. The political, economic and social elements are too small, too discreate, too lightly rooted. Many people who live there act as transients, men of those who build the establishments are absentees. Among these 'nomad', public opinion rarely comes to a focus. The average result reflects individual apathy in matters of taste. Most entrepreneurs of the periphery have no personal desire for beauty and no conviction that it will reap profits. The public, in turn displays no resentment, applies no pressure against the ugly and the vulgar."

"The periphery has not learned how to organize itself in the communal self-interest nor even how to achieve economic stability and political influence, decent schools, hospitals, transportation, and a sense of neighbourhood and co-operation . . ."

7.6 There are other consequences of the suburbia. The movement of a large number of people, as it has happened in the USA, is in turn followed by certain types of commerce and business. Many an insurance company and some of the sophisticated firms have found out suburban locations in New Jersey close to the city of New York and have actually moved out of the central city to the suburbs.²⁰ As a result, tax income of the central city has gone down; public utilities are thereby neglected; parks are then ruined, blight begins to increase; finally more areas become derelict and slums expand. Office and industrial buildings deteriorate, while traffic congestion on the inadequate streets goes on increasing with every passing day. Finally, the whole municipal system becomes inefficient because many a citizen has lost interest in the central core. People living in the suburbs do not care for the central core where invariably they earn their livelihood. They do not bother about the city park or about the metropolitan opera because they have, in their own sweet home in a garden suburb, a small patch of garden of their own, and for the cultural activities, they can always rely on a TV show right in their own living rooms. The gadgets of the 20th century have not only taken the druggery from the house-wife, but has made her rather self-centred so that rarely does she care for anybody. Love thy neighbour has become a holy sermon of the by gone days. In many localities, neither do they know nor do they care for their next door neighbours. They may have their own circle of friends and acquaintances which, thanks to the automobile, may extend to places anywhere from 15 to 30 kilometers away from where they reside. Local intimacy, citizen participation in any affair and problem of politics are fed to the suburbanite through the channels of Radio, T.V.²¹ and Newspapers rather than in person. This precludes most possibilities of intelligent and mutual conservation. There is hardly any time to think or indeed even to relax and reflect. Actually for recreation and short vacation an American family prefers to drive 150 to 300 km (100 to 200 miles) out in some other but probably similar area; vacation indeed becomes more of a race than a chance to relax, recuperate and reflect.

7.7 The pattern of development in the suburbs of US or Europe is generally of a low-density single-family dwelling type. They have, of course, the schools and green areas and their own garages and, if affluent enough, their own swimming pools. However, for the larger community, this is actually an un-economic use of land. In many ways, it may even be considered antisocial. It certainly is not conducive to the development of any healthy community feeling or any affection for their own city. Identical houses on standard size plots in featureless neighbourhoods, wasted land, a destruction of time benefits of the 'country' and a negation of the qualities of the city, such is the form generally of a typical suburb. The pattern of scattered patches of small individual plots with their postage stamp size lawns more often contains the wreckage of dreams for a better life.

7.8 Comparison of this urban sprawl in Asia would be cruel except with certain well-to-do, high-income suburbs of Bombay, Calcutta and possibly

¹⁸ Some cities like Boston, Pittsburg and Los Angeles contained only 34 per cent : 30.6 per cent and 45.1 per cent of population residing in the central city. For a detailed discussion see by Raymond Vermons "The Changing Economic Function of the Central City"—Committee for Economic Development (1959) and Donald J. Bogue, "Population Growth in Standard Metropolitan Areas".

¹⁹ See TIME Magazine, Vol. LXXV, No. 25, dated June 20, 1960.

²⁰ *Ibid.*

²¹ Dean Burchard, Must our 'CITIES BE SO UGLY?' Vol. 243, No. 48 POST dt. 2nd December 1962, pp 52-58,

Hyderabad. On the whole, the problems of suburban growth in India are different and situation more distressing. In a policy statement on Urban Renewal, the American Institute of Planners have pointed out that unregulated development not only creates blight in advance in the pre-urban hinterland, but in some cases, impair or even disrupt the natural regime upon water supplies and similar resources defined.²¹ We all know that indiscriminate felling of trees around an urban area (e.g. Delhi) accentuated the extremes of an already hot and arid climate and have considerable effects on the city's micro-climate. Conservation in the renewal sense of the word, therefore, should not be restricted to the urban neighbourhood alone, but to the larger surrounding region.

8. URBAN CONGESTION REMOVAL

8.1 A number of remedies for removing the urban congestion and ameliorating the condition of slum areas, have been suggested. From Petrick Geddes to Ebenezer Howard, Edwin Lutyens to Frank Lloyd Wright and Le Corbusier, ideas for the creation of green belts, garden cities, satellite towns, urban clusters, dynapolis—all have been proposed and some partially realized. Some of these ideas have actually been tried, and a few at least with partial success. But all said and done, it has not been found possible to control the growth of the metropolis, let alone to stop the urban sprawl. In this effort interesting suggestions have been advanced by persons like Le Corbusier (City Residue) and Frank Lloyd Wright (Broad Areas). In his lectures on Future of Architecture, Frank Lloyd Wright stated.²²

"The dividing lines between the town and the country are even now gradually disappearing as conditions are reversing themselves. The country absorbs the live of the city as the city shrinks to the utilitarian purpose that now alone justified its existence".

In fact, Wright believes that it is the improvement in technology which has, in the main, induced the city dweller to move out from the central city to its outskirts. He thought that paradoxically, the machines will enable all that was human in the city to go to the country and to grow up with it.

"The sense of freedom in space is an abiding human desire because the horizontal line is the line of domesticity—the earth line of human life". Wright's ideas on "Broad Acre City" are well-known.

8.2 The ideas of Le Corbusier have become famous and have influenced urban design to a large extent. The idea to bring the "country green" right into the urban core itself is one concept which has appealed to many. On the other hand, there are

many who feel that 'City Planning' alone is not enough to meet the urban pressures encountered in the twentieth century. Indeed, it has not been found possible to control the size of sprawl of the cities either in this country or elsewhere.

8.3 Several suggestions have been made suggesting that the future of the city lies in a regional attempt to integrate rural and urban planning; for the planned development of the entire region. In this connection, the following lines from an article on the "Cities of the sixties" by Victor Gruen will be of interest.²³

"The urban pattern too will consist of urban cells and aimfully juxtaposed constellations of such cells of different sizes and different shapes. Each urban cell formation will contain various functions from living quarters to places of work, the achievement depending upon the size of the cell. Groupings of cells will form clusters; grouping of clusters, constellations, and many such constellations, the galaxy of the metropolitan area. Each member of this cellular system will be defined in shape and size. The metropolis grows by the addition of new cells and cluster formations until the communication lines became so extended that the centripetal force of the solar body, the urban core, becomes ineffective. At that time, new solar systems of urban clusterization will be born".

8.4 In this regard Lewis Mumford, one of the foremost urban critics on urban planning and architecture of our time, advises that there should be a limit to town growth. The "town cluster" is also his solution.²⁴ Although this concept would have to be adopted to the realities of a given situation, market system, the economic base and other social and cultural factors, yet it serves as a useful starting point in the search for the new form of the modern metropolis.²⁵

8.5 Lewis Mumford advocates that the great cultural institutions of the modern metropolis like the libraries, universities, research centres, museums, might lead the way in providing "regional diffusion" of cultural values and putting man at the centre of all activities. Others have also elaborated on the role of cultural institutions and universities as regeneration of regional economic life²⁶. Finally to quote Mumford again.

"Such a change would restore the discipline and the delight of the garden to every aspect of life; and it might do more to

²¹. Another example of regional commerce and service, is the Northland and Eastland Shopping Centres near Detroit Shopper's world in Farmingham near Boston, Massachusetts, USA.

²². Frank Lloyd Wright : 'The Future of Architecture' : The Architectural Press, London 1955, pp. 173-177.

²³. Victor Gruen, "The Cities of the Sixties",

²⁴. Lewis Mumford, "The City in History" (Harcourt Brace and World Inc., New York, 1961).

²⁵. Using the examples of the electric grid and the widely spread library-loan system of USA, Mumford suggests that the diffusion of resources can bring individuality back to the local centre—one of the most vexing problems facing urban planners and civic designers. This would be concomitant of "the new urban constellation" as Mumford pointed out in his new book "The City in History" a sequel to his earlier and famous book on the "Culture of Cities".

²⁶. For example see Christophor Tunnard : 'The City and Its' Interpretations', AIP Journal ; Vol. XXVII, 4th November 1961.

balance the birth rate by its concern with the quality of life than any other collective measure".

This may sound to be an idealistic approach to the problem. On the other hand, at least some partial solutions could be found by using the existing means and tools that are available to the planners. In the first place, zoning and land use planning to control premature development at the urban periphery and to preserve land in agricultural greenbelt, is one thing which could be employed. Of course, the Master Plan for a given city is the first pre-requisite which, in turn should be the economic base and the patterns of land uses and the requirements of the foreseeable future.

9. ROLE OF CITY MASTER PLAN

9.1 It may be pointed out here that a Master Plan could bring about the desired overall objectives only when it is drawn within a regional framework ensuring a co-ordinated and complementary development of both the rural and urban areas within a given region. The suburbia *itself* may not be a bad idea but experience has shown that life in a suburb could indeed be dull and boring; that even the superficial peace and quiet could be artificial. There are people who like and admire the hustle and bustle of the crowded bazars and pine for it; to them garden cities, green suburbs, even areas of the original New Delhi will mean the death of the city²⁸. Besides, there are a number of serious economic and social problems in suburbia because of the stereotype existence which may even be considered as a possible deterrent to the society at large. Any development which is, to a great extent, formless, unbroken, uniform, could indeed be monotonous, emotionally exasperating, and aesthetically most unsatisfying. On the other hand, it is to be recognized that a large city offers a great deal of attraction and opportunity though some of these hopes may never materialize for the great many who converge on the city. In fact, a good deal of potential economic opportunity of the city is offset by relatively high cost of living prevalent in the city. Together with an inarticulate and expensive means of travel, the increasing congestion and blight with rising slums, all of this endanger decent and healthy living within the city. No wonder, human scale is lost. In the "urban misery" there is but little difference between the central area and the urban periphery, but the 'advance commitment' of the fringe actually jeopardize even the distant possibilities of a rational development.

9.2 It follows that any approach to deal effectively with the urban fringe has to be a simultaneous and comprehensive approach in which the core and the periphery both are taken into account. Unless the core is made more habitable and a pleasant place to live, the exodus to the fringe areas will continue. Unless the adjoining rural communities are not developed to a compatible level and, so far as they do not enjoy certain basic civic amenities (e.g. schools, shopping centres etc.) and a decent level of income, people will continue to flock in large number towards the cities.

9.3 It may not be out of place to identify here the approach and recommendations of the Delhi Master Plan towards the problem of "urban fringe".

(i) In the first instance, the plan for Delhi has been envisaged in a larger framework—that of the metropolitan area and of the larger National Capital Region. It has been suggested that simultaneous development should take place in the region and several other cities should be developed in order to counter-effect and counter-balance the attractions and the amenities which are at the moment mainly concentrated in Delhi, the central city of this region.

(ii) Secondly, specific recommendations have been made for a high priority development for the seven "ring towns" about 19 to 29 (12 to 18 miles) around Delhi²⁹. The idea behind the development of "ring towns" is to effectuate a deflection of population by providing jobs in manufacturing and in the federal government employment in these towns thereby inducing people to live and work in these "ring towns" rather converge on Delhi Urban areas itself.

(iii) Thirdly, around the urbanizable limit which itself has been defined only after a careful assessment of future population, economic base, land use requirements, etc., and unavoidable green belt of about one mile width has been proposed. The main purpose of this green belt is to preserve the agricultural character of the area at the urban fringe by means of zoning this area for agricultural and incidental uses at the urban fringe. Small farm houses could be made. But in each case, the covered floor area which could be built in such houses has been reduced so as to discourage none but the genuine farmer.

(iv) Finally, the Comprehensive Master Plan for Delhi does not stop at merely suggesting the development of "ring towns" and the provision of the green belt but it goes a step further. Incorporated in the plan is a scheme of development for the rural areas; the development of certain "urban villages" and "rural townships". Further, the plan for the rural area suggests provision of certain basic community facilities and educational amenities to a cluster of villages. Additionally, it is proposed to develop certain larger villages into "rural townships" with a list of industries which could be feasible in these "rural townships". On the other hand the so-called and so-designated "urban villages", which are 23 in number are to have certain type of industry, which though of a rural character, is at the moment, carried right inside the urban core.

10. Though the pressures of urbanization are rising with every passing decade and no one knows whether or not, and to what extent the proposals made in the Delhi Plan will be carried through and whether they will prove successful, yet it is for the first time in this country that an integrated approach has been made to rationalize the development of the city and the country as complementary to each other and not as one at the cost of the other.

²⁸. Jane Jacobs "The Death and Life of Great American Cities" published by Random House, November, 1961.

²⁹. Ghaziabad and Loni in UP; Faridabad, Ballabgarh, Gurgaon and Bahadurgarh in the Punjab and Narela in Delhi. For detailed recommendations see Chapters II, III and IV—also see pp.iii-iv of Preamble, Chapter II : Regional Aspects, Draft Master Plan for Delhi, published by the Delhi Development Authority, 1960.

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Value of Tenant Education towards Easing Management Problems in Government Housing**

by

(Mrs.) Marion Massen†

1. BRIEF BACKGROUND

1.1 This paper deals with the philosophy of preparing families to live in Government housing colonies instead of just moving them in and letting problems arise; the experience with such tenant preparation (techniques and evaluation of success) in the U.S.; and possibilities for adapting the experience in India as recognition grows that economics can result from tenant education and good management practice. Practice in India, in the majority of government-aided housing, is to (i) provide the housing; and (ii) take the names of candidates in the various groups for which it is intended; (iii) admit the eligible families, and then carry on with collection of rents as the main function of management.

1.2 In this fashion, largely, thousands of dwellings have been made available or are being built under the various Five-Year Plans. In few Government programmes has any attempt been made to broaden the concept of management to take cognisance of whether dwellings were suiting the needs of the people living in them, how the rents set related to incomes, whether revenue from rents was sufficient to cover maintenance, what management problems might be avoided with special treatment, etc. There is evidence of resistance to moving into government housing by some slum families and noticeable vacancy in many projects of rent delinquency and doubling up of families to pay the rent. These developments have indicated to thoughtful administrators as well as to those government officers who determine programme needs, that re-examination of policies might be useful. Such re-examination might well take into account the motivations of people seeking shelter; what they expect to receive for the rent paid, how the accommodations provided in government projects compare with what they have lived in (or desire), what unanticipated problems and difficulties may have arisen with the move-in to government housing and how the tenants have been affected. (Here review of any Indian surveys or evaluations of this nature that may be available.) Further, to be examined profitably, what steps might be taken to correct a situation that cannot creditably continue, whether, for example, preparing families to live in housing colonies under government management and working with them in certain ways before and after they have moved in, might not be helpful toward improving housing estate operations.

2. EXPERIENCE OF U. S. PUBLIC HOUSING AGENCIES WITH TENANT EDUCATION

2.1 A short description will be given of the development of public housing in the U. S. from depression days when families who became tenants had some virtues and patterns. During World War II period housing for war-workers brought together many types of families, and then during post-war period and "prosperity period" newcomers to cities, old people, and the many "income-less" people began to make up for major public housing population.

2.2 The tendency during early period; despite British experience, was for many local housing authorities to regard management of public housing as a rent-collection and maintenance operation only. Some cities, usually large ones, did include community centres and playgrounds as integral parts of their housing projects. The purpose was to bring tenants together for health and recreation and give them an opportunity to know their neighbours.

2.3 The real impetus toward tenant relations and tenant education started, however, with period when families from hill country and farm background came to big cities—southern Negro, hill whites, Puerto Ricans. Needs arose:

- (i) to inform people how to live in and enjoy multi-story apartment living since they had lived in individual shacks, sanitation, noise and in other different cultural pattern;
- (ii) to help them adjust to "conveniences" of the flats, flush toilets, laundry facilities, stoves;
- (iii) to help them with nutrition and health (well-baby clinics, T.B. examinations, inoculations, etc);
- (iv) to give them ideas for budgeting, so they would have money when rent became due;
- (v) to help mothers to become good house-keepers;
- (vi) to make "good citizens" of children of various ages, thereby preventing delinquency, reducing damage to housing project and grounds and thus cutting maintenance costs; and

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- (vii) to promote a sense of personal pride in living in public housing.

2.4 Ways of promoting tenant education along these lines

- (i) Tenant relations aides on project administrative staff.
- (ii) Tenant handbooks, explaining rules to new tenants, accompanied by demonstrations of new equipment they would be using.
- (iii) Enlistment of public and private health and welfare agencies—volunteer groups to teach budgeting, etc.
- (iv) "Demonstration apartments" worked up sometimes by longterm tenants; classes in home decoration and household management, to bring about exchange of ideas.
- (v) Tenant associations for adults.
- (vi) Boy and Girl Scout troops.
- (vii) Competitions for best apartment, best project, outstanding family.

3. POSSIBILITIES FOR ADAPTING SOME OF THESE TECHNIQUES IN INDIAN HOUSING ESTATES

- (i) Review of efforts already made in this direction (in Bombay, etc.)

(ii) USA experience for adoption to Indian conditions. (Realisation that though cultures differ, human needs to be reassured when put in new and strange surroundings; to have a friendly hand extended, to be understood—are universal and response to those needs have common base.)

(iii) Evaluation of usefulness of tenant education as aid to practical ends of rent collecting and maintenance cost reduction depends on new definition of housing management. This concept of housing management involves social management—reconsiderable concern with welfare of the families living in Government housing estates. It is conceivable that the repayment for such concern can be very satisfying; families provided with shelter they can afford and enjoy; better-appearing structures; low rent delinquency; and a record of improved housing conditions for a fair-sized segment of the population.

Rural Sociology in Relation to Housing✦

by

K. D. Gangrade†

1. INTRODUCTION

1.1 In India, failure to provide real houses to the people living in villages is the weakest link in our planned development. The First Five Year Plan made no provision for village housing and the Second Five Year Plan allotted only a sum of Rs. 6 crores to be given as loans by the various States to the villages which were to be included in the housing schemes. However, we became a little conscious of this problem and the Third Five Year Plan laid down that housing helps in raising the level of living, provides greater opportunities for work and becomes a vital element in the transformation of rural life. Yet, because of the sheer magnitude of the problem and its inherent difficulties, the task of improving housing conditions in the villages has to be viewed, as a part of the large scheme of rural development. Consequently, rural housing has been made intrinsically a part of community development and village planning. The specific programme of rural housing as such is intended to supplement the resources of the community development movement at the level of the block and the village by way of assistance in the form of technical advice, demonstration, provision of improved designs and layouts, better use of local materials and to a limited extent, provision of finance. Its essential object is to create healthy environmental conditions for all sections of the village population and for balanced development of rural life.

1.2 The plan clearly lays stress on the point that rural housing is basically a social problem and not so much an economic problem. It gives some indications that the latent potentialities of the village people should be harnessed to solve this huge problem. It is, therefore, essentially a problem of the people which should be solved by themselves with the help of internal and external resources available to them. In other words the main emphasis is on the 'self help' process to remedy the problems faced by the people. The problem, therefore, before us is how to make people conscious of this problem and organize them to take up this project on self help basis. This necessitates knowledge about the life and conditions of the rural people with special reference to their social institutions.

2. IMPORTANCE OF RURAL SOCIOLOGY

2.1 Rural Sociology is one of the social sciences which is specially concerned with the development of knowledge about the behaviour of human groups and institutions in the rural environment.

2.2 Rural sociology aims (i) to develop a broad, sympathetic understanding of the real needs and actual conditions of village and village people; (ii)

to appreciate the relationship between life and labour, wealth and welfare with people, since farming is not only an occupation but also a mode of living; (iii) to show as correctly as possible the unity of interest of rural and urban groups; (iv) to interest and stimulate workers active interest in the work of those agencies that make for better conditions in the villages; and (v) to endeavour to prevent all the workers from making that most common of all errors—the under evaluation of villager's own judgment of what is best for himself. In other words rural sociology equips us with the knowledge of rural social organization.

2.3 Rural Social Organisation in India is based on caste, kinship and territorial affinities. Caste divisions are regarded as permanent, hereditary and heirarchically graded. Caste governs to a large extent all social relations and all these relations are based on a set traditional pattern of behaviour towards each other. A great majority of the rural people are fatalistic and have great faith in the theory of 'Karma'. They attribute present miseries to their past deeds and rationalize the births in a particular caste or group as divinely ordained. The caste loyalties and fatalistic attitude of the rural people are great deterrents to progress not only in the housing sphere but also in the development of whole of rural life. These loyalties and attitudes are very much in evidence in the set up of houses in Indian villages.

3. HOUSES IN INDIAN VILLAGES

3.1 If one takes a journey to north Indian villages one will agree with the description of Baden Powel about a typical Indian village described in his book "Land Revenue and Tenure in British India". He describes a village as an aggregate of cultivated holdings with or without some waste area attached to it and usually it has a central site where dwelling houses are congregated with the lands of the village spreading round about the central site in a series of concentric circles. In some cases, small homesteads and farm buildings are found separately located on the holdings, though for better security and other reasons it is usual for the cultivator to stay in his home in the village dwelling area.

3.2 The dwellings of the people are strictly based on the caste heirarchy including the territorial divisions of various caste groups in the village. The close neighbourhood mostly consists of agnatic or cognatic kins belonging to a particular caste. It is interesting to find that the houses of the higher castes, viz., Brahmin, Rajputs, Jats, Thakurs, or Gujars are clustered together and centrally located on both the sides of the thorough fare of the village. Most of the houses of people belonging to lower castes like Chamars and Bhangies are located on the outskirts of the village. The physi-

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cal distance and locations of houses of different castes are demarkated on the concept of social distance. There are clean castes and unclean castes.

The touch of a member of an unclean caste, it is believed, will pollute a member of the clean caste and he will be required to take a purificatory bath. To avoid this situation the houses of the unclean castes are located on the outskirts. Their entry to houses of clean people for removing cow dung, etc., is so arranged as not to allow them to enter the house beyond the prohibitory area.

3.3 Most of the village houses are made of 'mud' walls with thatched roofs. There are practically no windows and ventilators. Houses have no smokeless chulhas. They lack privacy and have no bathrooms or latrines attached to them. There are no rules and regulations to govern the construction of houses in the village and as a result there is a very haphazard and unscientific development of house-building work in the village. This makes the communication in the village very difficult due to the existence of narrow streets and numerous small blind alleys.

3.4 Types of Houses

3.4.1 Oscar Lewis distinguished in his study of village life in northern India six types of houses according to their functions: (i) Baithak—a house or a room used by men only, for special purposes and for sleeping; (ii) Baithak and cattle enclosure—a baithak in which cattle are also kept; (iii) Ghar—house in which the women of a family live; (iv) Ghar and cattle enclosure—a ghar in which cattle are also kept; (v) Cattle shed—a shed in which only animals are kept; and (vi) Combination—a home in which baithak, ghar, and cattle enclosure are in a simple unit. He has also clarified the village houses into three types according to the material used in their construction: (1) Kacha—a house made of unbaked mud bricks; (2) Pucca—a house made of fired bricks; and (3) Kacha-Pucca—a house made of both types of bricks.

3.4.2 The sanitary condition in the villages is so bad that it creates a number of problems pertaining to health. The villages turn into a good breeding ground for mosquitoes during the monsoon season in the absence of pucca lanes and good drainage system. The villagers become easy prey to these insanitary conditions and fall sick. During active days of work specially at the time of sowing and harvesting season if this happens, it causes reduction in income considerably. There are some social factors which make a villager apathetic to housing.

3.5 Concept of a house

3.5.1 The main occupation of villagers is agriculture and most of the time is spent on the field working in the open air and sunshine, so important for maintaining good health. As most of the adult members are engaged on the agriculture operation, they return home fully tired after the day's work and neglect their houses and surroundings. Some time some villagers take an attitude that when they spend almost all of their time in the fields why they should take so much care of the house. To them house is just a place for night shelter.

3.5.2 The villagers take special care of their bullocks because they are the backbone of their lives. They are very much fond of their bullocks and take care of them like their children. This attitude makes them stay with the bullocks and sleep with them at night also that when necessary they can feed them. The housing structures are such that it is not easy to separate the men and the bullocks unless some kind of community shelter is built wherein by turn the villagers can take care of the bullocks.

4. RURAL OUTLOOK

4.1 The agriculturists tend to be fatalists as their work and prosperity depends on the kindness of Nature. Indian villager believes in 'Karma' theory and attributes all the situations in which he is placed to his past deeds in the earlier birth. This makes him slow to change and accept the things as they are. For instance, in a village a house which was totally declared unfit for human living was not vacated by the farmer on the plea that many of his past generations had lived in it and he in keeping with the past traditions and believed that his Karma ordained that he should remain there; if God would have destined him otherwise he should have been born in a family with a good house.

4.2 In some parts of India the disabilities of the lower caste go so far as to prescribe what sort of houses they should build and what material they might employ in the construction. For example a Harijan in a village was not able to build a good house because it clashed with the caste value. The problem was that the high caste people would not tolerate lower caste people to build a house of two-storeyed structure as it was the privilege of only higher castes. In Malabar the house is called by different names according to the occupants & caste, and people of inferior caste dare not refer to their own houses in the presence of Namboodri Brahmin in flattering terms except as dung heaps.

4.3 There are a number of under currents in the village society which hinder or facilitate change. It is reported by a health expert that the latrines were not installed in a village because the village women were against such a programme. Their plea was that they would be deprived of their social contacts and village gossip which they enjoyed in going together in small groups early in the morning to answer the call of nature.

4.4 As already stated the groups are based on caste, kinship and territory. These groups are sometimes cohesive while at other times hostile. The cohesive groups can be a strong force in bringing change through their members and leaders in the village. The groups can be used to implement the housing scheme by organising them into housing cooperative societies and persuading some of the leaders to accept new innovations in the housing structure and its designs to use their pressure on other members of their group to follow their leaders.

5. CONCLUSION

5.1 It is no doubt that the problem of rural housing is vast and complex. The village people may have neglected the modern architectural design of the village. But they have always given housing an important place in their lives. A good

house raises the standard and this is considered the most important investment and asset. The first choice of a farmer in his good days is to build, repair or remodel a house.

5.2 Two important ways to solve the problem are through education and finance. The education programme should consist of motivating people and giving them technical help. The financial programme should consist of giving subsidies, grants and loans. As already indicated it is not entirely a financial one but is a problem of creating a desire to improve. Once people are accustomed to poor conditions they tend to put up with them and become less enthusiastic to improve themselves, because the pattern of living, including housing, tends to be socially inherited and because they are part of the culture. It is only through the process and accelerated means of formal education through various medias of mass communication that the new ideas and higher standards become diffused and gradually replace the old.

5.3 In conclusion, it can be said that it is necessary for an adequate diagnosis of rural housing problem to study rural sociology to gain knowledge of the social structure and population composition of the rural community and an understanding of its behaviour characteristics and the social forces affecting them. A community has a certain personality, just as does an individual. The basis of this personality is to be found in its history; how it has developed, in the crisis and conflicts of the past; in the traditions and customs which it has inherited, and in its present folk-ways and attitudes. In as much as the community is composed of various groups, castes and classes, and outstanding leaders, it is also important to know what friendly relations or social distances exist between them and what are the conflicting forces operating in community control. This will necessarily involve the analysis of the personalities, ambitions and motives of the leaders in various groups and factions.

Rural Research-cum-Training Centres in India— Their Functions, Working and Progress**

by

Shri B. R. Narayana Iyengar†

1. RURAL REDEVELOPMENT

1.1 Mr. Chester Bowles, the American Ambassador to India in his book "The Makings of a Just Society", which is based on a series of lectures delivered at the Delhi University during 1963, says "By 'Rural development' I mean not only agricultural expansion but the growth of small industry, training centres, improved communications, rural electrifications, public health, population control centres and even the stimulation of rural awakening." Rural development can hardly gain dynamism without rural awakening. Rural awakening is not complete if the villager cannot identify his aims of living with the political and economic aims of the country. Amelioration of the poor housing conditions under which 80% of the population live in our villages should receive priority consideration from the point of rural awakening and better living environment has to be provided. Mere building of roads and other amenities is not an adequate incentive for creating a social change though it is nevertheless essential to some extent in promoting it. What is needed is a domestic revolution—in addition to literacy and education drive—a drastic change for improvement in the domestic environment which can consequently stimulate a desirable social change in the present ways of living. Thus a conscious attempt towards moulding, modelling or remodelling of housing is imperative.

2. ATTITUDE TO RURAL HOUSING

2.1 It would be incorrect to say that the present habits of a villager are backward in themselves as he offers several justifications for defending his present way of living. Lack of ventilation is attributed to reasons of privacy and security. Promiscuity of cattle within the living house to their security and also because he considers the cow as "Laxmi, the goddess of wealth". This is justifiable as every agriculturist all over the world regards the land he tills as God since it is his source of wealth, and the cattle which ploughs the ground is equally sacred. His hatred for latrines is justified because he wishes to remove obnoxious matter away from his premises and because many times a village house does not have sufficient open plot attached to it nor is there adequate water supply conveniently available to think of sanitary disposal.

2.2 Though a villager might have been to a urban centre and seen better conditions or ways of living, he does not place a priority on improving his housing conditions because he has other priorities like the education and marriage of his children and other religious ceremonies. Funds

permitting, he would certainly like to have a better house. Thus frustrated he is, resigned to the existing conditions.

3. PURPOSE OF RURAL HOUSING POLICY

3.1 Under the colonial rule, the development of villages had not kept up with the speed of urban development, and had remained backward. With the advent of independence the Government of India have initiated an energetic drive for establishing economy and overall national development, of which village housing occupies no insignificant place. The need for improving the economy and living conditions of the villagers serves to check migration of large numbers from rural areas to urban centres. Though it does not mean that urban growth has to be checked, a study of the effects of distribution of population in other countries shows that it is not advisable to increase the urban rural population ratio beyond 60:40 so that agricultural economy is not strangled. Secondly, rural development is considered essential, as without it there will be no market for the manufactured products of an urban industry.

3.2 The socio-economic development of any country can be assessed with regard to the prevalent housing conditions. Housing advancement indicates the progress achieved, cultural level attained and the general welfare of the people. A dwelling may be primarily considered as a shelter or protection against adversity of weather and the considerations of its design for these requirements satisfy some of the physical requirements only. If it is agreed that human lives are influenced by environment, of all the things that influences their temperament and living enjoyment, housing can be named as the foremost, because it is the house that provides a constant environment, for wherever one may go out—for work, business or recreation—one always returns home for rest. Thus it is essential to relate housing to social needs, industry or work and recreation.

4. HOUSING AS A HEALTH PROPOSITION

4.1 Again, housing can be reckoned as a health proposition. Housing conditions affect not merely the physical health but the general standard of life. As early as in the year 1885 the British Ministry of Works, Housing and Supply appointed a Royal Commission to go into the question of appraising the effects of bad housing. Their revelations are interesting. They found, upon the lowest average, every workman lost 20 days in a year due to simple exhaustion and inability to

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work on account of depressing effects of bad housing. Excess of mortality from pulmonary diseases of children was 40% greater in back to back houses than in the ordinary dwellings. Several medical reports on the health of communities show that diseases are both prevalent and more fatal in insanitary houses than in sanitary ones.

4.2 The royal commission opined that the insanitary conditions of a house were so frequently due to the character of the people living in it that it was sometimes difficult to separate the cause from effect. Housing conditions were responsible for producing or aggravating illness. Another interesting revelation was that the main cause for pauperism could be attributed to irregular or casual employment. They specified bad housing conditions as the next cause resulting in disease and demoralisation. So, full development of family life and community is not possible if housing conditions are unsatisfactory. Thus we see that better housing is essential to stimulate the socio-economic development in a community as it is a means through which urge for better standard and dignity of life can be brought about.

5. MAGNITUDE OF THE RURAL HOUSING PROBLEM

5.1 The Government of India rightly gave emphasis to overall rural redevelopment when it initiated the Village Housing Projects Scheme keeping in view the 54 million rural houses in the country, of which nearly 50 million were either to be rebuilt or substantially repaired. (figures according to National Sample Surveys conducted during 1955). To this we may add annually some 2½ lakhs of houses per year due to increase in population based on the decennial increase of 1.25% during 1941-51 after neglecting urban migration and other aspects. Assuming that about Rs. 2,500/- is required for building or rebuilding a house it is easy to gather that without bringing in the rural people into the rebuilding programme on the basis of "Aided Self Help" the housing programme would never succeed.

6. ORIGIN OF RURAL HOUSING REGIONAL RESEARCH-CUM-TRAINING WINGS

6.1 To give more appropriate thought to the problem of rural housing, the National Buildings Organisation, Ministry of Works, Housing and Supply, in coordination and with the aid of Ford Foundation established six regional research-cum-training centres attached to the respective Engineering Colleges at Bangalore, Anand, Calcutta, Delhi, Chandigarh and Roorkee.

The Rural Housing Wing at Bangalore serves the States of Mysore, Madras, Andhra Pradesh and Kerala. Madhya Pradesh, Maharashtra and Gujarat are served by the Anand Wing. West Bengal, Assam, Orissa, Manipur and Tripura by the Calcutta Wing. Delhi and Rajasthan are assigned to the Wing at the School of Planning and Architecture in New Delhi. Uttar Pradesh and Bihar are catered to by the Roorkee Wing. Jammu & Kashmir and Himachal Pradesh are covered by the Chandigarh Wing.

6.2 Organisation

Each of the Wings is headed by a Director : assisted by an Architect-cum-Planner, Assistant Engineer, Research Officers, Socio-Economist, Supervisors and Junior Engineers who form the

technical staff. The staff position varies with the different Wings depending on the set up of the colleges and local conditions.

The establishment of the Rural Housing Wings took place during the beginning of 1959 and the Wings are being financed by the Ford Foundation of U. S. A. The National Buildings Organisation of the Ministry of Works, Housing & Supply is having overall control of these Wings. A Central Advisory Committee consisting of representatives of the Wings and various research organisations, with the Director, National Buildings Organisation, as its Member Secretary, meets twice a year and coordinates the activities of the various Wings. The work of each Wing is again guided by a Regional Advisory Committee for which the Director of the Wing is the Secretary, the other members being the Director of National Buildings Organisation, Development Commissioners and Heads of the Rural Housing Cells in each of the States served by the Wing. This Committee also meets twice a year normally.

6.3 Functions

The functions of the Wings are three-fold; comprising of training, research and demonstration.

6.3.1 *Training* : Any amount of education of the villager will not give direct dividends if the administrative or technical personnel engaged in rural housing development are not able to bring a vision to the villager as to what they can accomplish for him and for his family through improved housing. It is only when such a desire is roused he will have a powerful incentive and seeks to move with the changes in social and economic sectors.

For this purpose the personnel working in the community development blocks need proper orientation to the philosophy and objectives of the planning policy of government. With this purpose Orientation Courses are organised for Engineering Supervisors, Junior Engineers, Village Level Workers and Block Development Officers. The Engineering Personnel are given intensive orientation during a three month course regarding village planning and house design aspects and are trained to prepare redevelopment project on a standard methodology. The scope of improvement of improving indigenous building materials and methods of construction and the experience of the Wing in these matters is also made available to them. Over 1000 personnel have been trained all over by the six Wings so far. Details are furnished in Appendix I.

The training programme could gain more momentum if only the State Governments deputed their full quota of trainees. There have been shortcomings either because the Block personnel cannot be released from their work on account of pressure of work, or since some times trainees of the category of Block Development Officers and Village Level Workers are not deputed on the grounds that the present community development drive entrusted to them is mainly to secure results on the agricultural front. Several attempts have been made to communicate to the State Governments, the need for bringing trained administrative personnel in contact with villagers so that they act as effective extension agents in promoting better living conditions through housing. Housing will create a personal interest and pride in one's family

that this can stimulate the interest of the villager and encourage his sense of participation in other spheres of economic development. It is necessary that we should establish a sound economy and worthy living conditions, since we have to race with other underdeveloped countries who are turning over a new leaf in recent times, mostly after the end of the Second World War. The Central Advisory Committee during its recent meet has thought of organising courses for M.L.As., Panchayat members and top technical officers to gain the objective of proper orientation.

6.3.2 Research: The aims are two fold. (i) Purchasing capacity of the villager is so low that he cannot afford to build his house with superior materials of construction. (ii) Huge programmes of construction in irrigation and hydro-electric works, industrial buildings and other important structures continue to consume traditional building materials like stone, burnt bricks, lime, cement, high grade timber, steel, etc., and the demand for these materials has been almost exceeding present production. Out of the above arises a need for propagating research work done already by the several research organisations both inland and abroad in the use of improved indigenous building materials. The research sections attached to the Wings are as a link between basic research and its acceptance in the rural areas.

During these five years the Wings have made a good attempt to put to experiment certain techniques based on research.

6.3.2.1 Rural Housing Wing, Roorkee: This Wing has experimented on soil cement construction with 5% cement and found that it is strong enough for residential buildings and works out cheaper than burnt brick construction. For unimportant structure like godowns, grain stores, work places, cattlesheds, 2½% soil cement construction is deemed adequate. Rammed cement stabilised soil construction is found to be superior to soil cement blocks made in hand presses, but the form work is rather expensive. About 15 different plasters, each costing about the same 1:4 cement sand mortar, have been tried for protecting soil cement walls with less percentage of cement. One such mortar is 1:5:7:7 (Cement:Lime:Surkhi:Sand). The same plasters are also being tried on mud walls. Doubly curved plain concrete tiles have also been tried which have proved economical. Heat transmission is much less than in the case of G.I. or asbestos roofing. Tray shaped or box shaped burnt clay blocks 30 cm×22.8 cm×10 cm. of skin thickness of about 2.5 cm (an inch) have been developed. The hollow portions were filled up with clay and tested, and a crushing strength of over 30 tons on 30.48×22.86 cm (12"×9") area or 43.75 kg./sq. cm. (40 tons per sft.) was obtained.

6.3.2.2 Rural Housing Wing, Chandigarh: At the Chandigarh Wing rammed earth or machine compacted block construction with 1.5% cement & 1.5% lime, or 3% cement soil mixture has been developed. 5% cement soil bricks have been used for foundation, with coal tar and mud mortar joints. Foundation bed was prepared with compacted soil, stabilised with 5% lime. Fire resistance to thatch roof has been tried. The treatment consists of first dipping the thatch in 10% CuSo₄

solution for two minutes and subsequently treating it with 30% solution of soda silicate (commercial). For making it waterproof the exposed surface of thatch is plastered with 6 mm (¼") non-erodable mud plaster and finished smooth. The cost of treatment works out to Rs. 1.60/sq. m. (Rs. 15/100 sft). Use of 5% to 15% coal ash has made it possible to replace 1/3 cement required for stabilizing different soils; especially, the properties of clayey soil are improved thus.

6.3.2.3 Rural Housing Wing, Bengal Engineering College: The research at the Wing in the Bengal Engineering College has been on vitrification of mud or brick-walls. Mud walls stabilized by cheap chemical stabilisation are under trial.

6.3.2.4 Rural Housing Wing, School of Planning and Architecture, Delhi: The special item of construction on which research has been done at Bhawanpura, Laboratory village, are noted below.

(i) R. C. frames with 5 cm×2.5 cm were provided with rebate to facilitate fixing of hinges which have worked out at Rs. 2.9/m (Re. 0.90 per rft) against Rs. 6.58/R m (Rs. 2/rft) for orthodox wooden framed doors and windows.

(ii) Manufacture of reed boards was undertaken from locally available reeds and through local labour with the help of a simple mould. These boards can match the patented jax board for all purposes and the cost works out to Rs. 2.70 sq m (25 P. per sft) against approximately Rs. 5.40 (50 P.) at site through outside agency. The boards have limitations regarding resistance to fire and water proof quality. The possibility of making them waterproof by treating with Shalikote is being investigated. For the present, a layer of thatch, replaceable every two years is advocated for rendering it waterproof.

(iii) Soil blocks 30.5 cm×15.7 cm×10 cm (12"×6"×4") with 2½% cement costed Rs. 40 per thousand. These have to compete with stone which is readily available. The blocks are found not to pick up mud plaster though they can take fairly a good load. So far walling of these blocks has borne well during monsoons the load from 10 cm thick Burnt Stone Slab roof, topped with a layer of 7.5 cm lime concrete.

(iv) In addition studies have been made on the methods of effecting savings of material by omission of foundations for partition walls and by reducing foundation dimensions to the best extent practicable.

6.3.2.5 Rural Housing Wing at Anand: Experiments have been conducted at this Wing on :

- (i) Use of jax boards for walls and roof.
- (ii) Pressed blocks from earth.
- (iii) Soil cement blocks.
- (iv) Mud walls.
- (v) Waterproof mud plaster.
- (vi) Reinforced brick work and
- (vii) Precast R. C. beams and slabs.

An experimental house with 33.75 cm (13¼") square brick piers with panel walls of jax board with local wood framing and 1.9 cm (¾") thick

cement 1:6 plaster was put up with cement blocks on North and South with only ordinary soil blocks on East with outside face plastered with waterproof mud plaster. Main rooms were roofed with jax board with local wood framing supported by R. C. C. precast trusses. The roof was plastered on both sides with 1.9 cm (3/4") thick 1:6 cement mortar. The verandah roof was of R. B. C. 7.5 cm (3") thick with 1/2" bars (12.5 cm (5") C to c main steel and 25.4 cm (10") c to c distribution bars.

The idea of the above experiment was to test conductivity of the jax board and soil block wall. The house has proved thermally cooler when compared to outside conditions. The roof showed some cracks and the same was repaired effectively with bitumen washing and sanding.

It has been found that jax board walls are costlier than both soil block and soil cement block walls. Burnt bricks are proved to be cheaper and economical. R. C. C. members for roof, doors, etc are found essential because of termite nuisance.

Some new specifications tried in Khan Kuva laboratory village of the Wing are :

- (i) Cement concrete 1:3:6 pillars as framing and cement soil blocks 5% for panel walling. Roof of prestressed ribbed slab on prestressed purlins.
- (ii) Prestressed columns as framing and soil walls cast in situ as panelling. Roof of R. B. C. on prestressed purlins.

The first specification was found good. Leakage was observed in the roof and walls and waterproof plaster was damaged. It was found that an R. C. slab should not have been provided over a weak superstructure. The building was protected suitably by inserting 35 cm (14") square brick piers to support the beams.

6.3.2.6. *Rural Housing Wing, Bangalore*—The following experiments have been undertaken :

Investigations on manufacture of an indigenous brick-master; production of bricks with admixtures of light weight aggregates like cinder, hay, etc; strength and durability of asphalt stabilised structures; asphalt stabilised plaster for mud walls; doubly curved plain concrete shells and surkhi concrete shells; waterproof course with rammed 5% soil cement layer topped with 1.2 cm (1/2") to 1.9 cm (3/4") thick cement mortar plaster 1:3 in 1% soap solution.

Treatment of local timber with sylix liquid for antitermite measure and the use of the same paint for rendering walls waterproof.

The Wing has come to some useful conclusions regarding the advantages of soil cement blocks and regarding protecting external walls of a rural house with asphalt (1%) bricks backed with raw bricks in American bond (*i.e.* 4 stretcher courses, fifth header course in bitumen brick). The thicknesses of walls have been just one brick against two bricks or more usually insisted in villages.

The research relating to roofing was taken up in the first group of buildings. The roof was laid with cuddapah stone slabs, joints being sealed in

cement mortar, on "matti" scantlings treated with tar at supports and the remaining portion being wood oiled. The idea was to replace the surkhi water proofing course conventionally adopted, by a 7.5 cm-6.3 cm (3" to 2 1/2") soil cement layer, top being plastered with cement 1:6 with 1% soap solution. Such a layer was thought of, since the quality of lime in the rural areas was poor and also the quality of surkhi depended largely on selection of proper clay and reactivity with lime. An experimental waterproof roof similar to the above was laid in the premises of the college on a bamboo grid work which has withstood the adversities of weather for nearly two years. But it has been found recently that some cracks have developed causing leaks on account of the differential expansion of slab and soil cement layer. Also the locality is found to be a termite infested area and some parts of timber have shown signs of being affected. The waterproof course is being replaced with a soil bitumen layer. The timber has also been painted, with sylix and the termites have been destroyed as observed.

The main problem of a rural house is the roof. It has to be light on account of the structural limitation of the walling material adopted. The use of asbestos sheet has a limited scope on account of its cost and thermal considerations. Mangalore tiles have come to stay. The manufacture of pot tiles in rural areas has been practically extinct. The National Buildings Organisation has developed asphaltic bitumen sheets manufactured from bitumen and paper felt, which are light, easy to fix, non fragile, resistant to attack by fungi or vermin corrosion proof, bad conductors of heat and completely waterproof. These, as such, seem to be an immediate answer to the demands of rural areas.

7. DEMONSTRATION AND EXTENSION

7.1 The National Buildings Organisation desired that each of the Wings should put up eight demonstration units to try out and propagate new techniques. The Ford Foundation made available a sum of Rs. 10 lakhs approximately during the third Five Year Plan period and each wing was required to spend about Rs. 30,000 per year for the work.

7.2 The proposals submitted by the Wings for construction of demonstration houses were based on certain instructions given by the Government of India. It was fixed that the demonstration houses should not exceed Rs. 3,000 each including cattleshed and latrine. The plot size should not be less than 167 sq. m. (1800 sq. ft.) and this was to be obtained free from the Panchayat or villagers. The houses were to be constructed subject to their disposal on sale, or hire purchase system, loan being recoverable at interest fixed for loans under Village Housing Projects Scheme in a period of 20 years. The buildings were to be under observation for a period of two years during which period the occupants would have to pay rent.

7.3 A laboratory village was selected by each wing in some nearby State served by them so as to fulfil the above requirements. The project proposals sent up were scrutinised by an expert committee and sanctions were accorded.

7.4 The Wings have completed their first quota of buildings. Only construction of cattlesheds and latrines are under progress at the Bangalore Wing. The second set of demonstration buildings also has been taken up by the Chandigarh, Calcutta and Anand Wings. The Bangalore Wing has submitted a project for construction of demonstration buildings-cum-hostel accommodation for trainees and is negotiating for the required sites. Roorkee and Delhi Wing are finalising the studies for preparing project for the second set of demonstration houses.

7.5 When the first set of demonstration buildings was initiated at Suradhenupura, laboratory village of the Wing in Mysore State, it was found that participation of the villagers—even the prospective owners—was not forthcoming. Hence the work had to be entrusted to contractors, and only experimental specifications were tried departmentally. The work being not profitable it was only with great pursuance that the contractors completed the main buildings. The villagers would participate now and then, that too only if wages were paid. They were having immense doubts regarding the workability of new specifications tried. Gradually as the buildings stood weathering for over one to two seasons they were convinced of the advantages of the new techniques. Now more people in the village are showing some inclination to go in for such houses. The lack of participation was mainly due to the inability of the villagers to spare time because they had to go out for their daily earnings.

7.6 The Wing took up an experimental school building on the basis of aided self-help. The building consists of two rooms of 6×4.5 m

(20'×15') each, a store room 1.52×2.13 m (5'×7') and a front verandah 1.82 m. (6') wide and was estimated to cost Rs. 5,600. The Panchayat and Taluq Board contributed Rs. 500 and Rs. 2,000 respectively. Contribution by villagers in the form of voluntary labour and materials was realised upto Rs. 1,000 approximately. The balance funds have been provided by the Wing, subject to recoupment from the Government of Mysore. The building has been practically completed and costs around Rs. 4,700, thus showing a saving of nearly Rs. 900 on account of people's participation. The building has been constructed out of liquid asphalt stabilised soil bricks 1½ bricks thick, with raw bricks for internal partition walls. The roof is provided with precast doubly curved 2.5 to 3.7 cm. (1" to 1½") plain c. c. 1:2:4 shells, 0.94×1.02 m. (3'1½"×3'4½") size, resting on precast R. C. Joists. The external walls are plastered with liquid asphalt 3% stabilised sandy soil, and internal walls with ordinary mud plaster. Joinery has been of 5×7.5 cm. (2" × 3") sections of Matti wood, Jungle wood and ledged and battened shutters painted with sylix. Flooring has been done with 3% cement soil with 33-1/3% field metal top plastered with cement mortar 1:3. The building has stood the test of one season and requires some attention to the W. P. C. which is being attended to. A school building of this type would have costed Rs. 7,200 as per the standard specification and thus considerable savings have been effected.

7.7 These experimental buildings serve as a valuable evidence to the villagers that better housing conditions is not out of their reach if only they shed their conservatism and broaden their outlook and actively participate in the housing programme

APPENDIX I

Category of Personnel Trained (up to March 64)

Name of Wing	Total No. of Courses so far	Overseers or Engineering Personnel	B.D.Os.	V.L.Ws.	Others	Total Trained	Remarks
1. Rural Housing Wing, Bangalore	14	134	45	53	Nil	232	
2. Rural Housing Wing, Anand	14	299	..	..	..	299	
3. Rural Housing Wing, Chandigarh	10	120	18	..	5*	143	*Chairman of Block Samithis.
4. Rural Housing Wing, School of Planning & Architecture, Delhi	11	137	..	..	..	137	
5. Rural Housing Wing, Bengal Engineering College, Howrah	18	186	..	..	..	186	
6. Rural Housing Wing, Roorkee	14	157	40	..	..	197	
						<u>1,194</u>	

Rural Housing Problems and Role of Self Help Housing**

By
S. M. Amin†

1. INTRODUCTION

When one mentions housing and its problems, one usually thinks only of urban housing and that too specially for industrial labourers. But for one who knows village life, housing in the villages is also a serious and challenging problem because the conditions generally prevalent in villages are a great source of danger to health, efficiency and even morals of the people.

2. WHAT IS RURAL HOUSING

In Rural India the main source of employment is agriculture since times immemorial, as is evidenced by the fact that more than 80% of the people depend on farming and approximately the same percentage of total population stays in more than 5,50,000 villages. It is one of the tragic and sad features of our planning that despite the strenuous efforts since over a decade, we are unable to provide basic and primary needs of life, such as food, clothing and shelter to our millions of people in rural areas. Rural Housing constitutes one of the urgent problems calling for attention. Housing helps to provide a place worth living only when adequate lighting, ventilation, water and drainage facilities at reasonable construction and maintenance costs are provided. It has been aptly remarked 'good housing means the possibility of home life, happiness and health'. Bad houses spell squalor, drink, disease, immorality, crime and in the end demand hospitals, prisons and asylums, in which we seem to hide away the derelicts of society that are largely the result of society's own neglect.

3. CONDITION OF HOUSES IN RURAL INDIA

3.1 At present, the condition of rural housing is far from satisfactory. Indian village houses are just huts, hovels or stacks and to call these 'houses' as 'dwellings' is without justification. Housing is a health problem of the first order. The vast majority of houses in our villages and towns are much deficient in the essential physical and social requirements of the residential houses. The existing housing conditions in our rural areas are not conducive to healthful living. The houses have been constructed in a haphazard manner without proper planning and foresight. Most of the houses in the villages were planned for shelter against arson and loot from invaders and therefore the construction was also based from the protection point of view, *i.e.*, the houses were constructed in a small place and congested together and with very small openings for ventilation. The houses in many cases are of a low height and do not permit even an adult to stand

erect. These houses do not have a good roofing material and therefore, do not give protection in rainy season. A hygienic lavatory, the primary requirement of a house, is also not there. Both men and women use far away fields as their open latrines.

3.2 At many places the houses are over-crowded; they are constructionally unsound, insanitary and infested with vermin. They have a multi-purpose room which is used as kitchen, living room and water room, a store room and during the monsoon, to store fodder; even calves are given shelter against rain in the same room.

3.3 The villagers use firewood for cooking and it is to imagine the result; the emanating smoke not only spoils the room but also is injurious to the eyes of the inmates. In such houses water and sanitary arrangements are also inadequate. These all suggest that the condition of our village houses is too bad to be tolerated.

4. EXISTING SET UP

4.1 Historically speaking, during the nomadic period of India's social and economic advancement, people in their earlier stages cleared off approximately 10-20 acres of land for their settlement and rehabilitation of their families. Their stay as well as farming were temporary in nature. However, they did stay for some reasonable period at a particular place in group life. This group life was preferred because of several compelling factors, such as political instability, fear of robbery, and need for protecting children and cattle. Besides, under certain apprehensions, people began to construct their houses in such a way that the females could safely stay in their houses and strangers or robbers could not see them, easily. Thus, these houses in their initial development were built by digging the ground and building stone forts with a view to serving as a protective measure. This has an overall effect over the present rural housing schemes, structure, location, designs, etc. In fact, these early houses were by and large of multipurpose character having one or two rooms with a verandah without adequate light, air and ventilation and were utilised for fodder store, cattleshed etc.

4.2 Demographically with the rise in population and stable political situation in India, grouped people began to disperse and they started to establish their respective community grouping settlements and secured land also where cultivable area was available for agriculture pursuits. Small huts and temples were constructed around places where

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drinking water facilities were available. These houses were of such types that they could accommodate bullock-carts, cattle and agriculture implements.

4.3 Despite political stability, villages were horrified by robbers. In fact, looking from an overall point of view, in the construction of rural houses there has not occurred much change in technique and approach. The only change is in the nature of construction when permanent materials like wood, clay and/or stone available from the local area or jungle came into use. In the rural set up, there lived (and live) a variety of community and professional people, such as carpenters, blacksmiths, artisans, agricultural labourers, cobblers, goldsmiths, sweepers, harijans, etc. These different classes of people were invited from outside areas and for them temporary inferior type of houses were constructed. Thus, there were, at this stage two or three types of houses, viz., for artisans, harijans, etc.

4.4 In addition to this, there were business centres where the sectional administrative heads stayed and landless workers and other inferior workers built their houses with the local materials available by their own labour during their spare time. Thus the nature, type and quality of the houses were reflected by the source and level of income, their needs and standard of living and professional convenience. The traditional caste system also played an important role in the formation of such housing schemes.

4.5 Accommodation—As stated above, the housing developments were based on economic considerations and the professional patterns of living. In context to Rural Housing and with low-income housing, a few words may be added about their economic position. Usually, agricultural labourers and artisans in a village are accustomed to keep some cattle to augment their income and hence they also use their houses to shelter their cattle and animals.

4.6 Ventilation—Due to poverty and under-employment, the family members of the low income group people are compelled to search for some employment opportunity with a view to earning additional income. Even the female members have to earn. Such types of people have to construct houses at minimum costs and also have to design them for thermal comfort and safety. Therefore, they reduce the provision for ventilation. The absence of ventilation is consequently noticed in such types of houses. While one of the advantages of such closed houses is coolness during the summer season, the disadvantages like unhygienic condition absence of fresh air, sunlight etc. should be taken into account.

4.7 Type of Construction—Houses in our villages may broadly be categorized into :

- (i) Permanent,
- (ii) Semi-permanent, and
- (iii) Temporary.

Houses of the permanent type constitute hardly five per cent or even less. Usually well-to-do people can afford to have such houses and can maintain them also. Semi-permanent houses may

form from 20 per cent to 25 per cent of the houses in the village. This type falls under the middle income group of the village. Finally the temporary houses which form 60 per cent to 75 per cent belong to extremely poor people who have to stay by force of circumstances as well as poverty.

4.8 Materials Used—The following are the materials used in the construction of houses :

- (i) Local Wood—
 - (a) for doors and windows,
 - (b) for columns to support,
 - (c) for roof and frame structures,
 - (d) for joists and beams,
 - (e) to support roofing materials,
 - (f) planks for flooring,
 - (g) planks for shelves and lofts.
 - (ii) Sundried bricks.
 - (iii) Burnt bricks.
 - (iv) Stones (wherever available) for :
 - (a) door and window frames,
 - (b) rubble masonry in plinth and superstructure,
 - (c) sills and lintels for doors and windows,
 - (d) joists and base plates to support beams,
 - (e) columns,
 - (f) roofing slabs,
 - (g) flooring.
 - (v) Soil—This is for foundation and superstructure work.
 - (vi) Lime—For foundation, superstructure, roofing materials and flooring.
 - (vii) Roofing material :
 - (a) Clay country tiles,
 - (b) Stones for roofing slabs,
 - (c) Thatched materials.
- The more recently used materials are :
- (d) Asbestos cement sheets,
 - (e) Galvanized corrugated iron sheets,
 - (f) Cement concrete.
- (viii) Cement for :
 - (a) Foundation work,
 - (b) Plinth masonry,
 - (c) Superstructure masonry,
 - (d) Roofing material,
 - (e) Flooring material,
 - (f) Plaster work.
 - (ix) Cow dung for plastering and for flooring.
 - (x) Steel—

for R.C.C. work; door and window grill work and for hardware work.

4.8.1 These materials are used depending upon the availability in surrounding areas. For example, where stone is readily available, such as in Rajasthan, Saurashtra, and at a low cost, people prefer it and use it for convenience and economy. Where stones are not available people make use of soil for temporary works. For permanent and semi-permanent works people prepare bricks, tiles, etc. and use it in construction. Similarly wood is also used wherever available, for different purposes.

ses. Well-to-do persons use good type of timber whereas the poor persons construct with local wood. Cement is a comparatively expensive product and is used by only a few persons in villages who can afford it, whereas lime is a material which is normally available in almost all parts of India and can be used by low income group people, provided they contribute their own manual labour and use their own transportation. This provides good and durable building material for semi-permanent and permanent structure at a comparatively low cost, if correct methods are employed in its use.

4.9 Techniques of Construction—If we analyse the existing set-up in rural house construction, we find that at many places, there is a wastage of materials. This is primarily due to lack of knowledge, information, guidance about the strength of materials and lack of correct construction techniques. To cite one example a look at some of the structures will indicate that beams and joists for support flooring or columns to support the superstructure, are of sections, much more than required. This is primarily due to lack of knowledge about the working stresses of the materials used as also lack of data about the load coming over it, with the result that the people normally work too much on the safer side resulting in waste of valuable materials. Thus the cost of construction goes up.

5. DESIRED MINIMUM REQUIREMENTS

5.1 It is well known that housing conditions in rural areas are bad. Bad houses lead to insanitary conditions and unhealthy habits and destroy incentive towards cleanliness. Insanitary habits are responsible for pollution in rooms, streets and sources of water supply from which people acquire diseases by contamination of food, by flies and dust. Such insanitary housing conditions are responsible for high infant mortality.

5.2 There is a great need of providing homes and neighbourhood in good residential environments which permit mental and social well being as well as physical health. The present exodus from villages to towns will not stop unless we provide well planned villages with all or most amenities and attractions now offered by the towns and cities.

5.3 Houses in the villages should therefore be constructed in accordance with approved planning. The houses should have atleast the following minimum facilities :—

- (i) Two rooms with enough space,
- (ii) Proper arrangement of doors and windows,
- (iii) Kitchen,
- (iv) Verandah,
- (v) A good courtyard,
- (vi) A separate shed for cattle,
- (vii) All important services, such as water, disposal of sullage and sewage water, and a good enough space for kitchen garden and if possible, electric lights. An approach road is also a desirable facility.

5.4 Selection of site for houses should be made in such a way that it is on a high elevated ground with proper drainage; a damp house is injurious to health. The lay out should be in such a way that it provides wide open space in front and rear if possible. The houses should be independent or semi detached. In rare cases we should go for row houses when circumstances do not permit of single or semi detached construction. The floor heights should also be sufficient, even for single storey structures. A loft, for storage of agricultural produce, should be provided.

5.5 The arrangement of rooms and doors and windows should be such that it provides cross ventilation and gives adequate light and fresh air. Cross ventilation provides free circulation of air between the openings which is conducive to the health of the inmates. The provision of adequate day light in the house is essential to avoid eye strain. Good visibility is a major factor in stimulating the health habits and personal cleanliness. Further, it is essential that the direct sun light should enter the house at some hours during the course of the day. Sun light provides valuable psychological stimulations. Sun light and fresh air also destroy a large number of diseases producing germs.

5.6 One of the greatest drawbacks of the old houses is that they do not have an efficient chulah. The house should have a separate place for cooking purposes. Smoke should be prevented from entering other rooms. The kitchen should be provided with a smokeless chulah. Smokeless chulah of various specifications were constructed in some Community Development Blocks earlier, but the results were not satisfactory. The main argument against the use of such chulahs was high fuel consumption. However it must be stated that the quantity of fuel consumption is determined by various factors, such as the size of the inner chamber, passage, size of passage between the second chamber and the fuel, the diameter of fuel pipe, etc. Investigation was conducted at Itava Pilot Project to evolve correct specification for giving maximum efficiency with minimum fuel consumption, so that they may be standardized and popularized for general adoption by rural people. As a result of experiments it was found that a chulah with two chambers should be sufficient for an average village home and that it is possible to construct smokeless chulah which will have a good supply of oxygen and fairly good flame in the second chamber. It has low fuel consumption and serves as a good outlet of smoke. Smokeless even cures village women of various eye diseases. In the Hamirpur District, the Community Development and National Extension service, conducted an official survey. The survey revealed that about 90 per cent of the eye diseases suffered by the women of that area were due to exposure to smoke. In a compact area, of 68 houses, with smokeless chulahs women were free from eye troubles.

5.7 In a rural house, the verandah plays a very important role. In the majority of places where climate is temperate, the verandah can be used both as sitting as well as living room, and therefore, it should be so positioned that it provides shelter from sun and rain.

5.8 Toilets

5.8.1 There should be a provision for sanitary latrines attached to the rural houses. Sewage can be treated in several ways; the disposal should be such that the sewage will not :

- (i) contaminate any drinking water or food supply,
- (ii) be accessible to flies and other insects, rodent animals and other vehicles of transmission which may come in contact with food or drinking water.
- (iii) contaminate the surface of the soil and thus expose human beings to hook worm disease.
- (iv) contaminate water for swimming, bathing or laundering, and
- (v) create nuisance due to odour.

Human excreta should not be disposed of indiscriminately on the surface of the soil or handled unnecessarily by individuals. The practice of composting or otherwise using nightsoil should be discouraged. A method should be adopted which can be applied in all the houses in the village and for which the facility is as far as possible, available locally. In community Development and National Extension Service, areas, efforts are being made to have one latrine in every house. These latrines are so constructed that there is no need of collection and disposal of human excreta, and there is no smell and chance of fly breeding. This is coupled with the disposal of sullage and also the disposal of animal dungs, etc, by providing Gobar Gas Plant.

5.8.2 Disposal of sullage also requires proper attention. There should be a proper arrangement for disposal of sullage. In the majority of our villages there is no arrangement for hygienic disposal of sullage. In villages all household water, from washing, bathing, cleaning, etc. find its way into lanes which may have only a kutchra drain. This results in a cesspool. Animal and bullock carts in village pass over this side lane drainage and cause further damage. During rains all the filth of the lanes and earth are washed into the drains causing blockade. The drains become breeding places for mosquitoes and give out offensive smell. For proper disposal of sullage in the village, it would be best to pave the streets with bricks or stones, if possible. The paving should be sloped on either side near the house ending in a shallow drain (drain). If Gobar Gas Plants are provided for each village or each house, the sullage water should be diverted in the Gobar Gas Plant. If not, proper drainage from house to house should be provided at the side of the street with proper grades and water should be carried outside the village where it should be disposed of by sub-soil irrigation. In some cases as in isolated houses, this may be costly and may not provide sufficient flow. Therefore it may be connected with Gobar Gas Plant or soak pit or diverted into a kitchen garden.

5.8.3 The cattlesheds must have a separate place at a little distance from the living room. It should be constructed with all its requirements and the cowdung and waste matter diverted through a permanent channel to a Gobar Gas Plant. Provision of a small fodder room near the cattle

shed is also an ideal arrangement. Good planning provides between the cattleshed and residential arrangement, sufficient place for a kitchen garden.

5.9 Services—The necessity of providing the community with potable and hygienic water constitutes one of the fundamental responsibilities of the authorities governing the area. The benefits accruing to a community through the provision of safe and pure water are so many that the sooner this necessity is recognised the better it will be for the all round development of the community. Electricity and other amenities come later in the priority of services.

If a river is nearby, ample quantity of good water is available. If not, arrangements have to be made through wells. Tube-well is the next alternative if good sub-soil water is available.

With the supply of sufficient water for human use comes the problem of drainage and it is to be handled depending upon the location and the supply and consumption of water.

Approach roads and good streets are also necessary for rural areas to keep in touch with the urban places.

6. PROBLEMS

The population in India is increasing at the rate of two per cent per year; the construction of houses in rural India has hardly made any progress as revealed by statistics. In other words, housing accommodation lags behind population rise. This suggests that there are some radical difficulties which come in the way of fulfilling the requirements of rural housing.

6.1 First of all it is the problem of finance. People in rural areas at present do not even have sufficient food and clothing. Under these pressing and acute circumstances, it would be ridiculous to advise them to build a house. The proposition poses multifarious problems calling for serious considerations. First among them is where to build a house? One has to select an appropriate site for house construction. As already stated in the existing set up of the Indian villages, they have a fort around them or a ditch with a thick hedge around, which has been in existence since time immemorial. Therefore, whatever surplus accommodation there is available, people have already utilised it. There is no spare space for further expansion. The selection of a site for a group of housing is hence the most acute problem.

6.2 Houses in rural areas also do not provide the basic requirements of the occupants. No doubt, this is also due to lack of finance. The provision of accommodation in planning should be so made that eventually, when the position improves, one can extend and expand one's home to meet the requirements. There is then the question of materials for construction. Most of the materials are likely to be available from the surroundings, and if these materials are utilised with care, foresight and economy, most of the requirements could be met. This necessitates adequate survey of the available materials, their quality, quantity, type and kind.

6.3 Another special problem likely to arise in a village area is the absence of technical knowledge and know-how. Coming to the central problem of finance, it is well known that in India the per capita income of the rural sector is extremely low. For people in the lower income bracket it is extremely difficult, if not impossible, to construct new houses and to maintain them.

Housing problem is not merely technical in nature and financial in nature, but it has several social ramifications also. For instance, people are reluctant to stay away from their accustomed social surroundings. This social immobility along with the rigid caste system, illiteracy and orthodox approach, places many hurdles in rural housing. In traditional society, custom plays a dominant role as has been aptly said that 'custom is the king of society'. To break up this rigid system of social custom, taboos, and orthodox approach of the rural people, vigorous effort is needed to educate the people. Thus in the provision of rural houses, there are problems of social immobility and conviction. A new type of education is required for shaking off the rigidity of the village folk.

7. HISTORICAL PERSPECTIVE

7.1 It is interesting to note how houses were constructed in the ancient days, say in the 19th century. The story of these houses will reveal some of the instructive and interesting features. To my own observations, in central Gujarat, it seems to me that we could divide the village houses under two major categories:—

- (i) Houses of agrarian class, *i.e.*, self-cultivating population,
- (ii) Houses of artisans, landless labourers, sweepers, etc.

7.2 Generally speaking, farmers did not construct their houses as and when they needed. They believe that they had to bring up their children, educate them and see that they are well settled eventually, and therefore, ensured that residential accommodation was also made available to them. Similarly, they planned their farming. As a matter of fact, the overall planning and design of their earlier houses was in consonance with their agricultural needs. An important aspect of the earlier people was their foresight in the construction of housing schemes. Obviously, Indian farmers had basic information that the construction of houses needed some material, such as wood, soil, bricks, roofing tiles, etc. They planted a number of trees in their farms so that they may be very useful to the future generation. These trees were after 40 to 50 years, used as timber. It is interesting to note that the traditional system to grow trees was a continuous process. Generally speaking, when a tree was planted the advantages were made available to their sons, grand sons and succeeding generations. In fact their ancestors were conscious of the fact that, before they thought of building, they had to start collecting necessary materials 8 to 10 years in advance. First of all, wood was an important item to look after, because wood was utilized mainly in the building along with bricks, clay, cow-dung, etc. Thus after a careful thought, farmers in their respective fields cut off the trees and let them remain for over two to five years so

that this wood got seasoned naturally and thereafter they prepared beams, columns, joists, purlins, rafters, battons, etc. The trees were selected in such a way that they yielded appropriate sizes of wood for which they were meant to be used. For instance, where there is a heavy wear and tear, such as door and window sills, wall plates, curbs under water, etc, they used Rayan or Babul trees. For columns, they used to select either babul tree or mahudo and for beams, joists, rafters, etc, either mango or neem wood was used. When the required timber was collected and kept for seasoning, the village farmers prepared bricks and roofing tiles, both burnt by local shrubs or wood of inferior quality grown at the outskirts of their farm. The collection and preparation of building components, such as beams, columns, joists, bricks, tiles, etc, were carried out during slack season, say in summer, when the farmer and his family members were comparatively free. The transportation work was also done by their bullock carts and the farmers used to work with the skilled workers in preparing these materials. Thus the materials prepared and collected cost them very little entailing only the labour charges of expert work, such as saw men, brick moulder, tile maker, etc. The farmer and his family members helped these technicians at all stages in preparing these materials.

7.3 Those persons who could afford, used to burn lime and prepared lime mortar independently. They used to get local materials, most of them from their own farms, at little or no cost. Having thus made this preliminary arrangement for building materials, they began the construction work. Their construction constituted the usual pattern of framed structure and a roofing, accommodating a verandah and two big rooms and in rare cases, a kitchen. Water space was normally provided in the corner of one of the rooms and main room was used to serve as a multi-purpose room.

7.4 Their approach to construction is also worth noting. After completing the foundation and plinth work, they used to halt for a year or two. They next erected the framed structure and covered it up with country tiled roof over wooden scantlings. The ground floor was then completed by brick partition in mud mortar and a floor above it laid, supported on beams, joists and planks. They used to halt again at this stage. Completion of first and second floor was kept for future expansion as and when time, money and resources permitted.

7.5 Along with this they did not neglect their animals and made some temporary arrangement for their cattle sheds and fodder rooms. Of course these were purely of temporary nature erected on rough wooden posts, selected from tree branches and thatched roof. When finance and resources permitted they improved the roof by replacing the thatched roof with country tiles and still at a later date filling the partition by mud walls or country bricks as per their convenience. This is the principal story of house building by normally well-to-do farmers which constitute hardly about 30 per cent of the population.

7.6 The landless labourers and artisan class who normally depended on these well-to-do farmers

used to construct their houses by taking their help for collecting the requisite raw materials and for transport facilities. Normally in villages it was a tradition that the farmers who invited and maintained these artisans class considered it their moral or sacred duty to help these persons by providing them the required raw materials. Since this class had to depend mostly on aid in the form of raw materials like wood, tiles, etc, they had to compromise and build one room or two room tenements; their cattle had to depend upon natural shelter available in their areas. The farmers used to get the help of artisans to work for the construction of their houses and the latter in turn, used to get building materials, such as timber, bricks, tiles, etc. Thus if we look at the past history of about 150 years the housing problem was solved by villagers by mutual co-operative aided self-help approach.

8. DIRECTIONS TOWARDS SOLUTION

8.1 An analysis of our ancestor's long range pre-planned and far-sighted schemes, based on self-help and the use of local materials, is quite suggestive. I, therefore, believe that the solution of the present rural housing problem lies in synthesizing the application of modern techniques and information along with our ancestors' approach. Secondly, we will be in a position to find out the workable solution for the acute housing problem by taking the good and adoptable points from both.

The problem can be divided into six major categories :

- (i) Planning,
- (ii) Utilization of local materials,
- (iii) Construction techniques,
- (iv) Construction specifications,
- (v) Economic considerations, and
- (vi) Production of building materials on co-operative basis within reach of the community.

The planning may be divided under four major sections.

(a) Community or Group Houses

It could be planned according to individual requirements as well as financial and available resources. At the same time this is also to be grouped as per their social requirements. After all whatever we may say or expect, we have to take into consideration the social aspects in the planning.

(b) Farm House

As a result of relative political stability, farmers now-a-days have no imminent danger of loot or arson as in the past. In other words, these people can stay in isolation in their own farms, where they have to spend most of their time. In fact, this is the tendency now gaining momentum.

(c) Artisan Class

People who are not the owners of the land are mostly artisan class. For this class it is imperative that a village industrial labour housing

zone be created. In fact this class is economically better off in comparison to the landless labourers.

(d) Landless labourers

It is necessary to have a separate zone for landless labourers and other economically backward class. Their houses are planned according to their requirements.

8.2 Use of Local Materials—The quantity of materials, required for rural houses in the country as a whole is of a great magnitude and the use of building materials normally used in urban areas is rather impossible. Therefore, the only available, alternative seems to me that we should try to create local building materials and use them most advantageously as our forefathers did. The main building materials among many other are : soil, adobe, burnt bricks, stones, timber, sand, cement, wood and roofing materials.

Such local materials should be preferred which are durable and of good quality. Therefore, one has to evolve methods of producing building materials of required quality from the local resources, and past experience may be used as a guide. The type of construction selected must suit the local materials. For instance, where stones are available, stone masonry has to be used.

8.3 Construction Techniques and Specifications

8.3.1 The specifications for various building materials prepared by various states are based on higher safety factor as they take into account that one has to construct buildings where proper technical skills and supervision are not available. In rural housing, when a man has to construct his own house, undoubtedly he will pay careful attention both in selecting materials and during construction. When the materials are in short supply, it would not be improper to try and relax the specifications, so far as rural housing is concerned and particularly where Government is granting some aid or the other. If the Government desires to impose a condition for scrupulously adhering to the State P.W.D.'s specifications the poor villager will lose part of the advantage of help from the State. He would have to spend much more from his pocket in constructing according to the plans and specifications laid down by the Government. It is hence considered very desirable to draw up separate specifications for rural housing to meet the local conditions. New and modern construction techniques should also be suggested to the villagers so that they get the advantage of lower cost. These techniques should be preferably based on the utilization of cheap durable building materials, such as stabilized soil, water-proof mud plaster, partition walls with mud or bamboos, etc.

Roofing materials also require a great deal of research and evaluation because of the serious problems they generally pose.

The suggestions from our ancestors' approach seems to be an ideal one, viz., a framed structure with a good roofing material. This can be adopted for one room tenements, two room tenements or a multi-storeyed structure, where the partitions can be made using the local materials, manual labour being contributed by the occupants themselves.

8.3.2 In most of the rural areas, now-a-days it is practically impossible to get well seasoned timber. White ant nuisance is so common. Hence wooden door and window frames which are fixed in mud partition walls should be replaced by cement concrete or pre-stressed concrete door and window frames. Finally the design of houses should be prepared in such a way that it provides scope for expansion so that the occupant can take advantage when financial capacity permits. In brief, planning should be a continuous process so that the future needs and requirements could be accommodated with a rise in the standard of living.

9. PREPARATION OF BUILDING MATERIALS ON CO-OPERATIVE BASIS

The solution of housing problem of Indian villages throws a challenge to planners. Resources are scarce and the ever increasing needs of houses all over the country demand building materials in abundance. Attempts to manufacture materials by individual approach could never be economical. Besides it would be time consuming involving large financial outlays. As against this, it is my firm conviction that a joint community approach based on mutual self-help and co-operation by a small community of a group of villages (where the problems of heavy transportation, marketing, labourers, artisans does not involve a massive expenditure) would be ideal. If this group effort is made I am sure that it will save time and make available building materials at lower costs.

10. ECONOMIC CONSIDERATIONS

We have already analysed the social and economic aspects of life in rural areas to some extent. Because of poverty, rural people are not in a position to construct their houses independently, fulfilling a primary need of life. The State or the Central Government have to come into the picture to provide finance and technical aids especially to the relatively backward sections. They would have to provide their mite of course by contributing physical labour which they can afford. I am sure that the problems of rural housing could be easily solved this way with less burden to the poverty stricken rural farmers.

11. CONCLUSIONS

11.1 Improvement in housing conditions in the villages has a manifold advantage. It raises the level of living, provides greater opportunities for work and is vital for transformation of rural life. Yet, because of the magnitude of the problem and its inherent difficulties, the task of improving conditions in the villages has to be viewed, not as an isolated objective, but as a part of the larger scheme of rural development. Consequently, rural housing is intrinsically a part of community development and village planning. The specific programme for rural housing as such, is intended to supplement the resources of the community development movement at the level of the block and the village by way of assistance in the form of technical advice, demonstration, provision of improved designs and lay-outs, better use of local materials and to a limited extent, provision of finance. It's essential object is to help create healthy environmental conditions for sections of the village population and for balanced development of rural life as a whole. It is against this background that the village housing projects scheme was introduced in 1957.

11.2 The Village Housing Projects Scheme provides for selection of villages in groups of four to six and the preparation of lay-out plans for these villages after carrying out physical and socio-economic surveys. The implementation of lay-out plans and rebuilding of houses is taken up in stages so that the entire village is remodelled over a period of 8 to 10 years. Co-operatives for the manufacture of different building components are organised. Assistance in the shape of loans up to 66-2/3% of the cost of construction subject to a maximum of Rs. 2,000 per house is given for building of houses. Loans are also given for carrying out improvements in existing houses in accordance with the standards prescribed by the State Governments. Provision has also been made in the scheme for acquisition of land required for streets, community buildings, new house sites and for thinning out densities, etc. Research-cum-Training Centres have been established in six centres for promoting research in improving local building materials and construction techniques and for training personnel required for executing the scheme. The Rural Housing Cells of State Governments, work in close association with these Wings towards improvement of village housing.

III
DEMOGRAPHIC ASPECTS IN
RELATION TO HOUSING

Methodology of Population Projection

(Synopsis of lecture by Dr. C. Chandrasekaran)

1. DATA REQUIRED FOR POPULATION PROJECTION

1.1 Population projection is aimed to estimate the size and characteristics (*usually age and sex composition*) of the population of a country or a part of it at future dates.

1.2 The data required for making population projections are (a) the size and composition of the population at some recent date and (b) level and trend of fertility, mortality and migration.

1.3 Censuses provide data on the size and composition of the population. Information on past births and deaths is normally provided by registration. Where the registration data are reliable, these can provide basic information on the level and trend of fertility and mortality rates. Even if registration is not good, birth and death rates can be estimated from the age-structure of the population provided by the censuses. It is more difficult to obtain data on migration which is also likely to fluctuate more than fertility and mortality rates.

1.4 The methods used for making population projections depend on the extent of demographic data available. The accuracy of population projections can never be beyond question.

2. METHODS OF MAKING POPULATION PROJECTIONS

2.1 Mathematical methods

2.1.1 There are three important methods under this head: (1) Arithmetic Progression method, (2) Geometric Progression method, and (3) Logistic Curve method. Arithmetic and Geometric methods make use of the population size as given by the two previous censuses. The Logistic Curve method requires information of the population sizes at a number of previous census, *at least three*.

2.1.2 The mathematical models make projections using the rates of population growth observed previously. The Arithmetic Progression and Geometric Progression methods make use of the rates of population growth observed during the previous intercensal decade. The Logistic Curve makes estimates of future rates of growth assuming that the population growth is represented by a logistic curve. These assumptions become highly untenable in situations where rapid economic and social developments occur. The figures of population projections for the Indian Union for 1961 made by these three methods, presented in Table 1, indicate that the projections given by these methods even for a short period of ten years can be widely off the mark. The projected figures for 1961 can be compared with that actually recorded, *viz.*, 438 millions.

TABLE 1
Population Projection for 1961 (Indian Union)
(Figures in millions)

Year	Arithmetic Progression Method	Geometric Progression Method	Logistic Curve (Using 1931, 1941 and 1951 census data)
1941 . . .	318.9	318.9	318.9
1942 . . .	322.7	322.5	322.8
1943 . . .	326.5	326.2	326.7
1944 . . .	330.3	329.5	330.5
1945 . . .	334.1	333.6	334.4
1946 . . .	337.9	337.4	338.2
1947 . . .	341.7	341.2	342.0
1948 . . .	345.5	345.0	345.7
1949 . . .	349.3	348.9	349.5
1950 . . .	353.1	352.9	353.2
1951 . . .	356.9	356.9	356.9
1961 . . .	394.9	399.4	391.9

NOTE.—The estimates for the intercensal years 1941-1951 are given to show how the different methods operate.

The mathematical methods give projections of total population and do not often concern themselves with the sex or age composition of the projected population.

2.2 Component method

2.2.1 The component method starts with the sex and age distribution of the population at a census taken recently and makes projections by estimating the population of males and females in the different age-groups at intervals of say 5 years, 10 years, etc., from the census date. This method when applied in its most simple form *ignores migration*.

2.2.2 The method is based on two essential facts which can be stated with reference to the population at five years after the census date. Assuming 31st December 1956 as the census date.

- (1) The population aged 5-9, 10-14, 15-19, etc., on 31st December 1961, five years from the census date, will be the survivors respectively of those aged 0-4, 5-9, 10-14, etc., at the census. The former

figures can be obtained if the survival ratios from 0-4 to 5-9, 5-9 to 10-14, etc, for the five year period after the census date are assumed to be known.

- (2) The population aged 0-4 after five years from the census date will be the survivors of the births which occurred during five years following the census date and this population can be worked out if the number of births in the five year period and the survivors out of these on 31st December 1961 are known.

2.2.3 The survivor ratios depend on the mortality conditions. These ratios can be obtained from life tables. A life table for the period 31st December 1956 to 31st December 1961, centred at 1 July 1959 and the survivor ratios, as given by it are one set of essential requirements for projecting population by the component method in the above example. The application of the survivor ratios to age groups 0-4, 5-9, etc, is shown in Table 2 for the female population of Ceylon as recorded in the 1956 census.

TABLE 2

Projected Female Population 1956-61 (Ceylon)

Age group	Population Dec. 31, 1956	Survival Ratio July 1, 1959	Population Dec. 31, 1961
0-4	790,693	.96696	842,625
5-9	666,855	.99059	764,569
10-14	508,374	.99430	660,580
15-19	411,095	.98976	505,476
20-24	358,786	.98518	406,885
25-29	345,895	.98432	353,469
30-34	304,965	.98030	340,471
35-39	245,116	.97890	298,957
40-44	205,170	.97539	239,944
45-49	168,136	.96712	200,121
50-54	138,294	.95572	162,608
55-59	104,622	.92943	132,174
60-64	74,128	.87677	97,239
65-69	59,396	.79280	64,993
70-74	39,532	.68977	44,708
75-79	23,752	.57668	27,268
80+	11,485	.40197	18,314

2.2.4 The number of births during the five year period following the census has to be estimated on some assumptions concerning fertility—in terms of general fertility rate, specific fertility rate, etc. Using the specific fertility rates given in Table 3 and applying it to the female population aged 15-19, 20-24, etc, on 1 July 1959 (the Mean of

the numbers given in columns 2 and 4 of Table 2), the number of births in one year is estimated as 374,476. The births during the 5 years following the census is 1,872,380. Since the sex ratio at birth is 106 males to 100 females the number of female births in the five years following census is 908,922. These female births with a survivor ratio of 0.92,706, applicable for 1 July 1959 give the estimated 0-4 population of females on 31st December 1961 as 842,625.

TABLE 3

Specific Fertility Rates and Estimated Number of Births

Age-group	Specific Fertility Rate per 1,000 Females	Female Population July 1, 1959	Births in One Year
15-19	69.26	458,286	31,741
20-24	282.15	382,836	108,017
25-29	315.77	349,682	110,419
30-34	216.16	322,718	69,759
35-39	169.14	272,037	46,012
40-44	38.32	222,557	8,528
			374,476

2.2.5 The component method can take into account anticipated changes in mortality and fertility conditions. To facilitate calculation, the United Nations has given a set of Model Life Tables for expectation, of life at birth (e^0) ranging from 20 to 73.9. These are available for expectation of life at birth increasing by 2.5 years from 20 up to 55 years and afterwards for selected values of expectations of life at birth. These life tables are of great practical value if the assumption that expectation of life at birth increases by 0.5 year or 1.0 year per year is made in making population projections.

2.3 The Ratio-method

2.3.1 Planning at a local level requires estimates of future population for small areas. The methods available for projecting the population of geographic sub-areas of a country may be divided into two groups:

- (1) those which employ only the data for the sub-area and
- (2) that which involves consideration of the ratio between the population of the region, city, etc, and that of a larger area, often the whole country, and known as the ratio-method.

2.3.2 The data required for the method (1) are the same as discussed above for national projections. Either the mathematical or component method may be applied. The main difficulty in making projections is the assessment of the effect of migration. Often estimates of the past migration rates offer the most useful guide for projecting the migration component.

2.3.4 For the application of the ratio-method, the data required are (1) those necessary for projecting the national population and (2) those required for estimating the ratio of the regional to the national population. The method consists of making projections for the national population and of apportioning them to the different regions or sub-areas according to the projection of the ratios of each region or sub-area population to the national population. The projections made by

the Expert Committee in 1959 for the population of different states in India used the ratio-method. The population of the Indian Union was first projected and then apportioned between the different states. The apportioning factor was based on the change in the proportions of the state population to India's population in 1941 and 1951. The proportion was assumed to become constant after a 30-year period.

Population Growth and Some of Its Features in the ECAFE Region with special reference to India*

by
Ashok Mitra, I.C.S.*

1.1 It is indeed gratifying that most countries of the ECAFE region have participated in the World 1960 Census Programme and taken their population censuses, some for the first time. This no doubt is a great achievement of the ECAFE Secretariat which organised a series of Asian Statisticians' Conferences where matters relating to population and agricultural censuses were fully thrashed out. The publication as well as analysis of census results is a laborious and time-consuming affair, and although first and even final totals are available for a number of countries, not enough is yet known of changes in age groupings, sex ratios, migration, mortality and other features to reassess trends observed in the past.

2.1 The prime sources of preparation of this note are the UN publication "The Demographic Year Book" and the Population Commission's Fourth Report on Future Estimates of the Population of Asia and the Far East".

2.2 The Fourth Report begins with the remark that the ECAFE region comprises roughly one-half of Asia and one-sixth of the land area of the earth (excluding Antarctica), but contains a little more than one-half of all the world's people. Expressed in another way, the area of the region is approximately the same as that of the Soviet

Union or Latin America or North America, but in population it is seven times larger than any of these areas. In short, this region really determines the world's population trend. In 1957, the world's population was estimated at 2,795 million on 135.3 million square kilometres of land. The ECAFE region had 21.2 million square kilometres and 1,483 millions of population, that is, 15.6 per cent of land area but 53.0 per cent of population. The Soviet Union, North America and Latin America were very close to each other, both in respect of land area and population, the average being around 16 per cent each of land area and 7 per cent of population.

This region is naturally also the densest in the world, having an average density of 70 persons per square kilometre against 9 in the Soviet Union, North or South America. Cultivated land per capita is also the lowest, while yield is uneven and generally low.

2.3 The following statement, compiled from the Demographic Year Book, gives us the data of the last census, the total population, the sex ratio (females per 1000 males), estimated annual rate of increase per cent, area in square kilometres and population per square kilometre.

STATEMENT NO. 1
Population, Density, Sex Ratio & Growth rate of ECAFE Countries
(Source : Demographic Year Book 1960)

Sl. No.	Country	Date of last census	Total persons	Sex ratio (Females per 1000 males)	Annual rate of increase per cent (1953-59)	Area km ²	Density per km ² (1959)
1	2	3	4	5	6	7	8
1	Afghanistan	..	13,150,000	..	..	650,000	20
2	Australia	30-6-54	8,986,530	977	2.2	7,704,159	1
3	Barunel	10-8-60	83,877	920	8.0	5,765	14
4	Ceylon	20-3-53	8,097,895	897	2.5	65,610	147
5	Taiwan	16-9-56	9,863,264	871	3.6	35,961	285
6	Combodia	..	4,845,000*	1,002	..	172,511	28
7	Federation of Malaya	17-6-57	6,278,758	939	3.0	131,313	51
8	France	10-6-54	42,843,520	1,085	0.9	551,208	82

*Registrar General of India, New Delhi.

STATEMENT NO. 1—Contd.

1	2	3	4	5	6	7	8
9	Hong Kong	1961	3,128,044**	945	4.1	1,013	2,820
10	India	1-3-61	438,602,552**	941	2.2**	3,265,785	134**
11	Indonesia	7-10-30	60,412,962	..	2.1	1,491,562	61
12	Iran	15-11-56	18,954,704	965	2.4	1,648,000	12.
13	Japan	1-10-60	93,418,501	1,036	0.9*	369,661	253**
14	Korea : Southern	1-9-55	21,502,386	999	1.8	96,929	246
15	Laos . . . . .	..	1,760,000*	..	3.3	236,800	7
16	Nepal	28-5-54	8,256,625	1,033	1.5	140,798	64
17	Netherlands . . . . .	..	11,346,000*	..	1.3	32,450	350
18	North Borneo	10-8-60	454,328	..	2.8	76,112	6
19	New Zealand	18-4-61	2,414,064**	990	2.2**	268,676	9
20	Pakistan	1-2-61	93,812,000	903	2.4**	943,725	92
21	Philippines	15-2-60	27,455,799	1,001	2.6	299,681	82
22	Sarawak	14-6-60	744,529	981	2.5	125,206	5
23	Singapore	17-6-57	1,445,929	896	4.8	581	2,719
24	Thailand	25-4-60	25,519,965	1,005	1.9	514,000	43
25	Vietnam South . . . . .	..	13,790,000*	..	5.9	170,806	81
26	U. K. (Great Britain & Northern Ireland)	1961	52,719,604**	1,066	0.48**	244,016	214
27	U.S.A.	1-4-60	179,323,175	1,030	1.9**	9,363,387	19
28	U. S. S. R.	15-1-59	208,826,650	1,220	1.7†	22,402,200	9

NOTES:—*Estimated figures of population for 1959.

**Based on actual latest census figures.

†Annual rate of increase—1950-59.

2.4 The Fourth Report divides the ECAFE region into four sub-regions. The first, Central-South Asia, comprises Afghanistan in the north-west, across to East Pakistan in the south-east. The second, South-East Asia, comprises all the peninsular mainland areas together with the Philippines and Indonesia. The third, Continental East Asia, comprises mainland China, Hong Kong, Macau and the Mongolian People's Republic; while the fourth, Maritime East Asia consists of Taiwan, Japan, Korea and the Ryukyu Islands. Among these sub-regions again, Continental East Asia accounts for a little less than half the region's population and more than half its area. Notwithstanding this great looming bulk of Continental East Asia, it is Central-South Asia and South East Asia which hold the palm for accelerating population growth. For, with a total population of about 706 millions in 1957 (513 for Central-South Asia and 193 for South-East Asia), in an area of 9.2 million square kilometres, for every 100 population in 1920, the accumulated growth in 1950 was estimated at 143 for Central-South Asia and 156 for South-East Asia, in contrast to only 117 for Continental East Asia.

2.5 This drives us to the second important conclusion, which is that even within the ECAFE region, which itself will henceforth determine the

world's population trend, it is the Indian sub-continent constituting Afghanistan, Pakistan and India, which will hold the dominant key with its total of approximately 535 million in 1961. This, together with the thought that per capita national income in this subcontinent is still among the lowest in the world, is enough to weigh us down.

2.6 With the end of World War II, the partition of India, the crumbling of the Japanese empire, the struggle in Indonesia, the emergence of national states and the gradual withdrawal of imperialist powers, national frontiers in this region have set up higher and still higher walls against international migration. We can assume, that throughout the world fewer and still fewer countries will welcome permanent immigrants and will have to settle down to stewing in their own juice, for immigration will be no substantial way of eliminating pressure on one's own soil. The chief determinants of population trends hereafter will be birth and death rates.

2.7 Neither birth nor death rates, which are generally high in comparison with modern Western populations, are uniform at all in this region. The following estimates have been compiled from the Fourth Report, while the other that follows it (Statement 3) has been collected from the Demographic Year Book,

STATEMENT No. 2
Crude Birth and Death Rates with Population Estimates up to 1970 in Selected Countries of the ECAFE Region

(Source : Report IV)

	Birth Rate & Year	Death Rate & Year	Population (Million) (Year)	Estimate for 1970 (Million)
I. Central South Asia				
A. Ceylon	36.4 (1956)	9.8 (1956)	10.0 (1960 Est.)	13.7
B. India	39.1 (approx. est.)	17 (approx. est.)	438 (1961 count)	554.7 (Pl. Commission).
C. Nepal	44 (1952-4)	33 (1952-4)	9.14 (1960 Est.)	10.7
D. Pakistan	45 (Est. 1961)	20 (1961 est.)	93.8	125.7 (Est.B)
E. Afghanistan	..	..	11	12.5
II. South-East Asia				
A. Burma	35.9 (1956 regd.)	21.8 (1956 regd.)	23 (Lower mortality estimate).	30.4 (Lower mortality estimate).
B. Indonesia	43.1 (1956-60 UN) 40.5 (Wander)	23.5 (1955-60 UN) 18.8 (Wander)	60.41 (1930 est.) 91-93 (1960 UN)	116-137 (1957 UN)
C. Malaya	45.5 (1956 regd.)	11.3 (1956 regd.)	6.3 (1957 Census)	..
D. Philippines	50 (Est of 1956-57)	21.5 (1956-57)	27.45 (1960 Census)	35.7 (med. U.N.)
E. Thailand	44 (1947-52)	15 (Estimate for 1955)	25.5 (1960)	31.1 (med. U.N.)
F. Vietnam	Between 35.3 (1956 and 39.2 est.)	Between 6.0 and 7.1 est. 56)	29.3 (medium proj. for '60 UN)	36.4 (med. projection U.N.)
III. Continental East Asia :				
A. China	41.6 (1953-58 High fertility projection Assumption II).	20.4 (High fertility projection Assumption II).	583 (1953)	745 to 961 (1973 low fertility assumption birth rate 37.0. High fertility assumption b.r. 41.6).
IV. Maritime East Asia				
A. Taiwan	44.3 (Est. for 1955-60).	20.3 (Est. for 1955-60).	9.9 (1956)	14.84 (Constant fertility).
B. Japan	17.9 (1958)	7.4 (1958)	93.41 (1960)	99.6 (Est. 1957)

STATEMENT No. 3
Vital Statistics of ECAFE Countries
 (Source : The Demographic Year Book 1960)

Sl. No.	Country	Year	Crude birth rate	Crude death rate	Infant mortality rate	Natural rate of increase	Expectation of life at birth		
							Year	Male	Female
1	2	3	4	5	6	7	8	9	10
1	Afghanistan	..	..	..	..	..	..	..	..
2	Australia	1959	22.6	8.9	21.5	13.7	1953-55	67.14	72.75
3	Brunei	1958	56.8	11.8	88.9	45.0	..	..	..

STATEMENT NO. 3—Contd.

1	2	3	4	5	6	7	8	9	10
4	Burma	1955	50.0	35.0	133.7	15.0	..	..	..
5	Ceylon . . . . .	..	..	..	..	..	..	..	..
6	Taiwan	1960	39.5	6.9	39.1	32.6	1936-41	41.08	45.73
7	Cambodia	1958	41.4	19.7	..	21.7	1958-59	44.2	43.3
8	Federation of Malaya	1959	42.2	9.7	66.0	32.5	..	..	..
9	France	1960	17.9	11.4	23.3	6.5	1952-56	65.04	71.15
10	Hong Kong	1960	37.1	6.4	41.5	30.7	..	..	..
11	India	1958	39.1	19.4	185	19.7	1941-50	32.45	31.66
12	Indonesia	1950-54	40.0	20.0	150	20	..	..	..
13	Iran	1959	45	25	..	20	..	..	..
14	Japan	1959	17.5	7.4	33.7	10.1	1959	65.21	69.98
15	Korea : South . . . . .	..	..	..	..	..	..	..	..
16	Laos . . . . .	..	..	..	..	..	..	..	..
17	Nepal	1954	45	30	..	15	..	..	..
18	Netherlands	1960	20.8	7.6	16.5	13.2	1953-55	71.09	73.9
19	North Borneo . . . . .	..	..	..	..	..	..	..	..
20	New Zealand	1959	26.5	9.1	23.9	17.4	1950-52	68.29	72.43
21	Pakistan . . . . .	..	..	..	..	..	..	..	..
22	Philippines . . . . .	..	..	..	..	..	..	..	..
23	Sarawak . . . . .	..	..	..	..	..	..	..	..
24	Singapore	1960	37.8	6.2	34.9	31.6	..	..	..
25	Thailand	1956	42	20	..	22	1947-48	48.69	51.90
26	Vietnam (South ) . . . . .	..	..	..	..	..	..	..	..
27	U. K.	1959	16.9	11.7	23.1	5.2	..	..	..
28	U. S. A.	1960	23.6	9.5	25.6	14.1	1958	66.4	72.7
29	U. S. S. R.	1959	25.0	7.6	40.6	17.4	1957-58	64	71

STATEMENT NO. 4

Sundburg's Age Groups in Selected Countries of ECAFE Region

(Source : Report IV of Population Commission)

Country	Year	Age ratios from official data		
		0-14	15-59	60+
Ceylon	1946	37.2	57.4	5.4
	1953	39.7	54.9	5.4
Taiwan	1940	44.1	51.1	4.8
	1950	41.4	54.5	4.2
	1955	43.4	52.6	4.0
Singapore	1947	36.0	60.4	3.6

STATEMENT NO. 4—Contd.

1	2	3	4	5
Malaya	1947	39.9	55.1	5.0
Burma	(Urban) 1953	33.9	62.1	4.0
	(Rural) 1954	37.1	58.4	4.5
		0—9	10—59	
Pakistan	1951	29.5		
East Pakistan			66.1	4.4
West Pakistan		26.9	67.4	5.7
		0—14	15—59	
Philippines	Oct. 1956	45.1	50.3	4.6
Thailand	1947	42.3	53.5	4.2
Sarawak	1947	44.0	52.2	3.8
		0—14	15—64	65+
China Mainland	1953	35.9	59.7	4.4
India	1951	38.8	56.4	4.8
High fertility projection (C. & H.) for	1961	39.8	55	5.2
Medium fertility projection for	1971	40.3	53.9	5.8
Japan medium projection :	1960	29.6	61.5	8.9
	1970	20.7	68.6	10.7
Pakistan combined assumptions	1951	41.7	54.1	4.2
	1961	42.8	52.7	4.5
	1971	42.2	52.9	4.9

2.8 Examining Statement 4 on estimated age ratios according to Sundburg's groupings: the groups 0-14, 15-59 and 60+.

We shall find that when we come to discuss India particularly, many of her features are reflected generally in the ECAFE region.

Let us take the crude density or population per square kilometre. Leaving out Hong Kong as a freak, we find that India is not really the densest, although we sometimes wish that we did not live so close to each other inhaling one another's steam all the time. Our density is 134 per square kilometre. Japan has a density of 253, South Korea 246, Taiwan 285, Ceylon 147. The other countries are well below 100. The countries in the region with very low densities are Afghanistan (20), Cambodia (28), North Borneo (6), Sarawak (5).

As for the sex ratio, we find that except for Cambodia (1002), Japan (1036), Nepal (1033), the Philippines (1001) and Thailand (1005), no country in the region has its female population on a par with the male. In all other countries, the female ratio is substantially less than par. We shall have occasion to come to this point later in connection with India. As for the crude birth rate, except for Japan, no other country in the region seems to be unquestionably and well away from the annual mark of 40 per thousand. We find from one of the statements that Nepal (44),

Pakistan (45), Indonesia (40.5—43.1), Malaya (45.5), Philippines (50), Thailand (44), perhaps mainland China (41.6) and certainly Taiwan (44.3) were well above 40 in the last decade. India (39.1) is almost as good as as 40, while Ceylon (36.4), Burma (35.9) and Vietnam (35.3) are distinctly below 40. The only country with a birth rate much below any other country in the ECAFE region is Japan.

The crude death rate varies greatly from country to country. But they share one feature in common, which is a steep tendency towards decrease. For certain areas in Vietnam, the death rate was estimated at between 6 and 7 per 1000. But this probably does not obtain for the whole of the country. Japan has the lowest conclusively established rate of 7.4 in 1958, Ceylon came a close second in 1956 with 9.8 and Taiwan came third with 10.3 estimated for 1955-56. Thailand (15), Malaya (11.3), Pakistan (20), India (17/18) and possibly Indonesia (18.8) according to Wander have rapidly reduced their death rates in the last decade. The rate for mainland China is not quite established but one assumption in the Fourth Report puts it at 20.4. The Philippines and Burma had rates above 20 around 1956. According to the Demographic Year Book there are quite a few countries having an annual rate of increase higher than 3 per cent. These are: Taiwan (3.6), Malaya (3.0), Laos (3.3). The Philippines, according to the latest census, are growing at the

rate of about 3 per cent per annum and so is Thailand, about 2.9 per cent per annum. Pakistan's rate is quite high with about 2.5 while India's is about 2.15. There are very few countries today in the ECAFE region with a rate of growth under 1.5 per cent per annum, while Japan is the only country which has a rate of growth of less than one per cent.

As for Sundburg's age groupings, only Japan has a figure less than 30 per cent in age group 0-14. In the other extreme Taiwan, Philippines, Thailand, Sarawak and Pakistan have proportions well above 40, while Ceylon, Singapore, Malaya, Burma, Mainland China and India have percentages nearer 40 than 30.

The figures for expectation of life at birth are available for very few countries and it is very likely that except for Ceylon, Japan and Thailand, no other country in the region has yet definitely crossed the 50-year mark.

This in very brief is a general picture of the population of the ECAFE region. We may now discuss some of the latest census figures of India.

2.9 The population of India at the census of 1961 was 438.60 million. The last census resumed a count, interrupted in 1951, of Jammu and Kashmir on this side of the International Cease Fire Line, of Nagaland and the North East Frontier Agency. The Census of the new Union Territory of Dadra & Nagar Haveli, taken in February 1962, has been included, while that of Goa, Daman and Diu still awaits to be taken. A Portuguese census however conducted on 15 December 1960 estimated the population of Goa, Daman and Diu at 634,584 (595,569 for Goa, 23,093 for Daman and 15,922 for Diu) which has not been included in the above total.

Let us have a look at the figures from 1901 to 1961 (Statement 5).

STATEMENT No. 5

Population of India at each Census, 1901-61 Showing Decennial Per cent Variations

(Exclusive of the Population of Goa, Daman & Diu and Dadra & Nagar Haveli)

Year	Population	Decennial per cent variation
1901	235,725,167*	..
1911	251,545,148	+5.77
1921	250,789,261	-0.30
1931	278,397,268	+11.01
1941	318,036,403	+14.24
1951	360,450,499	+13.34
1961	439,234,771	+21.67

*Excludes figures of Jammu & Kashmir.

2.10 One is put in a mood to appreciate the magnitude of the increase in the last decade when one reflects that with more than 945,350 sq. km. (365,000 square miles) less of territory, as a result of the partition, India more than made up for the population of Pakistan (75.8 million in 1951, three years and a half after August, 1947) which she had lost on the eve of her independence. One also notes that what is impressive is not so much the rate of increase; which up till now has been modest by ECAFE standards, and for past decade even quite low, but the large absolute increments. The Census Commissioner for 1951 aptly called 1921 the Great Divide. One only hopes that India will be strict in her arrest of the Great Leap Forward, so explosively sprung in 1951. For, the actual count in 1961 surpassed even the most generous of expectations, being short by as much as seven million of the highest estimate ever made before the census. The Registrar General in 1951 had forecast an upper limit of 407, Kingsley Davis 402, Goale & Hoover and T. Chellasawami 424 and the Planning Commission Expert Committee 431. These estimates appear to have failed to appreciate the cumulative effects of the elimination of recurrent famines and epidemics on the one hand and pandemic malaria on the other, the former after World War I, the later after World War II, which had carved up the country as it were between themselves in two distinct regions. A malaria map of India reproduced in the All India Census Report for 1941, must come as a shock to those to whom the era of famines and malaria is already a fading memory, for it describes the whole of north and central India together with the thick spine of the Deccan plateau down to the were almost coterminous with those of recurrent malaria, while whatever was left east of this tract, from the easternmost point to the extreme west and from the northernmost point to the extreme south, was in the grip of an endemic scourage. What was more, the tracts of recurrent malaria were almost coterminous with those of recurrent famine and epidemics and experienced recurrent crisis in population growth between 1881 and 1931. It is thus no accident that it is roughly this tract, which was formerly ravaged by both epidemic, scarcity and recurrent bursts of famine has shown the highest reaches of increase in 1951-61 (21 to 30 per cent). A much lower rate of increase (up to 20 per cent) is noticeable in the central and eastern tracts, and the southern coastal belts. These were formerly in the endemic malarial zone and cholera of varying intensity and were therefore subject to spates of recurrent crises, relative stagnation or variable increase between 1881 and 1931. Is it possible that this latter area will attain still higher rates of growth before showing a decline?

2.11 Whereas in the sixty years 1901-61, India's population has increased by more than 86 per cent, the first twenty years (1901-21) saw a net growth of only 5.36 per cent, the next twenty (1921-41) of 26.81 per cent on 1921 and the next twenty (1941-61) of 37.89 per cent on 1941, while the decade 1951-61 alone has shown an increase of 21.67 per cent on 1951. As against the growth rate of 5.36 per cent in 1901-21, the extent of increase in 1921-51 and in 1921-61 was as much as 43.73 and 74.87 per cent respectively of the 1921 population. At this rate it seems likely that India will double her population of

1901 in 1965.* Thus, while India's population was almost stationary in 1901-21, increases in subsequent decades were beyond anything previously experienced, while that for 1951-61 can only be described as phenomenal.

2.12 The reorganisation of the country into States and Union Territories has helped in a more rationalised study of population. The Census of 1961 was taken in fifteen States, nine Union Territories, Pondicherry and Sikkim whereas in 1931

the census had had to be organised in no less than fifteen provinces and twenty groups of States and Agencies, some of the latter having had a multiplicity of independent census agencies. A reduction in the number of units together with greater uniformities in the administrative pattern, increase in literacy, greater facilities of transport and communication contributes to welcome evenness in the texture of investigation and measurement and ensures a greater degree of comparability. Statement 6 shows the ranking of States and Union Territories in order of population and area.

STATEMENT No. 6

Ranking of States and Union Territories in Terms of Population and Area, 1961 and 1951

Rank in Population	Name of State	Percentage of Union Population	Percentage of Union's Area	Rank in Area	Rank in Population in 1951
1	2	3	4	5	6
1	Uttar Pradesh	16.81	9.65	4	1
2	Bihar	10.59	5.71	8	2
3	Maharashtra	9.02	10.08	3	3
4	Andhra Pradesh	8.20	9.01	5	4
5	West Bengal	7.96	2.87	13	6
6	Madras	7.68	4.27	10	5
7	Madhya Pradesh	7.38	14.54	1	7
8	Mysore	5.38	6.34	6	8
9	Gujarat	4.70	6.13	7	9
10	Punjab	4.63	4.01	11	10
11	Rajasthan	4.60	11.22	2	11
12	Orissa	4.00	5.11	9	12
13	Kerala	3.85	1.27	15	13
14	Assam	2.71	4.00	12	14
15	Jammu & Kashmir	0.81	..	..	15
UNION TERRITORIES					
16	Delhi	0.61	0.05	22	16
17	Himachal Pradesh	0.31	0.92	16	17
18	Tripura	0.26	0.34	19	18
19	Manipur	0.18	0.73	17	19
20	Nagaland	0.08	0.54	18	21
21	Pondicherry	0.08	0.02	24	20
22	N. E. F. A.	0.08	2.67	14	..
23	Sikkim	0.04	0.23	21	22
24	Andaman & Nicobar Islands	0.03	0.27	20	23
25	Dadra & Nagar Haveli	0.01	0.02	23	..
26	Laccadive, Minicoy & Amindivi Islands	0.01	0.001	25	24

*Estimated population of India as on 1-7-66 is 496.08 million ('The Registrar General, India, Newsletter, pp. 17-18, Vol. III, No. 4, October 1967).

Already in 1951 the Registrar General indicated that North-West India in the thirty-year period, 1921-51 was increasing at the fastest rate, closely followed by West and South India, while North (U.P.), East and Central India were growing by only two-thirds or less of the rates of the three regions.

2.13 Statement shows that the population during 1951-61 grew 61 per cent faster than the rate at which it grew in 1941-51. The States which have contributed more than others to this unprecedented increase are listed in Statement 7.

STATEMENT No. 7
States Arranged in Diminishing Rate of Increase During 1951-61

State	Rate of Growth		Rate at which rate of growth has risen during 1951-61
	1961	1951	
(1)	(2)	(3)	(4)
Assam . . .	34.45	19.28	78.7
West Bengal . .	32.79	13.22	148.0
Gujarat . . .	26.88	18.69	43.8
Rajasthan . . .	26.20	15.20	72.4
Punjab . . .	25.86	0.21	12,214.3
Kerala . . .	24.76	22.82	8.5
Madhya Pradesh	24.17	8.67	178.8
Maharashtra . .	23.59	19.27	22.4
Mysore . . .	21.57	19.36	11.4
Orissa . . .	19.82	6.38	210.7
Bihar . . .	19.78	10.27	92.6

2.14 Even as there are areas of high density where a greater proportion of the population is concentrated in a comparatively small proportion of area, there are well marked areas of high rates of increase that are generally higher than the

average for India. A relay of areas of varying densities on those of varying rates of increase would be most revealing on the level of the taluka or tehsil, but since that would be too elaborate for this short account, a broader relay with the district as unit has been attempted which yields its own rewards also. It shows that isohyets of varying densities freely cut across the boundaries of States, and generally conform to natural features. For example, the region of highest density, except that of Kerala is still the Indus-Jamuna-Ganges Valley and the West Bengal basin. Stemming from the narrow strip of Gurdaspur, Amritsar, Jullundur and Ludhiana in the north-west, the broad belt of Uttar Pradesh merges with North Bihar and finally with West Bengal, density in the entire region being seldom below 193/sq. km. (500 per square mile), and often above 386 (1000) in spacious bands astride the river. The central and Deccan plateaus delineated by Mehindargarh (Punjab) in the north to the Nilgiris (Madras) in the south, Santhal Parganas in the east and the Arabian sea in the west are well under a density of 193 (500) in the entire territory except for Ahmedabad, Kaira, Baroda and Surat (Gujarat), Greater Bombay and Kolhapur (Maharashtra), Hyderabad, Guntur, Krishna, West Godavari, Srikakulam (Andhra Pradesh) and Bangalore in Mysore. Within this territory again, there are three large continuous areas with still lower density [all below 77 per sq. km. (200 per square mile)], that may be described as the western desert and lowlands, the Madhya Pradesh Teak and scrub forests and south-eastern Hill and Upland Forests. The first consists of the desert districts of Rajasthan (bounded by Ganganagar in the north, Sirohi in the south, Nagar in the east and Jaisalmer in the west) and the lowland districts of Kutch and Surendranagar of Gujarat. The second and Central area starts with Tonk of Rajasthan in the north-west and embracing Chittorgarh, Bundi and Kotah of Rajasthan runs into Morena, Shivpuri, Guna, Vidisha, Raisen, Dewas, West and East Nimar, Hoshangabad, Betul, Chhindwara, Seoni, Mandla, Shahdol, Damoh, Chhattarpur, Panna, tapering off to Sidhi and Surguja all in Madhya Pradesh. The third area straddles four States and covers Adilabad (Andhra Pradesh), Chanda (Maharashtra), Baster (Madhya Pradesh) and Koraput, Kalahandi and Bouda-Khondmals (Orissa). Statement 8 shows figures of density distribution related to proportion of population in each density range. Although the proportions for India as a whole are not too depressing, there are frequent extreme in peaks and troughs.

STATEMENT No. 8
Proportion of Population Related to Proportion of Area in Different Density Ranges in India, 1961
(Excludes Jammu & Kashmir)

State	Density range					
	0-200	201-350	351-500	501-750	751-1000	1000+
(1)	(2)	(3)	(4)	(5)	(6)	(7)
INDIA						
(a) Percentage of population to total population	8.40	23.19	14.64	21.20	14.46	18.11
(b) Proportion to total area	30.34	32.94	13.23	12.62	6.32	4.55
1. Andhra Pradesh (a)	2.81	47.20	18.12	26.14	5.73	..
(b)	5.88	62.23	14.64	15.26	1.99	..

STATEMENT No. 8—Contd.

(1)	(2)	(3)	(4)	(5)	(6)	(7)
2. Assam	(a)	11.08	13.17	36.57	39.18	..
	(b)	48.15	10.46	23.00	18.39	..
3. Bihar	(a)	..	12.32	10.17	13.58	29.01
	(b)	..	28.26	15.86	12.90	24.66
4. Gujarat	(a)	6.94	34.94	18.54	30.00	9.58
	(b)	30.11	37.70	12.95	15.61	3.63
5. Kerala	(a)	..	..	..	20.78	22.00
	(b)	..	..	..	33.80	26.17
6. Madhya Pradesh	(a)	44.39	51.30	1.98	2.33	..
	(b)	58.67	39.46	1.01	0.86	..
7. Madras	(a)	..	..	8.40	73.87	9.64
	(b)	..	..	11.59	79.61	7.43
8. Maharashtra	(a)	3.13	46.40	35.93	4.94	..
	(b)	7.75	57.48	30.97	2.64	..
9. Mysore	(a)	7.59	42.11	39.68	..	10.62
	(b)	12.74	51.52	31.59	..	4.15
10. Orissa	(a)	17.22	35.97	21.30	25.51	..
	(b)	31.99	42.15	14.66	11.20	..
11. Punjab	(a)	0.10	12.82	35.94	32.50	18.64
	(b)	10.00	21.80	35.06	23.39	9.75
12. Rajasthan	(a)	43.51	40.95	15.14	..	..
	(b)	68.91	24.64	6.45	..	..
13. Uttar Pradesh	(a)	1.34	7.83	4.02	23.78	32.65
	(b)	9.74	18.86	6.41	22.53	24.63
14. West Bengal	(a)	..	..	..	18.13	22.99
	(b)	..	..	..	31.59	28.79
UNION TERRITORIES						
15. Himachal Pradesh	(a)	59.81	28.44	11.75	..	..
	(b)	81.89	13.99	4.12	..	..

2.15 Statement 9 relates the States and the number of districts in each which registered more than 20.5 per cent increase during 1951-61

(the average for all India) with their respective densities in 1961 and illustrates how the highest increases have generally occurred in areas of low density.

STATEMENT No. 9

States, Showing Number of Districts of Varying Densities in Each, Which Recorded Increases Above 20.5 per cent During 1951-61

State	Less than 200			200—300			300—500			Over 500		
	(a) 21—25	(b) 26—30	(c) Over 30	(a) 21—25	(b) 26—30	(c) Over 30	(a) 21—25	(b) 26—30	(c) Over 30	(a) 21—25	(b) 26—30	(c) Over 30
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Andhra Pradesh	1	..	..	1	..	1	1	..	..	..	..	..
Assam	..	2	2	..	..	..	1	..	3	1	..	?
Bihar	..	..	..	..	..	..	2	..	..	..	1	2
Gujarat	1	..	2	1	4	1	2	1	1	2	1	1

STATEMENT No. 9—Contd.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
	..	..	..	..	..	..	..	..	..	1	2	3
Madhya Pradesh	11	7	3	10	3	1	4	..	..	1	..	..
Madras	..	..	..	..	..	..	..	..	1	2	..	..
Maharashtra	..	..	..	6	2	..	4	3	..	1	..	1
Mysore	..	..	1	..	1	3	4	..	..	..	..	..
Orissa	..	..	..	1	1	1	..	..	..	1	1	..
Punjab	..	..	1	..	..	1	1	2	3	..	3	1
Rajasthan	5	5	3	4	..	2	2	2	..	..	..	..
Uttar Pradesh	..	..	..	2	..	1	2	..	..	5	..	..
West Bengal	..	..	..	..	..	..	..	..	..	..	4	10
Total for 14 States	18	14	12	25	11	11	23	8	8	14	12	
		44			47			39			46	

TOTAL : 176

Jammu & Kashmir has been omitted from this statement because no census was taken in 1951. It will appear that 176 (or 58 per cent) districts out of a total of 303 in 14 States have registered an increase above 21.37 per cent in the decade. Out of these 176 as many as 130 have densities below 193/sq. km. (500/sq. mile), of which 44 have less than 77/sq. km. (200 per square mile), 47 between 77 and 116 and 39 between 116 and 193. In as many as 66 districts with densities below 193 the population has increased by 21 to 25 per cent during the decade, while 33 districts have increased by 26 to 30 per cent, and 31 more by over 30 per cent. This means that except for 46 districts which have either had high densities from before and a few more which have seen fresh colonisation in rural areas (e.g. Bastan in Madhya Pradesh) or a sudden onrush of migrants into new industrial areas (e.g. Bhillai in Durg) during the decade, spectacular increases have occurred mostly in sparsely populated rural areas and not such high density areas as the Indus-Jumna-Ganges Valley, the coastal areas of Andhra Pradesh or the State of Madras. Then again, out of the 46 districts of high density, increases beyond the average for India are in some due either to immigration (at least 2 in Assam and 10 in West Bengal) or accelerated urban increase (Indore in Madhya Pradesh; Kolhapur in Maharashtra; Ludhiana, Ambala, Rohtak and Gurgaon in Punjab; Agra, Etawah and Kanpur in Uttar Pradesh; Burdwan, Hooghly, Howrah and 24-Parganas in West Bengal). All this confirms the impression that rural areas previously in the thrall of scarcity or epidemics are now having their go at high spurts of population increase.

The statement further suggests that, although areas of high increase are fairly distributed all over the country, yet there are appreciable variations in the rates of growth among zones and states and even among well-defined areas within a state. The picture is more a mosaic than a uniform tone.

Thus one would have expected Kerala with her high literacy and pressure of population to have grown at a lower rate, as apparently has happened in Madras, the low rate of which further suggests appreciable migration to various parts of India, Tamil labour being in the habit of migrating by whole families even for seasonal construction work. Increases during the decade in all out of 15 major states, and more spectacularly in the union territories, may pardonably conjure up a picture of a basin rapidly filling up, not only in the depressions like Gujarat, Madhya Pradesh, Orissa, or Rajasthan, but even in the rim, like Assam, West Bengal, Kerala, Maharashtra, Punjab. The increase in Assam beyond the average for India may be reasonably explained by immigration of labour into plantations, mines, oil areas, railway projects, and road projects as well as immigration of both communities from East Pakistan. The increase in West Bengal may similarly be explained by the acknowledged influx of displaced persons from East Pakistan, Tibet, Nepal and other places, by the exceptional increase of population in centres of railway and communicational expansion, in the expanding industrial centres around Asansol and Calcutta, in the newly-established industrial and multi-purpose project centres like Asansol, Durgapur, D.V.C. and Mayurakshi basins, all of which have attracted immigrants from outside and the steady and appreciable perennial trickle of immigrants into the Calcutta Industrial Region. An examination of the 1961 census figures of East Pakistan suggests that about two million persons left that country during 1951-61 mostly for West Bengal, Assam and Tripura which accounts for part of the extraordinary increases in the latter areas.

2.16 The answer to the high population increase over the last four decades is not far to seek. In 1881 the Census Actuary computed a birth rate of 50.5 for Bombay, 47.9 for Bengal and 50.8 for Central Provinces and effective death rates of 42.5, 39.9 and 42.8 for the general population. He estimated expectation of life at birth at 23.67 for

males and 25.58 for females (24.63 for general). In 1891 the rates did not show any marked change, the overall figures for India being a birth rate of 48.8 and death rate of 39.6, expectation of life at birth for males being 24.59 and for females 25.54. In 1911 the birth rate for combined provinces was still estimated at 51.3 and the death rate 43.1 while the expectation of life at birth had decreased to 22.59 for males and 23.31 for females from 23.63 and 23.96 respectively in 1901. In 1921 as a result of minor epidemics culminating in the great influenza epidemic of 1918 the birth and death rates stood very close to each other at 49.2 and 48.6. These rates diminished to 46.2, 45.2 and 39.9 for births and 36.3, 31.2 and 27.4 for deaths in 1931, 1941 and 1951 respectively. The expectation of life at birth 1931 was estimated at 26.91 for males and 26.56 for females; for 1951 the corresponding figures were 32.45 and 31.66. Although the current infant mortality rate is still quite high the expectation of life at birth in 1961 would be a little more than 45; in other words, over the last decade the expectation of life must have increased by more than a year every year.

2.17 All this means that although our agriculture is still greatly dependent on rainfall, a vastly improved network of intelligence and communication together with wise anticipation and laying by of reserves and buffer stocks has banished the scourge of famine which took its last heavy toll even as late as 1943. The Government has also put a stop to internecine strife and banditry, which along with the disappearance of stark famine and scarcity, has reduced nomadism or homeless wandering and encouraged settlement and growth in sparse areas. The control of epidemic diseases has made rapid strides since 1918 and while plague is now practically a thing of the past, cholera and small-pox, though quickly contained wherever detected render our hold on the death rate still rather tenuous. Malaria, which up to 1948, constituted the major public health problem in India from the point of view of both morbidity and mortality, began to give way around 1950 and crumpled up in 1954. A massive BCG campaign has attacked tuberculosis but the lack of protected potable water and deficiency of protective foods render the population peculiarly

vulnerable to undermining attack of diarrhoea, dysentery and typhoid. There is the large group of intermenate illness called dietary diseases one variant of which nutritional diarrhoea frequently takes heavy toll of adult lives, while another which may be called weaning diarrhoea, takes heavy toll of infants from 8 or 9 months to about 2 years' of age, and pushes up the mortality rate at age 1 to a startlingly high figure. It seems therefore that the country has but won only the spectacular half of the battle; viz., reclaiming the population from the jaws of death. But the other, slow, dogged, undramatic half still remains; the battle of nutritional deficiency and vulnerability to disease. In short, although our mortality is low by former standards, our morbidity is nevertheless distressingly high.

2.18 How precarious our improving survival still is can be judged from our steadily decreasing sex ratio (number of females per 1,000 males) from 1901 to 1961. Barring Kerala where the ratio slowly but steadily improved until 1951, and Punjab and Rajasthan where a fluctuating ratio may have been due to emigration of males to other parts of India, every other major State has registered a slow decline. In former decades, famines, epidemics and even internecine strife and outlawry tended to be selective of males and specific age groups, although it is difficult to say whether this selectiveness was more in the reporting than real. As a result; selective survival at certain ages would disturb the age structure of the population. But from now on, unless there is a change in the fertility pattern, a mere reduction in mortality will still keep the age structure and sex ratio at the various ages on an even keel. The deteriorating sex-ratio can only be regarded as a blot on our social health, for it indicates that the risk to female lives at most ages has not improved upon that to male lives; on the contrary, it seems to emphasize that demographically we have not yet entered upon the modern industrial age with its complementary characteristics of increased risks to male and reduced risks to female lives. Rather, we seem to be on the reverse. Statement 10 will bear out. These remarks will seem to apply to all those countries in the ECAFE Region where the female ratio is substantially less than par.

STATEMENT No. 10
Expectation of Male and Females lives at 0, 10, 20, 30, 40, 50 & 60 in the Census
Years 1881-1951 for all India

Years	0		10		20		30		40		50		60	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F
1881	20.67	25.58	34.00	33.42	28.55	28.44	23.80	24.48	18.90	20.03	13.93	14.96	9.25	9.79
1891	24.59	25.54	35.46	34.40	29.24	29.28	23.66	24.69	18.75	20.20	14.28	15.59	10.12	10.87
1901	23.63	23.96	34.73	33.86	28.59	28.64	22.90	23.82	17.91	19.12	11.55	14.50	9.53	10.02
1911	22.59	23.31	33.36	33.74	27.46	27.96	22.45	22.99	18.01	18.49	13.97	14.28	10.00	10.11
	0-9		10-19		20-29		30-39		40-49		50-59		60-69	
1921	19.42	20.91	29.64	29.21	25.46	25.41	21.64	21.78	17.93	18.31	14.30	14.95	10.67	11.67
			10		20		30							
1931	26.91	26.56	36.38	33.61	29.57	27.08	23.60	22.30	18.60	18.23	14.31	14.65	10.25	12.78
			10-19		20-29		30-39		40-49		50-59		60-69	
1941	32.09	31.37	41.20	38.56	35.02	33.11	29.03	27.89	23.27	22.91	17.77	18.17	12.59	13.68
1951	32.45	31.66	38.97	39.45	33.03	32.90	26.58	26.18	20.53	21.06	14.89	16.15	10.13	11.32

2.19 Even allowing for the argument that the differences between the male and female rates are so slight that they may be attributed wholly to defective age returns or computational error, the fact remains that at each successive census the enumeration of females and their ages has, if anything, improved rather than worsened. Whatever the reasons, the prospects of survival of females seem to have been ever so slightly better before 1921 than after, and while the risk of male deaths at most ages seems to have steadily decreased especially after 1921, there has been no corresponding improvement in female deaths. In the first place, a larger proportion of boys than girls seems to be born in this country than in the West. Secondly, girls, in the first few years of their life, still seem to suffer from greater neglect than boys, as a result of Nature's balancing action of taking away more boys than girls in the first years of life does not properly coming into play, and the survival of girls never seems to draw even with that of boys. Thirdly a heavy toll of female lives is taken in the earlier period of the reproductive age, that is, between the ages of 15 and 34. The toll is so heavy that the difference between the male and female population grows remarkably rapid and wide and this gap is never made up in middle or old age. What is more, proportionately greater deaths occur among females even between the ages 35 and 54 than is commonly believed. All these factors help to widen the male lead at birth with the age, which our still modest expectation of life does not give much of a chance to narrow. The following extracts from the actuarial reports of 1881 and 1911 will therefore come as a shock to a person who would like to believe that it has been always like this before.

"A comparison of the results given for the two sexes will show that female life in India as in England is on the whole better than male life. The mortality in the first few years is considerably less, during middle of life, it is somewhat more and again, after about the age 40 it falls below the male mortality. The average duration of female life is considerably greater than that of males at birth but falls below from age 4 to 21, after which female life is better than male to the close of the table".

(Report of 1881, Paragraph 232).

"The expectations for female lives in all India are only slightly higher than for male lives, at all ages, the excess being 0.72 years at birth, diminishing to 0.11 at age 60; whilst in England, the superior expectation of female lives is 3.98 years at birth and 1.43 at age 60."

(Actuarial Report for 1911, paragraph 246).

2.20 Another interesting feature of our sex ratio is its uneven distribution throughout the country; so much so that there are distinct tracts of particular ranges cutting across political and administrative boundaries and forming their own regions. Thus, for example, there are recognisable geographical bands where there are more than 100 females per 100 males. If districts and states are arranged according to the sex-ratio, a curious pattern, except for Eastern Madhya Pradesh and Bihar largely on account of their tribal populations, will seem to emerge on either side of latitude 22°. It will seem that the sex ratio is appreciably lower than north of latitude 22° than south of it. This is reflected also in the sex ratio of urban areas in

the north and south. While very few towns (not certainly cities) in the north have their sex-ratio anywhere near par, there are few towns or even cities in the south, especially in the States of Andhra Pradesh, Mysore, Kerala and Madras where the sex ratio even drops much below 900 females per 1000 males. This is a matter of much sociological interest to urban planning in India.

2.21 It is commonly imagined that an unfavourable proportion of females ought to help in a lower growth rate. The story of population growth in the last thirty years certainly gives the lie to such a hypothesis because it is the areas of low sex ratio that have seen rapid growth. This suggests that internal migration has come to play an increasingly important role. Deliverance from famines, epidemics and endemics has not only helped survival but reduced such phenomena as early widowhood and impairment of fecundity, thereby prolonging fertile unions and reducing miscarriages, abortions, still births and infant mortality, which in their turn have more than counter-balanced the benefits derived from a slight but noticeable increase in age at marriage, particularly in urban areas. Sundburg's age categories still afford a rule-of-thumb measure of the trends of a population, particularly with regard to his youngest age group 0-14. According to him, the proportion of this age group per 1000 persons should be around 400, 330 and 200 in progressive, stationary and regressive populations respectively. Figures quoted earlier in this paper provide ample evidence that population not only in India but in most countries of the ECAFE region is still progressive and youthful with a steady increase in expectation of life, contrary to the European experience of a stationary or even regressively ageing population with a rising expectation of life.

3. *Summing up*: Thus we find that except for Japan, the concept of what has come to be known as 'stable population' applies to almost all countries in the ECAFE region. A 'stable population' is a hypothetical model of a population in which both fertility and mortality are assumed to have been constant or steady for an indefinite past period. In such models the age structure of the population is uniquely determined by the assumed combination of fertility and mortality functions. It is now however established that a unilateral reduction in the death rate does not bring about any substantial change in the age composition of the population but such changes are more properly the functions of the fertility rate. Since in the whole region even birth rates and infant mortality are not very reliably known, except for countries like Japan and Ceylon, more than one assumption relating to future fertility patterns are generally made to project the population in the future. In most models it is usual to assume various degrees of declining fertility. The Planning Commission, too, in its Third Plan has made some assumptions. For instance it has assumed a general fertility rate of 189 per thousand to continue up to 1971 and then declining by 10 per cent by 1976. It is of course quite likely that the general fertility rate will be a little higher than 189 during the coming decade. It seems there is a case for balancing assumptions of decreasing fertility with the possibilities of factors pulling in the opposite direction, such as mentioned before. What I wish to make out is that assumptions are perhaps more fathered by a wish than by indisputable trends. For it can be argued quite plausibly that the possibilities of

accelerated growth have not yet exhausted even in countries like India and Pakistan which have struck unprecedented heights in 1961. The examples of the Philippines, Thailand and Ceylon are before them. Mortality can and should still further decrease in Indian subcontinent, while fertility, owing to improved survival and better health, is still capable of an upward trend. The assumptions made in the Third Plan are thus still in the nature of a wish that may take longer in the fulfilment.

4. *Inferences*: This means that the centre of population in the ECAFE Region will further gravitate toward and probably get securely lodged in the Indian subcontinent. The second reasonable inference is that the ratio of population aged 0-14

will continue to be in the region of 40 per cent indefinitely, which will mean continued increments in the unproductive population for a prolonged period and infructuous cumulative expenditure on public health services, primary education, maternity and child care and so on. The third reasonable inference is that these countries will be compelled to continue large investments in agriculture at the expense of industrial development, as a consequence of which urban growth will be retarded. This retardation in its turn will slow down a very desirable redistribution of population among the primary, secondary and tertiary sectors of industry with its inevitable consequences on the national income.

Age Composition, Marital Status, Fertility Rate, Vital Statistics and Their Influence on Housing Demand*

by

Shri. S. P. Jain†

1. Population conglomerates into units of household, which shared housing accommodation. The number and characteristics of the members of sex-age and marital status under the impact of economic and social factors determine the demand for houses of various sizes and types. It is not intended to discuss here the social, psychological and physical aspects of housing, which express themselves under these headings to create the demand. The approach is to discuss how to assess housing needs starting with the facts that the total population need be housed and that the sex, age and marital characteristics have a bearing on the demand. The above topic, may more aptly be described as the use of population data in assessing present and future housing needs. The treatment aims mainly at dealing with the subject under Indian conditions which materially differ from those in the Western countries. However, the situation in the Western countries is touched upon without going into details only to bring out the essential nature of the problem.

Before taking up the subject proper, some relevant basic facts may be recounted, so that the problems may be seen in their proper perspective. The term 'housing', needs to be considered in the sense of needs for adequate housing of the population as distinct from the demand for housing in the market sense. The former is determined mainly by factors like size and composition of households, degree of urbanisation, climatic, cultural and social conditions as well as by actual housing situation and the extent to which economic resources and population attitudes to housing permit improvements, whereas the latter is the outcome of balancing of forces of availability of housing and ability to pay for it, which influence household formation. No doubt the two are inter-related.

2. Housing is essentially a welfare consumer item. It is the basic function of the Government to provide people with shelter along with other essential needs of food, clothing, education, public health, etc. It has an important influence on attitudes, health and efficiency of labour force, which explains the great emphasis of the Government of India on schemes of subsidised industrial housing. However, its direct effect in increasing output per unit of investment is limited. Compared with other types of investment, which provide more immediate and substantial increases in output, outlay on housing can be postponed without much adverse effect on the growth of total output. Then again, demand for housing is relatively elastic. If the shortage is severe and persistent, it would increase in intensity with time; otherwise effort to improve housing conditions can be largely phased.

However, a certain amount of expenditure is essential, if for no other pressing reason than considerations of social planning. Indian Government schemes of low and middle income group housing, rural housing, slum clearance and sweeper's housing may be taken as falling under this class. A definite policy on housing is an important element of social and economic developmental programmes. Housing investment forms a substantial portion of the capital of the country and its need ranks as a notable item in the capital requirements and disposition of resources. In the programmes of the more prosperous countries of the West, housing needs figure very prominently. This seems to have coloured the outlook of the Western experts on the problems of development in Asian countries. In the UN Seminar on "Evaluation and Utilisation of Population Census Data in Asia and the Far East" held in Bombay in 1960, housing formed an item of discussion but not food, which is so important for the hungry millions on this side of the globe. In the present phase of Indian development, austerity being the controlling factor, the general approach is tackling Indian housing situation, which is far from satisfactory and in no way approaches the Western standards, is aided self-help. Subsidies and loans are offered to encourage building by employers, local bodies and private individuals. The construction of houses by the Government is for a very limited section of their employees only.

3. The above remarks should not be taken to imply that there is no immediate need to study the problem of housing needs in India, since the necessary finances for satisfying them are not available. Systematic estimation of housing needs follows as an immediate consequence of the desire to improve housing conditions or at least prevent their deterioration, since the problem of finding resources can be realistically tackled only after the amount needed is known. The estimates give an idea of the magnitude of the work to be done by way of housing construction in the country as a whole in order to improve or maintain the existing position. They indicate how much safe, sanitary and acceptable housing will be needed at present or at some future date, if all the families which want housing are to have decent homes.

3.1 The word 'decent' needs an explanation. It is related to the desirable standards of certain housing conditions in terms of dwellings, their size, facilities, repairs, etc. Housing needs may, therefore, be defined in terms of the number of dwellings of different sizes to be built, facilities to be provided and repairs to be effected in order to improve or maintain housing conditions according to the nationally adopted standards. The standards

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determine the type of population data needed for estimating housing needs. A simple standard may be in terms of so many persons per room. Glass and Davidson in their study of housing needs in U.K. consider "a room per person", not counting kitchens as rooms, as a very low minimum standard. According to U.N. recommendations, kitchens, habitable attics and servant's rooms, etc. are considered as rooms, while corridors, verandahs, etc. are not so counted. A variant of the standard may be in terms of floor space per person as in Japan. If the standard is one room per person, the number of persons in the country will give the total number of rooms required and the distribution by size of the household or families entitled to separate dwellings will show the number of dwellings by size in terms of rooms. If the standard is more complex, more detailed information on household composition is needed. The following is an example, which may actually be relevant in the case of some of the Western countries :

"Each household should have a kitchen, one bedroom for each married couple and each unmarried adult unless he or she has a sibling of the same sex in the household, one bedroom for all children of each sex up to the number of say, two or three, one living room for the first three members of the household and an additional room for each five members thereafter."

4. There may be as many variants of the standard as there are countries but basically they are built on the following two accepted criteria :

- (i) Each social unit—the family or the household—should dispose of a separate dwelling ;
- (ii) Each dwelling should be large enough to allow a fair amount of space and a certain degree of privacy for all occupants, and it should offer the necessary facilities and adequate shelter against unfavourable climatic conditions."

4.1 There is little doubt that the standard of one room per person is a far off ideal for India. It is not free from doubt whether it is a correct ideal in the Indian conditions of life. Apart from the fact that the income level rules out such a standard, the climatic conditions do not require a room per adult person. There has to be a greater emphasis on verandahs and courtyards, where the people spend a greater part of their life. Sleeping in the open and sitting out in open air in the courtyards and verandahs is very common among the general run of people. For a major part of the year, the need for open space is greater than for a living room. Open spaces are required to provide common meeting places and children's playgrounds. A room for each married couple is being increasingly recognised as a necessity among the wealthier classes but even among them there is no objection to put all the other grown ups and children in common rooms. It is an interesting study to find out how the bulk of the population, with its joint family system, meets the need of the married couples for privacy without a separate room for each. A room is needed primarily for storing food, clothes and articles of personal use. In the West married couples generally desire to live in separate dwellings. The standard is that a separate housing unit should be provided for :

- (i) a couple, formally married or living in consensual union, together with their children up to a given age, say 18 years;
- (ii) a widowed or divorced or separated person together with his or her children up to the given age; and
- (iii) a single person over a prescribed age.

In India with its joint family system the predominant note is that married couples continue to live with their parents and widows and widowers live with their relatives rather than separately. There may be slight variations with age, religion, income and other characteristics. According to NSS results, only 4% of the household in the rural areas in 1951 had no couple. Of those that had a couple, 44.5% had one, 30.5% two, 19.1% three and the remaining 5.9% more than three couples. The social outlook of the people being what it is, the standard of one room per person is unrealistic.

4.2 As at present, an Indian housing unit may have only an improvised kitchen; bath and toilet may be common with other units, and a number of men and women, married and unmarried, may be huddled into a room. There are no commonly accepted standards in this regard but attempts are afoot to evolve one with the object of changing housing habits so as to improve the social and economic efficiency of a household by offering decent accommodation. A number of committees have considered the problem and made recommendations about immediately desirable standards to alleviate the conditions of the poorly housed section. Among them may be mentioned the Bhole Committee (1944), Environmental Hygiene Committee (1949), Housing Sub-Committee of the National Planning Committee, Industrial Housing Sub-Committee of the Standing Labour Committee, Railway Board Committee, Madras Provincial Housing Committee, Housing Panel on Greater Bombay Scheme and Autumn Planning and State Planning Officials Conference (1955). All of them rightly emphasise on adequate lighting and ventilation, height and spacing of buildings, sufficiency of land for general use and provision of amenities like water supply, drainage, sanitation, verandah, courtyard and kitchen. The consensus is that one room tenement should be restricted for occupation by single person only and should be adequately provided with common kitchen, bath and latrine. They also agree that the minimum size of dwelling may be 2 rooms, a verandah, a kitchen and a latrine, but where finances do not permit, a dwelling unit with a single room may be constructed in the initial stage provided definite provision for the addition of a second living room is made in the initial layout and design of the unit. They have also given attention to the question of minimum floor space. It is suggested that a living room for more than one person should be at least 11.15 sq. mt. (120 sq. ft.) in area and that for a single person 9.29 sq. m. (100 sq. ft.). The opinion seems to agree that the floor space per adult person should be 5.57 sq. m. (60 sq. ft.) but 4.64 sq. m. (50 sq. ft.) may be adopted as the minimum, the optimum being 9.29 sq. m. (100 sq. ft.). The space for a child is suggested at half of it. The floor space for a household of 4 persons is recommended to be 23.22 sq. m. (250 sq. ft.), for 5-6 persons 33.14 sq. m. (360 sq. ft.) and 7-8 persons 39.02 sq. m. (420 sq. ft.) However, none of the recommendations recognise relationship, or the marital

status of the members as the basis for defining housing needs. The Western ideal of a biological family being the unit of housing is not adopted for specifying the number of rooms and the type of dwelling needed. However, it seems proper to prescribe even as desirable objectives, something on such lines within the Indian system of joint family. Different categories, which should have a separate housing unit, should be laid down, taking due note of the actual or the desired social conditions of the country, the differences in types of families and households and the climatic, geographic, religious and socio-economic variations. The housing needs of the various categories, based on marital status, household relationships, age, etc., should also be prescribed. To determine them on an objective basis, sample surveys may be conducted for investigating the attitudes of the members of household towards their housing, and the circumstances, which make it socially desirable for them to live together or separately. Hence, in this discussion attention will be given to the impact of such factors in assessing housing needs.

4.3 The present position in regard to the family composition and relationships may be seen from 1951 census data. They show the following position in regard to size distribution and relationship composition of households based on a sample of one in thousand households. About 34% of households had 3 members or less, 43% 4-6, 17% 7-9 and 6% 10 and over. The percentages are not very different for rural and the urban areas. Composition per 1000 households was—heads of households and their wives 910 males, 807 females, sons and daughters of the heads 1085 males, 806 females, other relations 484 males, 720 females and unrelated persons 40 males and 28 females. Again, rural and urban figures are very much the same but there are important variations by States. In India, if there is an adult male member, he will be considered to be the head of the household rather than any other elderly woman, however high up in the order of relationship she may be. On this basis, the figures can be interpreted to mean that in 90% households the heads were males and only in 10% they were females. 1961 Census tabulations will be more revealing. They will show for a 20% sample of households the number of households and their population by sex classified by households of size 1 member, 2-3 members, 4-6 members, 7-9 members and 10 members and over. They will also give sex composition of the households by (i) head of household (ii) spouses of the head (iii) married relations (iv) never married, widowed and divorced or separated relations and (v) unrelated persons. Besides, they will furnish the much needed information on housing conditions. They will show the number of households in houses used as dwellings, shop-cum-dwelling, workshop-cum-dwelling and dwelling with other uses classified by tenure status as owned or rented. They will also give distribution of census houses wholly or partly used as dwellings by wall and roof material. Another table will give an idea about congestion and overcrowding. It will show the number of households and their population by sex, classified by households with (i) no regular room (ii) one room (iii) two rooms (iv) three rooms (v) four rooms and (vi) five rooms and more. Separate tables will be prepared for each slum area of Calcutta, Bombay, Ahmedabad and Bangalore and at least one congested city area in each State. Some of the needed information on the housing situation can be obtained by a sample

tabulation of census questionnaire, while some more may have to be collected through special surveys.

4.4 An idea of the lines on which the recommendations of the various committees mentioned in para 4.2 above have been actually followed, may be had from the following norms recommended for subsidised housing scheme for industrial workers. The specifications prescribed for houses for allotment to workers, whose income does not exceed Rs. 250 per month are as follows :—

(i) Living room	11.15 sq. m. (120 sq. ft.)
(ii) Multi-purpose room (to be used for cooking and other purposes)	7.80 sq. m. (84 sq. ft.)
(iii) Bath	1.49 sq. m. (16 sq. ft.)
(iv) Latrine	1.12 sq. m. (12 sq. ft.)
Total	20.76 sq. m. (232 sq. ft.)

The specifications for regular two-roomed houses, to be offered for allotment to workers in the income range of Rs. 251-350 per month, are as follows :—

	Single storeyed	Double and multi-storeyed
(i) Room No. 1 }	20.07 sq. m.	18.58 sq. m.
(ii) Room No. 2 }		
(iii) Kitchen, verandah and calculation space	9.29 sq. m.	9.10 sq. m.
(iv) Storage	1.12 sq. m.	1.12 sq. m.
(v) Bath room	1.49 sq. m.	1.49 sq. m.
(vi) Latrine	1.12 sq. m.	1.12 sq. m.
TOTAL	33.09 sq. m.	31.41 sq. m.

The specifications under low income and middle class housing schemes differ only slightly from the above. They do not recognise the size of the household. They seem to have been fixed as compromises between customs, tastes and capacity to pay of the strata of the relevant population and the willingness of the employer to invest in housing. It cannot be said that the subsidised housing scheme is a big success. A major limiting factor is the employer's willingness, but preferences and habits of the individuals and to a small extent the capacity to pay are also important impediments, particularly in the lower income class. There is an acute inadequacy of housing facilities and those who find the accommodation offered as suitable according to their social outlook and habits are not deterred by the factor of size and composition of the household. The social structure and outlook permits them to squeeze in every family size. These remarks may serve to bring out the essential difference between housing demand and need, which should help in a clearer appreciation of the topic of discussion. It is not the purpose of this discussion to deal in detail the problem of housing standards. Enough has been said to show its pivotal position in determining housing needs, the requirement of setting up appropriate Indian standards and the impropriety of making calculations relevant to Western standards.

5. In India, at least for the present, housing problem is primarily urban. In the rural areas, which account for 83% of the population of the country, according to the current standards, housing needs can be satisfied mainly by using local materials and skills. The activities of building and reconditioning a large number of houses in the national extension and community development project areas have demonstrated that with education, guidance, technical advice and financial assistance, to a limited extent, the problem of rural housing can largely be tackled by the 'non-monetised' activity of the villagers themselves. The position may change with the promotion of rural industries and the fuller development of a monetised economy there. Policies location and dispersal of industries are of increasing importance in this connection. As a side light, it may be stated that based on a general consideration of the 1951 Census data and National Sample Survey Seventh Round results, it was estimated that 50 million houses in the rural area would have to be reconditioned or rebuilt.

5.1 In the Second Plan, restricting attention to urban areas, shortage of housing units was estimated from the Census data in a rough and ready manner. Taking an average family to have 5 members, it was calculated that urban population of 62 millions in 1951 needed 12.5 million houses whereas the Census recorded only 10 million houses, which shows a shortage of 2.5 million houses *i.e.* of 20%. According to Censuses, urban population increased by 10.6 million between 1931 and 1941 and by 18.1 million between 1941 and 1951, whereas occupied houses in these decades increased by 1.8 and 1.7 million respectively. These figures show that quantitatively housing shortage increased during 1941-51. Taking into account the assumed growth of urban population during 1951-61 at 33%, and necessary replacements of existing houses and discounting for the estimated construction of dwellings by public authorities and private individuals, it was concluded that the shortage by 1961 would be twice as much as in 1951. In these calculations, expected intercensal rate of urbanisation plays an important part. Increase in urban population is conditioned by two distinct movements apart from the factor of natural increase, which is the difference between births and deaths. One covers the drift of rural population to cities and towns, which were classified as such at the preceding census, and the other relates to subsequent changes in the rural-urban classification of villages and towns. Fairly detailed calculations from the census data are necessary for estimating the magnitude of these two movements. Housing problems are more acutely felt in major towns and cities and estimation of their growth rate required for assessing housing needs becomes more speculative due to the unpredictable future trends in migration, which largely dominate the rate. Methodology of population projection is scheduled to be taken up in a subsequent lecture and hence the point may not be pursued here further, beyond drawing attention to the importance of reliable estimates of population growth even in such rudimentary assessment of housing needs.

6. It will be observed that the above calculations are based on the assumption of an average of 5 member per family. However, a direct assessment can also be made. The census gives directly the figure of households in the country. In 1951 cen-

sus, there were 1236 households per 1000 occupied houses. Accepting the first criterion of housing standards given in para 4, namely, each household should dispose of a separate dwelling, it would appear that housing shortage at the time of 1951 Census was of the order of 23.6%, which is not very different from the estimate made in the Second Plan.

7. While one may be inclined to accept the above calculations as reasonably satisfactory, it is necessary to examine the concepts behind them so as to appreciate how far definitions of house and household primarily drawn up for efficient enumeration conform to those prescribed in the context of housing needs. As may be known, in India before the census enumeration starts, a complete list of census houses and households is prepared to serve as a frame. The unit of reference is a household, which is defined to be the entire group of persons, who commonly live together and take their meals from a common mess, unless exigencies of work prevent them from doing so. The primary object in the Census is to catch every person once and only once, and hence the criterion of relationship does not enter in the definition. By and large the census household comprises normal residents whether present or absent at the time of enumerators visit. Only those normal residents, who would never be present in the household at any time during the census operations (10th to 28th February at the time of 1961 Census), will not be included in that household but will be included in the household, where staying. The number in this exceptional group is extremely small, and hence the census household for all practical purposes represents the social unit having a separate dwelling. A Census house is defined as a structure or part of a structure giving on the road, or a common staircase or a common courtyard leading to a main gate, or enjoying a separate entrance. In 1961 Census alone, houses not used for dwelling purposes were also listed. The number of houses wholly or partly used for dwelling purposes will be available separately, and hence this extension need not blur our discussion.

7.1 The essential features of a housing unit, as recommended internationally, are 'separateness and independence'. It is agreed that an enclosure may be considered as separate, if surrounded by walls, fences, etc, and covered by a roof so that a person, or group of persons, can isolate themselves from other persons in the community for the purposes of sleeping, preparing and taking their meals or protecting themselves from the hazards of climate and environment. Further, an enclosure may be considered as independent, when it has direct access from the street or from a public or communal staircase, passage, gallery or grounds, *i.e.* when occupants can come in or go out of their living quarters without passing through anybody else's premises. It will be seen that an Indian Census house conforms to the international concept of a housing unit. Thus, conceptually, disparity between the numbers of Census households and Census houses represents the shortage of housing units on the premise that each household should be provided with a separate house.

8. Indian calculations are rudimentary and may be held to serve the purpose, if the present is accepted as fairly normal on the whole. If the problem is to be studied with reference to desirable standards, more detailed calculations would be

necessary. Housing needs may be classified as (a) present shortages and (b) future additions. Item (a) measures how much the present housing stock falls short of the nationally accepted standards regarding structures, density of occupation, facilities and installations and provisions of separate housing units for house-holds. They may be divided according to the nature of the causative factor as due to (i) involuntary doubling up with other house-holds (ii) higher density of persons per room (iii) living in unacceptable types of houses, e.g., improvised and not intended for habitation including those without shelter of any kind and (iv) substandard units, e.g., those in need of structural reconditioning, replacement or provision of essential facilities depending on the standards adopted. There is considerable overlapping of needs in this classification but each group is a reflection of different problems and may be considered separately. For (iv) special surveys of housing conditions are necessary but for others census data can help.

8.1 Here, the discussion is with reference to private as distinct from institutional houses. The Census of 1951 showed that 0.08% of rural population and 2.3% of urban population was house-less or living in institutional houses. This time the two will be given separately. However, it is evident that institutional population is very small in India and hence need not attract any special attention in our discussions.

8.2 A method of estimating shortage due to (i) has already been discussed in para 5. It assumes that all doubled-up house-holds will like to have separate dwellings, if more are available. This may not be true. All may not prefer or find it possible to separate out. Separate surveys are necessary to investigate the desire for separate accommodation, ability to pay for it and the likelihood that certain members of existing households, e.g., married couples, widowed persons, etc., will break away and take separate dwellings.

8.3 As already stated, information on the distribution of the number of house-holds and their occupants according to the number of rooms occupied by them will be available from 1961 Indian Census data. This will enable shortage due to (ii) to be studied. The total number of rooms multiplied by the desirable density of occupation gives the population that can be accommodated in the existing housing stock according to the standard set up. The balance of the population divided by the average size of households will give the housing shortage due to factor (ii). Census data can be used to show a two-way distribution of dwellings by the number of rooms and the number of persons in the dwellings. This will indicate the extent to which overcrowding is due to a general lack of dwellings and to inadequate distribution of existing housing stock. Overcrowding may also be estimated on the basis of person per bed-room, area per person, or family composition by age, sex and relationships in relation to the number and type of rooms occupied. Shortages due to (i) and (ii) overlap, since new dwellings which would reduce doubling up will also reduce average density. However, it may be noted that doubling up require new dwellings while average density can be reduced by increasing the number of dwellings or the number of rooms in existing dwellings.

13—3 N. B.O./69.

8.4 The shortage due to factor (iii) is given by the population living in unacceptable types of housing units divided by the average size of house-hold. There is some limitation to its study from the census data. The table in 1961 tabulation programme showing the number of house-holds in the census houses used as dwellings, shop-cum-dwellings, workshop-cum-dwellings and dwellings with other uses will not give the population under each class. It can, of course, be obtained by a special sample tabulation of the census questionnaire.

9. Future additional housing is required mainly to house increase in population. For this purpose, future population has to be estimated, which generally involves the projections of the observed trends in fertility, mortality and migration and assumptions about the future population movements from rural to urban areas. In parenthesis, it may be worth noting that in 1951 Census, sex, age and marital distribution of the population was obtained from a 10% sample but this time in 1961, it will be based on the full count. In connection with estimation of future housing needs, account has also been taken of trends in house-hold formation and some allowance has also to be made for the desired improvements in levels of housing including trends in the preferences of the population for certain types of dwellings. In countries, where each married couple customarily occupies a separate dwelling unit, annual number of marriages largely determines the housing needs. In fact, housing situation has a considerable influence on nuptiality and nationality behaviour of the population, through voluntarily encouraging or delaying marriages and child-bearing. In countries like India, where 'extended family' system prevails—i.e., married sons and daughters customarily living with their parents—it is of little value. Signs of cracks in the system may be seen by some, but considered in the context of the whole country, they do not seem to call for any special notice.

9.1 Properly, the problem requires detailed studies of family building and housing structure. Information is needed on increase or decrease in the number of households of the various sizes and composition due to a given increase in population. Estimation of future housing need involves complicated calculations, for which basic data may not be available. The simplest way of estimating future housing needs is to take them as proportional to the total population. As the need for new housing is related to household formation rather than to population increase as such, it is desirable to base estimates on the expected number of groups, which will need a separate dwelling. To simplify matters such groups may be taken to be reflected by the present number of households, and their average size. Thus, the number of households needed in any year may be obtained by dividing the population estimate of the year by the assumed average size of the house-hold in the year. The latter may differ from the current average size due to changes in the house-hold formation that may be expected to occur in the meanwhile. Possibly, the future average size of the house-hold may be smaller due to reduced overcrowding and availability of houses. Then again, social planning and demographic changes, such as, higher age at marriage and establishment of households by other than unclear families (husband, wife and children) may affect the average. Thus,

estimated housing need should be raised by a certain proportion to allow for the increase in the number of house-hold due to the expected smaller house-hold size.

9.2 If the present level of fertility continues, the number of children will be larger, which will mean increase in terms of size rather than number of housing units. Coale & Hoover in their study in 'Population, Growth and Economic Development in low-income countries' (p. 253) have made some rough calculations of the differential outlays on housing facilities due to different pace of population growth. Starting from their present average of 6.5 persons per urban housing unit, they take the future average to be 5.5 on allowing for the present overcrowding and houseless and institutional population. On the basis that 39% of the population is below age 15, the average will comprise 3,355 adults of age 15 and over and 2,145 children. Taking the average cost per urban housing unit of the present average size and composition to be Rs. 3500, they obtain average cost of housing for an adult to be Rs. 790 and a child Rs. 395, assuming that a child under 15 requires half as much space as a more elderly person. These costs applied to the future composition of the population would yield the total investment on housing needed. By differencing the figures obtained at two points of time, increase in outlay on housing due to increase in population can be estimated. These calculations appear to be limited by the major assumption that the presence of a child in the house entails addition to the housing requirement. This is not valid in the Indian conditions. A more realistic basis would seem to base the estimate on the increase in the adults in a housing unit. Even in this regard Indian customs admit of a fairly substantial increase in adult component of a house-hold without entailing any increase in demand for a housing unit. However, such an estimate may have a value on the basis that the existing level of housing standard is not allowed to deteriorate.

10. Generally, the housing needs of sex, age and marital status groups differ and hence a refinement of method of estimation for the future housing needs would be to base calculations on the projected distribution of the future population by sex, age and marital status. This distribution may be different from that of the existing population due to changes in fertility and migration, the effect of changes in mortality being not so pronounced. Number of house-holds is reflected by the number of heads of household, who are generally between ages 25 to 65. Hence the future housing need may be taken to increase approximately in the ratio of the increase in population aged 25-65, the current housing standards for separate dwelling being taken as satisfactory. The persons in the age group involved in estimating housing needs for the next 20 years, say, are alive at the time estimates are being made. The population of this group can be estimated fairly reliably, as it is affected only slightly by the assumed trend in mortality which is low in most part of the group. The ratio will thus ordinarily vary within fairly narrow limits. In underdeveloped countries, the aged share the homes of others. If due to changes in mortality there is an increase in population aged over 65, it will only mean an increase in the house-hold size. More house-holds will consist of more than one generation. Similarly, an increase in the population below 25 due to changes in fertility or

mortality will increase the house-hold size without affecting their number much. In societies where each nuclear family customarily has a separate dwelling, changes in age at marriage, widowhood and divorce rates within the age band 25-65 may affect the ratio between the number of house-holds and the population in this age group. They are of much smaller consequence in extended family system.

10.1 A refinement would be to base calculations on a more detailed consideration of the sex-age structure of the population. The current ratio of house-hold heads to the population in the various sex-age groups, when applied to the future population of the sex-age group, will yield the number of male and female heads in the different age groups and hence the number of housing units needed. It will be still better if the heads and population both are further classified by marital status. If heads are also classified by composition and size of house-hold, the number of units by size can be obtained. For the sake of simplicity of argument, the current actual composition of house-hold accommodated in a dwelling as well as the size of these dwellings are taken to be satisfactory. However, in this method it is easy to inject any modifications of the housing standard under future or decent housing conditions. The standards accepted for establishment of separate house-holds or for the size of the housing units for house-holds of different composition may be varied. It is also possible to allow for the situation that the size of house-holds may increase or decrease in course of time but there may be no immediate change in housing demand. The expected changes in the demographic behaviour of the population with respect to marriage, reproduction, mortality and house-hold formation as affecting housing requirements as distinct from their effect on population and its age structure can also be taken note of. In general, such changes may affect the proportions of male and female heads of different ages, as also the size and composition of house-holds.

11. To the estimates of housing needs arising from population increase and improving housing conditions, replacement needs due to "scrappage" must be added. The latter formed 17 to 45% of the total in the case of certain countries, for which information is available. Taking into account various factors of construction and condition of dwellings, it has been estimated that in India 2% of dwelling stock has to be replaced annually. Replacement needs may arise due to (i) obsolescence; (ii) demolition for slum clearance, reconstruction of towns and other constructions; (iii) disasters, e.g. fires, floods, earthquakes, etc; (iv) dwellings falling out of use from changed population distribution or a preference for certain types; and (v) conversion of dwellings for non-residential purposes. Adequate statistics for estimating losses on this account are usually lacking and some reasonable estimates have to be made from past experience and future programmes. It may be noted that replacements and losses need not be in one-to-one correspondence. Factors, such as changes in house-hold size and improved density level affect the ratio. It is unnecessary here to go into the details of calculations except to the extent population can be used for the purpose. In the absence of direct data on the age and condition of housing stock, population figures may be used in a rough and ready way to assess replacement from obsolescence. For simplicity of presentation, the average life of an Indian house may be taken

as 50 years. The annual replacement rate would then be one-tenth of dwellings between 40-50 years old. The proportion of houses 40-50 years old in the existing stock, say, in 1960 may be estimated from the ratio of the recorded increases in population between 1910 and 1920 to the total population in 1960. This assumes that dwellings were being built then at a rate sufficient to watch the population increase.

11.1 The effect of dwellings falling out of use due to changed distribution of population may be studied with the help of rate and direction of internal migration and factors that affect it, *e.g.*, development of new industries, irrigation programme, etc. It may, however, be borne in mind that in a period of rapid urbanisation, rural houses that become vacant may provide housing for the natural increase in the rural population or

go to improve the density level and hence may not necessarily result in vacant dwellings.

12. It may be added that a small reserve on account of vacant dwellings should be made to the estimated current and future needs. The magnitude of the reserve may be seen from the fact that in Sweden it is 2% for urban areas and 4% for non-form areas in United States.

12.1 Further, as already stated in the beginning, housing needs are estimated for instituting action. This being so, it is desirable to make such estimates by geographic divisions and population groups by income, occupation, size of family or house-hold, etc, to mark out those more seriously affected. It is also desirable to study the inter-relationships between house-hold characteristics and housing conditions.

Demographic Factors Affecting Requirements of Housing and Housing Investment in Asia***

by

Dr. C. M. Palviat†

SUMMARY

World population is growing fast and the present growth rate is 1.72 per cent. But the population of Asia is growing faster and presently the average growth rate of population in Asia is over 2 per cent. World population is expected to grow by 1975 to about 3800 million and by 2000 A.D. to about 6300 million and that of Asia to about 2200 million in 1975 and to about 3900 million by 2000 A.D. Asia's share in world population would reach 60 per cent in 1975 and 64 per cent in 2000 from the present share of about 56 per cent.

Distribution of population into urban and rural areas will be another problem in the decades to come. Asia's urban population would increase to about 20 per cent of its total population in 1975 and about 27 per cent in 2000 A.D. Both on account of large increases as well as rural and urban migrations, the housing needs of the population in general and the urban population in particular would arise over and above the inevitability of eliminating present unsatisfactory housing stock.

Estimate of the housing needs can better be made by knowing the number of potential house-holds as distinguished from the average size of the households revealed by Census operations. Thus the number of potential households can be known by finding out the percentage of 'ever-married' female population in the age group of 15 years and above. With this, other elements like the elimination of unsatisfactory houses, replacement and vacancy ratio are also to be considered while estimating housing needs.

On the above basis it has been found that about 13 to 14 houses have to be constructed annually in the countries of Asia for every 1000 population during the next 35-40 years requiring investment equivalent to more than 10 per cent of the gross national product. This rate of investment is not feasible. However, a modest programme of investing about 5 per cent of the gross national product is essential as compared to the present level of investment in dwellings equivalent to 1 to 2 per cent of the gross national product in the countries of Asia.

1. INTRODUCTION

1.1 Population in all its ramifications forms raw material for shaping and studying all human affairs and activities. Demographic movements mould the society and they, in turn, also get moulded by the social conditions. Housing, in particular, is affected mostly by the demographic factors, because it is the population which conglomerates into units of households which share housing accommodation. The number and characteristics of the members of households (such as, their sex, age and marital status) under the impact of economic and social factors determine the housing requirements. Properly backed by purchasing power, housing needs may form the demand-level for houses of various sizes and types in the real estate market.

1.2 The degree of urbanisation and intensity of its process, occupational patterns and employment opportunities influence the distribution of population in the rural and urban areas. Often large masses of rural people with rural background come into urban areas and these migrants do not easily fit into urban surroundings. Thus urbanisation—an inevitable consequence of economic and social development and industrialization—poses a complex set of problems relating to provision of housing and allied services. Presence of overcrowding, congestion,⁽¹⁾ extremely unhygienic conditions, existence of slums, etc, are a common feature of large number of urban centres. In India there has been a rapid growth of population as a result of the implementation of the programmes of social and economic welfare; the process of urbanisation specially in bigger towns has been recently accelerated. Twin factors of rise in population and increases in the number of towns and urban population create acute demand for housing and that too at a higher cost particularly in urban areas.

1.3 This paper, visualises the requirements of housing as a result of the accelerated growth of population and accompanying urbanisation. It also attempts to figure out the broad magnitude of relative investments that have to be made to solve the housing problem.

2. WORLD AND REGIONAL POPULATION GROWTHS

2.1 It is estimated that the world population more than quintupled by 1960 as compared to a

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(1) "There are rooms so dark that even during the day the inmates cannot see each other in passages or in the single living rooms without the help of light or fire. Fresh air is completely lacking. Very often there is no passage of air from room to room, many of which are built back to back. Ventilation is of the poorest standard imaginable. The single room serve as a living room, bedroom, sick-room, kitchen, dining room, etc, and to add to this the number of persons living in the single room ranges from four to ten. The sallow complexion, the emaciated body and the pale faces of the inmates immediately tell their tale. If further proof were needed, one has only to study the official vital statistics to understand the extent of the toll in human life taken by this ill-conceived housing, a good deal of which even by the present inadequate and long obsolete standards laid down by the old Municipal Act of 1888, can be classed as unfit for human habitation. It is tolerated because there is no alternative housing available and the inmates would be on the streets if the tenements are declared and marked unfit for human habitation."

[Housing Panel (Bombay), the Greater Bombay Scheme, Bombay 1946].

population of 545 million in 1650, showing an average annual rate of increase of 0.53 per cent. However, breakdowns of population data into different periods suggest that this rate has not been uniform. For 1650-1750 the average annual rate of population increase was only 0.29 per cent, increasing later to 0.88 per cent for the fifty-year period 1900-1950. Again, during the present century, for still shorter periods, the annual rate has been of a fluctuating character, *i.e.* 0.59 per cent for 1900-1920, 1.11 per cent for 1930-1940 and with a slight tapering off for the decade 1940-50 on account of the Second World War. But during the fifties the average growth rate of population rose to 1.72 per cent.⁽¹⁾

2.2 The estimates of population as forecast in United Nations studies for the period 1950-2000 have been outstripped in actual occurrence both as regards the growth and size of world population. For example, adjusted mid-year world population for 1960 was 2995 million as against the estimate of 2907 million, with 1679 million of population

in Asia (*i.e.* about 56 per cent of world population) as against the earlier estimate of 1620 million.

2.3 Against the setting of the changes in world population and its average annual rates of increase, and also particularly in respect of percentage distribution of the population over different major regions, there is one characteristic trend. A great majority of world population has remained always inhabited in Asia. This population distribution in favour of Asia, where the population is now growing at about 2 per cent per annum⁽²⁾ (or at a little over 2 per cent in quite a few countries) threatens the continent with serious consequences. The future forecasts of population according to U.N. estimates are shown in Table 1. It was estimated according to projections that Asia, which in 1950 had 55.2 per cent of world population would have its share at about 61.8 per cent of the world population by 2000 A.D. In actual happenings it may be noted that these estimates rather proved to be on the lower side, as can be observed from the estimates for the mid-year 1960.

TABLE 1
Estimated Population for the World and the Continent
(in Million)

Year	World	Africa	North(*) America	Latin(**) America	Asia(***)	Europe including USSR	Occania
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1950	2497 (100)	199 (8.0)	168 (6.7)	163 (6.5)	1380 (55.2)	574 (33.0)	13 (0.5)
1975	3828 (100)	303 (7.9)	240 (6.3)	303 (7.9)	2210 (57.7)	751 (19.6)	21 (0.5)
2000	6267 (100)	517 (8.2)	312 (5.0)	592 (9.4)	3870 (61.8)	947 (15.1)	29 (0.5)

(*) America North of Mexico.

(**) América South of U.S.A.

(***) Excluding Asiatic part of U.S.S.R. (it however, includes countries like Bahrain, Bhutan, Cyprus, Iraq, Israel, Jordan, Kuwait, Lebanon, Muscat and Oman, Qatar, Syria, Turkey and Yemen, in addition to ECAFE Region).

NOTE.—Figures in brackets indicate percentages of world population.

2.4 Table 2 gives the population and annual rates of percentage increases in population (1953-1960) in the ECAFE countries. It will be seen that except for Burma, Japan and Nepal, none of the countries have a growth rate of less than 2 per cent per annum and in many of the countries the growth rate is 3 per cent or even higher.⁽³⁾ Even in Japan the population growth is now on a higher side than was estimated earlier. Four of the country censuses have shown large discrepancies

with earlier estimates of mid 1960. For example, Brunei, North Borneo, India, Pakistan, Philippines and Thailand have shown upward figures by a few millions. Growth rates have moved upwards substantially country-wise—in India from 1.3 to 2.0 per cent, in Pakistan from 1.4 to 1.9 per cent, in the Philippines from 2.6 to 3.2 per cent and in Thailand from 1.9 to 3.0 per cent. Asia is thus faced with problems of housing inherent in huge additions to population.

(2) "The Future Growth of World Population", pages 23-24. Population Studies No. 28, 1958. (U.N.)

(3) Annual rate of increase after all adjustments was 1.9 percent over the decade 1950-60.

(4) These countries are Brunei, China, Taiwan, Federation of Malaya, Hong Kong, North Borneo, Philippines Sarawak, Singapore, Thailand and South Vietnam.

TABLE 2
Population and Its Annual Rate of Increase in Some of the Countries in Asia

Sl. No.	Country	Estimates of mid-year population (in thousands)		Percentage annual rate of increase (1953-60)
		1953	1960	
(1)	(2)	(3)	(4)	(5)
1	Afghanistan	..	13,800	..
2	Brunei	52	84	7.0
3	Burma	19,272	20,662	1.0
4	Ceylon	8,290	9,896	2.7
5	China (Taiwan)	8,261	10,612	3.6
6	Cambodia	..	4,952	..
7	Federation of Malaya	5,613	6,909	3.0
8	Hong Kong	2,250	2,981	4.1
9	India	3,78,329	432,567	1.9
10	Indonesia	79,500	92,600	2.2
11	Iran	17,476	20,182	2.1
12	Japan	86,700	93,200	1.0
13	Korea (Republic of)	21,440	24,665	2.0
14	Laos	1,445	1,805	3.2
15	Nepal	8,257	9,407	1.6
16	North Borneo	355	454	3.6
17	Pakistan	81,159	92,727	1.9
18	Philippines	22,316	27,792	3.2
19	Sarawak	592	745	3.3
20	Singapore	1,192	1,634	4.6
21	Thailand	19,556	26,258	4.0
22	Vietnam (Republic of)	9,766	14,100	5.4

Source : Demographic Year Book, 1961 (United Nations).

2.5 It has, therefore, been rightly stated in the United Nations Population Commission's Fourth Report on "Future Estimates of Population of Asia and the Far East, 1950-1980" that the ECAFE region really determines the world's population

trend. This, accompanied by low per capita national income in most of the countries in this region is enough to point out the task with which the region is faced in solving problems of poor health and agonising housing conditions.

TABLE 3
Revised Population Projections for Asia from 1960 to 2000 (Without Affecting Any Changes
in World Estimates of Population)

Year	Population		Rate of increase in the in- tervening period	Percentage share of Asia in world population
	World	Asia		
(1)	(2)	(3)	(4)	(5)
Mid 1960	2995	1679 (1620)	(1.9)	56.0
1965 . . . . .	..	1846 (1780)	(2.1)	..
1970 . . . . .	..	2048 (1980)	(2.3)	..
1975	(3828)	2290 (2210)	(2.3)	60 (57.7)
2000	(6265)	4010 (3870)		64 (61.8)

NOTE.—Figures given in brackets are all based on estimates made in 1958 U.N. documents. All other estimates are revised ones, in the light of actual trends as shown by mid 1960 data for Asia and world population.

Source : U.N. Statistical Year Book-1961.

(2) The Population of South East Asia (1958). (Population Study No. 3) 1950-58. (U.N.)

(3) The Future Growth of World Population 1958. (Population Studies No. 28) (U.N.)

2.6 In view of the variations that have actually occurred from the estimates of world population as well as that of Asia's population, it would not be unrewarding to make fresh estimates of world and Asia's population and determine the actual share of Asia in world population. While making the fresh forecasts of population size, the growth rate of Asia's population as now prevalent has been employed but no changes have been affected in the size of world population or population of developed regions as also that of the population in Latin America and Africa. In the case of shares of Africa and Latin America in world population any changes in the rate of population increase would not alter Asia's share and in the case of North America and Europe the actual declining of trends in the share of world population conform to the assumptions underlying fresh estimates.

2.7 The fresh estimates show that Asia's share in world population would increase because of 'demographic explosion' caused as a result of 'demographic gap' occurring in the wake of welfare and developmental policies of the Governments in the countries of Asia which have raised the expectation of life and lowered the death rates. Asia's share in world population, as a result of fresh estimates, now increases from 57.7% in 1975 and 61.8% in 2000 (as estimated in U.N. Document) to 60% in 1975 and 64% in 2000 according to the fresh estimates. This in turn would affect the absolute as well as relative numbers of the population living in urban areas and also the requirements of housing.

3. POPULATION DISTRIBUTION AND URBANISATION PROCESS

3.1 Regional, national, physical, economic or social planning of less developed continents (and more so in Asia) must necessarily deal with the

population distribution in retrospect and in prospect. The knowledge of the distribution and composition of increases in population is of a great value for planning purposes. Proper study of the process of urbanisation (*i.e.* the dynamics of the distribution of population in urban and rural areas or the migrations that take place from rural to the urban areas) is essential in this context.

3.2 The concept in respect of designation of areas as urban or rural is of a variagated nature. The concept has remained closely bound up with historical, political, cultural and administrative considerations and there remains always a difficulty in developing uniform definitions. For example, the way in which cities are delimited differs from country to country. The urban agglomeration has sometimes been defined as including the suburban fringe or thickly settled territory lying outside of, but adjacent to, the city boundaries. Again, in many countries cities are considered synonymous with localities having fixed boundaries with an administratively recognised urban status which is usually characterised by some form of local governments—known by various designations, such as cities, towns, boroughs, municipalities, and by some form of local government; and in others, *e.g.* in Japan, Ryukyu Islands and France, the city is defined as an administrative division composed of a populated centre or an adjoining territory which may be distinctly rural in character or may contain other types of quite separate urban agglomerations.

3.3 The differences are sometimes at extreme that an urban status is granted to places with as few as 250 inhabitants in Denmark, while in Korea the lower limit is 40,000 persons. In northern Ireland and Belgium urban population means population living in places with urban status, regardless of size; in Israel it implies predominantly non-agricultural centres; in Malta it is defined as built-up areas devoid of agricultural land. In India for

the 1961 census the designation of the town or urban areas has been put to a stricter definition by applying three criteria—namely, (a) population of not less than 5,000, (b) a density of not less than 386 per square km. (1000 per square mile), and (c) the employment of not less than 75 per cent of the adult male population in non-agricultural pursuits. This new test has eliminated many areas of pronounced rural character which had previously passed as towns, thus causing a pruning in number of towns. It is this definition which, as given by provisional data, has kept the proportion of urban population a little over 17 per cent for 1961—a figure that was thrown in 1951 census in different set of definitions.

3.4 Hence as long as the type of locality involved remains unchanged from year to year the changes over time in the proportion of the population living in places of 20,000 or more and in places of 1,00,000 or more provide a useful index of urbanisation. They are also useful for analysing world and regional trends, since they are relatively free from the complexities introduced by national definitions or urban status.

3.5 The regional differences in the pattern of absorption of urban population have existed, demonstrating the variations that exist due to history as well as on account of economic and social set up of the regions. In the West, the population increase was absorbed by the consequential urbanisation in the wake of industrialisation, which was the main contributory factor for urbanisation of the world as well during the 19th century. But during the 20th century, world urbanisation has been largely characterised by the growth in the urban population of Asia; for, as Hauser⁽⁵⁾ puts it, "Between 1900 and 1950 the large city population of the world increased by 254 per cent that of Europe and North America, however, already at a high level in 1900, increased by only 160 per cent, compared with an increase of 444 per cent in Asia". The intensity of this can be observed as given in Table 4 (after Philip Hauser) on the rate of world urbanisation (cities having a population of 1 lakh and over) by selected regions since the year 1800.

TABLE 4
Percentage Increase (Population of Cities of 1 lakh and Over) in Some Regions of the World

Period	World	Asia	Europe (including the whole of USSR) and America
(1)	(2)	(3)	(4)
1800 to 1850	76	24	184
1850 to 1900	222	59	337
1900 to 1950	254	444	160

3.6 The intensity of urbanisation in terms of absolute figures, has been more visible in Asia where about one-third of the total urban population (*i.e.* of larger cities) resides and also it is here that about a third of the larger cities of the world (numbering over 1400)⁽⁶⁾ are located. The combined strength of the larger cities in Europe and North America is somewhat smaller than in Asia. It might also be stated that between 1960 and 1975, increases in population in Asian cities as estimated in this Paper will account for about half of the world increase in residents of cities of both 1,00,000 and over and 20,000 and over; by 1975 Asia would contain (in towns of 20,000 and over) about 40 per cent of the world's city population. In absolute terms, the urban population in Asia is likely to increase over 1960, by another 176 million by 1975. About 462 million people of Asia would then live in urban areas and about 20 per cent of the total Asian population would be in urban areas as compared to about 17 per cent in 1960. However, considering the size of the population it is clear that the "degree of urbanisation" is much higher in the advanced countries of Europe and North America than is the case in Asia. The important point of distinction that emerges is that the process of urbanisation in Asia has been shaped more due to the 'push' factors, whereas in Europe and America it was more due to the 'pull' factors.⁽⁷⁾

3.7 This phenomenon has occurred as a matter of compulsion, because of the low 'land-population' ratio⁽⁸⁾ arising from rapid population growth in relation to agricultural resources in countries of the

(5) Philip M. Hauser—'Implication of Population Trends for regional and urban planning in Asia and the Far East (p. 23.) "Regional Planning—Housing, Building and Planning, Nos. 12 and 13, United Nations, 1959.

(6) U.N. Demographic Year Book, 1960.

(7) 'Pull' factor might also prevail in agricultural surplus countries like Burma and Thailand, where some sections of affluent agricultural population might be attracted to the amenities of civic life in towns. However, they do not come in search of employment.

(8) The data in the following table, showing the male working population per sq. km. in different countries, confirm the point :

Country	Male working population per sq. km.
Brazil	1.0
Ireland	7.8
Greece	8.9
Spain	14.0
Turkey	14.0
Poland	14.5
China	26.9
India	26.3

ECAFE region. People leave rural areas as the existing social, land tenure and technological situation in rural areas do not afford a livelihood on already over-populated land or seasonality of employment in agriculture or due to the obsolescence of handicrafts.

3.8 Further, in Asia it is about 15 per cent of her population that lives in cities of 20,000 or more persons, compared with the world average of 21 per cent, 42 per cent in North America (North of Rio Grande) and 35 per cent in Europe (excluding USSR). Similarly, only 8 per cent of the

Asians live in cities of population of 1,00,000 and over, compared with the world average of 13 per cent, 29 per cent in North America and 21 per cent in Europe. With the exception⁽⁹⁾ of Hong Kong, Japan and Singapore, the countries of ECAFE region are the least urbanised in spite of the fact that in absolute figures they have a large number of cities of larger size of urban population than either Europe or America.

3.9 The recent state of affairs as regards rate of urbanisation in towns and cities of different sizes in Asian countries can be had from Table 5.

TABLE 5
Urbanisation and Population Growth Rates of Some Countries in Asia

Country	Total Population	Annual per cent of increase			
		Locality size			
		1,00,000 and over	50,000 to 99,999	20,000 to 49,999	10,000 to 19,999
(1)	(2)	(3)	(4)	(5)	(6)
Burma (1931-41)	1.39	2.56	..	..	..
Ceylon(a) (1946-53)	2.84	2.35	..	3.93	..
China (Taiwan) (1940-51)	3.12	7.27	3.47	3.93	1.33
Federation of Malaya (b) (1947-57)	2.56	6.55	..	3.02	..
India(c) (1951-61)	1.99	4.07	..	..	..
Indonesia(d) (1930-61)	1.52	5.94	..	..	..
Japan (1955-60)	0.91	3.95	..	..	..
Korea (Rep. of)(e) (1949-55)	1.04	5.62	..	..	..
Pakistan (1951-61)	3.52	6.02	..	..	..
Philippines (1948-60)	3.18	3.73	..	..	..
Denmark (1950-55)	0.51	1.19	..	..	..
France (1950-60)	0.67	1.09	..	..	..
Sweden (1950-60)	0.64	1.81	..	..	..
Switzerland (1950-60)	1.39	1.22	..	..	..
United Kingdom (1951-61)	0.51	3.15	..	..	..
United States (1950-60)	1.75	1.42	..	..	..

(9) In Hong Kong only 17.9 per cent of population lives in localities having less than 10,000 population and in Japan less than 11 per cent.

(a) For 1940, data include residents serving in Japanese armed forces outside the country. For 1956, data include Quemoy and Matsu Islands.

(b) Existing data of Kashmir-Jammu, Karikal, Mahe, Pondicherry and Yauson for 1961, and for B-trital areas of Assam for 1951.

(c) For 1961 data are provisional.

(d) Rate based on minor civil divisions which together cover country and hence rural as well as urban population.

(e) Data excl. alien, armed forces and foreign diplomatic personnel, for 1949 data excl. other foreigners and data referring to the area South of the 38th Parallel.

[Source : Compendium of Social Statistics 1963, U.N. Statistical Papers Series—K. No. 2.]

3.10 The data show that roughly the rate of increase in urban population in cities of population 1,00,000 or more has been twice the growth in total population in countries of ECAFE region (except in Ceylon and Philippines). For example, in China (Taiwan), Federation of Malaya, Indonesia, Japan and Korea, the rate of increase of population in cities with population of 1,00,000 and more is more than twice the rate of increase of total population. In case of Ceylon, the lower rate of increase in population in larger towns has been compensated by twice the rate of increase in population in towns with population of 10,000 to 99,999. Thus, in spite of relatively low urban population, the rate of population growth in cities has been very high. In comparison, the urban population in larger towns in developed countries is growing at a much smaller rate than in the countries of ECAFE region and in some cases (as for example in the United Kingdom) it is also declining.

3.11 The conclusion of the above paragraph can be further substantiated when one observes that the percentage share of urban population in total population in countries of Asia has increased faster during the last decade, except in a few countries. Data in this respect are given below in Table 6. The figures show that in some countries population in larger towns is increasing at a faster rate and population of smaller towns is increasing at a fast rate. This inflow of population in urban areas creates housing problems, and if not attended betimes the new migrants to the towns as well as the lower income groups in certain areas either become slum-dwellers or they are constantly being threatened to be on the verge of turning their localities into slums.⁽¹⁰⁾ In contrast, in developed countries the rate of increase in urban population in towns of 1,00,000 in developed countries has either declined or stabilized (as in Switzerland, France, Denmark); in some cases the rate of decrease has set in as is clear from the data of the United Kingdom and the United States.

TABLE 6
Proportions of Total Population Living in Urban Areas in Countries of Asia and Other Regions

Country	Size of Towns			
	1,00,000 and more	50,000 to 99,999	20,000 to 49,999	10,000 to 19,999
(1)	(2)	(3)	(4)	(5)
Ceylon				
1946	5.4	3.3	5.9	2.7
1953	5.3			3.4
China (Taiwan)				
1940	12.5	7.1	43.4	30.3
1956	23.6	7.5	49.3	15.1
Federation of Malaya				
1947	7.4	2.8	6.9	1.9
1957	10.8	5.2	6.7	3.8
India				
1951	6.6	..	..	..
1961	8.1	..	..	..
Indonesia				
1930	2.6	..	..	..
1961	9.8	..	..	..
Japan				
1955	34.9		30.8	17.4
1960	40.5	11.5	20.0	17.7
Korea (Republic of)				
1949	14.8	..	..	..
1955	9.6	..	..	..
Pakistan				
1951	5.1	0.8	2.1	2.1
1961	7.4		4.5	..

(10) "While the housing requirements of developed countries originate in a normal population development and the need for a renewal of a housing stock, those of the countries in the process of rapid industrialisation arise mainly from large scale and intense urbanisation".

[U.N. : ECE—Report of the Seminar on Housing Surveys and Programmes with particular reference to problems in the developing countries, page 3 (1962).]

TABLE 6—Contd.

1	2	3	4	5
Philippines				
1948	9.3	..	..	..
1960	9.9	..	..	..
Denmark				
1950	33.5	..	..	..
1955	34.0	..	..	..
France				
1946	16.3	..	..	..
1954	16.8	..	..	..
Switzerland				
1950	20.6	..	..	..
1960	20.5	..	..	..
Sweden				
1950	19.4	..	..	..
1960	21.4	..	..	..
United Kingdom				
1951	51.9	..	..	..
1961	36.1	..	..	..
United States				
1950	29.4	..	..	..
1960	28.4	..	..	..

Source: Compendium on Social Statistics, 1963 (U.N. Statistical Papers Series K. No. 2).

3.12 Asia may, in one sense, be also called over-urbanised, because many of the Asian countries have a larger urban population than is justified by the degree of industrialisation or general level of economic development or in terms of the proportion of population engaged in non-agricultural pursuits. This is perhaps inherent in the 'push' factor associated with urbanisation process as distinct from 'pull' factor's association in urbanisation process in developed countries.

3.13 In view of the various factors explained earlier, it would not be wrong to assume that urban population would increase at twice the rate of population over various periods in future. Hence,

drawn from Table 3, we might further make estimates of urban population, taking the 1960 percentage of urban population at about 17 per cent. The estimates show that urban population of Asia would be 382 million in 1970; 462 million in 1975 and 993 million in 2000. This means that in urban areas alone houses shall have to be provided by 1975 for about 800⁽¹¹⁾ million people—equivalent to the present housing stock of Western Europe, North America and South America in the course of about next thirty five years. This, however, does not take into account about the houses to be provided for the population living in rural areas of Asia.

TABLE 7
Estimates of Urban Population in Asia

Year	Total population of Asia (in million)	Average annual rate of increase in the intervening years	Urban population (in millions)	Average annual rate of increase in the intervening years	Percentage to total population
(1)	(2)	(3)	(4)	(5)	(6)
1960	1679	..	286	..	17.0
1965	1846	1.9	329	3.8	18.0
1970	2048	2.1	382	4.2	19.0
1975	2290	2.3	462	4.6	20.0
2000	3600	..	993	..	27.0

(11) If 40 per cent of the urban population in 1965 is regarded as having unsatisfactory houses and if this figure is added to the new urban population—the new houses would then be required for over 800 million people in Asia.

3.14 As regards the size of urban population it would be seen that the population increases from 17 per cent to 18 per cent in 1965 and 19 per cent in 1970 to 20 per cent in 1975 and 27 per cent in 2000. The accentuated trend of urbanisation (as assumed at double the rate of population growth) will create quite a number of problems in respect of housing depending upon the age and sex structure as well as civil status of the population.

4. HOUSING REQUIREMENTS AND VOLUME OF INVESTMENT NEEDED TO PROVIDE HOUSES

4.1 The prospects of big increases in population accompanied by its rapid rate of concentration into urban areas creates various social and economic problems. The programmes of economic and social welfare in less developed countries are very much thwarted by fast increases in the population, and in the process housing stock, its renewal, etc., also get adversely affected. Already there are huge back-logs in countries of ECAFE region as regards housing facilities and the need for provision of accommodation to match fast rates of increases in population further worsens the situation.

4.2 Precise estimate of housing requirements is a difficult and complex task, because the need for housing is related not only to the existing population and its growth in future but also on the number of existing and potential households. The rate of family (or household) formation is influenced by the sex, age and marital status of the members. In addition, for estimating housing needs, account has also to be taken of the back-log in housing as well as that of sub-standard houses at a point of time in relation to the requirements at that time, when projections of housing requirements have to be made. This is a big exercise in itself.⁽¹²⁾ However, if we forget about these considerations and try to arrive at a working figure for the number of

houses that will have to be built only to provide for the increase in population and family formations, the task it would appear, is no less stupendous in countries of Asia.

4.3 In order to determine the correct requirements of housing at a particular point of time and also for some future date, it will be proper to determine first the potential number of households. The number of households, as given out by census operations is often not the correct picture, because it may involve compulsory doubling up of the households in the absence of the availability of needed number of housing units. The potential number of households can be roughly estimated by finding out first the number of females of 15 years and over in a country. Secondly, it will be necessary to determine the proportion of females in this age group who are single and not married at any time. The residue of the female population in this age group would provide females who are married, divorced or widowed. This latter figure would be the approximate number of potential households who should be provided a separate house with elements of adequate shelter, privacy and, if possible, of protected water supply and sanitation facilities.

4.4 Table 8 gives data about the proportions of the female population of 15 years and above to the total population in col. 5 for some of the Asian countries. The proportions of females of 15 years and above, who are married, widowed or divorced, to total population, in different countries, are given in col. 6. From the figures in col. 6 the weighted percentage for the region is arrived, on the basis of the country proportions to total female population of the region in the age group 15 years and above. By applying this percentage to total population, the number of potential households can be obtained and in turn our premise is that this number would approximate to the requirements of housing units needed at a particular point of time.

TABLE 8
Percentage of Females in the Age Group 15 Years and Above to the Total Population in Some of the Asian Countries

Country	Total population (Thousands)	Total females (Thousands)	Total females in age group of 15 years and above (Thousands)	Percentage Col. (4) to Col. (2)	Percentage of married females in age group 15 years and above to total population
(1)	(2)	(3)	(4)	(5)	(6)
1. Brunei (1960)	84	40	21	24.8	20.2 ⁽¹⁾
2. Burma (1954)	2,680	1,367	874	32.6	25.6
3. Cambodia (1959)	4,845	2,425	1,361	28.1	N.A.
4. Ceylon (1955)	8,723	4,143	2,407	27.6	21.6 ⁽²⁾
5. China (Taiwan) (1960)	10,612	5,181	2,851	26.8	20.9 ⁽³⁾
6. Federation of Malaya (1957)	6,279	3,041	1,693	26.9	22.6

(12) Adjustment is as well required for depreciation obsolescence, vacancy ratio besides the population rise, rate of family formation, back-log of deficiency in housing stocks, etc.

(1)	(2)	(3)	(4)	(5)	(6)
7. Hong Kong (1961)	3,128	1,520	903	28.9	23.6
8. India (1961)	439,235	212,941	132,648 (a)	30.2	28.1 ⁽⁴⁾
9. Iran (1956)	18,955	9,307	5,383	28.4	N.A.
10. Japan (1960)	93,347	47,528	33,774	36.2	26.5
11. Korea (1960)	24,443	12,441	7,528	30.8	23.8
12. Mongolia (1956)	845	425	297	35.2	N.A.
13. Nepal (1954)	8,445	4,299	2,643	31.3	29.1
14. North Borneo (1960)	454	218	122	26.8	22.6
15. Pakistan (1961)	90,283	42,794	23,474	26.0	24.5
16. Philippines (1961)	28,727	14,306	7,843	27.3	18.5 ⁽⁵⁾
17. Sarawak (1960)	745	369	207	27.8	22.9
18. Singapore (1957)	1,446	683	384	26.6	20.6
19. Thailand (1960)	22,295	11,059	6,423	28.5	21.3 ⁽⁶⁾
TOTAL	765,571	374,087	230,836	30.15	26.29
Weighted average	(Weights proportional to total females of all the countries in the age group 15 years and above)			30.07	26.56

4.5 The above derived percentage of the 'ever married' females of 15 years and above to total population tells that average size of the potential households in the countries of ECAFE region is below '4'. However, for our purpose, in order to have broad estimates we may take the numerical strength of the households at about '4'.⁽¹³⁾

4.6 Generally, it is found that the size of the urban household is smaller than that of the size of

a rural household. In this study the size of the potential urban household is assumed at '4' and that of rural household at '4.5'.

4.7 On these above assumptions, estimates of housing stock required for different years both for the urban and rural areas is estimated as given below in Table 9.

Source : 1. Compendium of Social Statistics 1963, United Nations.
2. Demographic Year Book 1961, United Nations.

(a) estimated.

(1) Obtained help of 1947 figures.

(2) Obtained with the help of 1953 figures.

(3) Obtained with the help of 1956 figures.

(4) Obtained with the help of 1951 figures.

(5) Obtained with the help of 1959 figures.

(6) Obtained with the help of 1956 figures. (The size of the potential household is

$$\frac{100}{26.56} = 3.77 \text{ or } \frac{100}{26.29} = 3.80$$

(13) Though the average size of the potential household comes to '3.8', as shown in Table 8, our taking the size at '4' for urban areas and '4.5' for rural areas may be considered pragmatic as the age at which females now marry is moving upwards which in itself would reduce the proportion of married females (15 years and above) to total population. It would also be practicable to move slowly in reducing the degree of overcrowding in households (as demonstrated by the present size of households at '5') by assuming the potential household size at '4' and '4.5' in place of '3.8'.

TABLE 9
Distribution of Urban, Rural and Total Population and Potential Households in Asia
for the Years 1960, 1965, 1970, 1975 and 2,000

Year	Population in Asia (In Million)			No. of potential households (or families) in Asia (In Million)		
	Urban	Rural	Total	Urban	Rural	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1960	286	1393	1679	71	310	381
1965	329	1517	1846	82	337	419
1970	382	1666	2048	96	370	465
1975	462	1828	2290	116	406	522
2000	993	2607	3600	248	579	827

4.8 From the number of households (or families) in Asia at particular points of time, we also know the increases of new households (and increases in housing needs) during the intervening periods. To illustrate, it will be seen that for the quinquennium 1961-1965 the average annual increase in potential households is 7.6 million, 1.2 in urban areas and 6.4 in rural areas; for 1965-70 the increase is 9.4 million: 2.8 million in urban areas and 6.4 in rural areas and for 1970-75 the average annual increase is 11.2 million: 4.0 in urban areas and 7.2 million in rural areas. It demonstrates that the rate of increase in households is faster in urban areas and slower in rural areas. For the 15-year period of 1961-75, the number of new formation in households would be 141 million, for an increase in population of 611 million: 176 million in urban areas and 435 million in rural areas. For the 25-year period (1976-2000) the increase of new households would be 305 million: 132 million in urban areas and 175 million in rural areas.

4.9 Correct information about the quantum and quality of the housing inventory in the countries of ECAFE Region is not available at present. For estimating present housing shortage in ECAFE region it may be assumed that about 40 per cent of the urban population and about 50% of the rural population are living in unsatisfactory dwellings.⁽¹⁴⁾ This gives a housing shortage of 28 million in urban areas and 155 million in rural areas for the year 1960. This shortage we might assume, includes both the numerical shortage as well as the shortage on account of sub-standard houses. This housing shortage, we might assume can be liquidated during the 40-year period (1961-2000) at a uniform rate of 4.6 million houses every year: 0.7 million in urban areas and 3.9 million in rural areas.

4.10 Future plans, for eliminating this deficit, as also to provide houses for the fresh population, have to be prepared. In such estimates adjustment is also necessary on account of replacement factor both for the urban and rural housing stock estimated for the year 1960. Replacement factor may be applied only to the 1960 stock at a uniform rate of 2 per cent. As a result 3.96 million houses, i.e.

0.86 million in urban areas and 3.10 million in rural areas shall have to be provided to match with the wear and tear that occurs on the 1960 satisfactory housing stock.

4.11 Housing plans for a long period necessarily involve provision for other factors as well and it is desirable to make provision at least for the vacancy ratio. This ratio is at about 3% of the housing stock in developed countries. Here we might take a vacancy ratio at the lower point (i.e. at 2 per cent). This vacancy ratio shall have to be related to the housing needs as based on total number of potential households. For example, for the year 1975 provision has to be made for 10.4 million houses: 2.3 in urban and 8.1 in rural areas, for providing free mobility of households from one locality to other, either due to shifts in occupation or income-levels, etc.

4.12 Accounting for other factors, listed in the UN Document E/CN.11/ASPAT/HSP/L.4(1963) is not being considered here in making the estimates of housing requirements.

4.13 The data given in Table 10 are comprehensive for the years 1960 to 2000 and they emphasize specifically about the situation in 1975 and 2000 in broad magnitudes. It will be seen that for the year 1975 house-building activity should be geared to cope with the construction of 31.1 million houses in ECAFE region: 6.5 million in urban areas and 24.6 million in rural areas. And this activity is needed when still about 100 million houses in rural areas and 17 million houses in urban areas will be in sub-standard condition. The house building activity in 1975 will be about 13 houses per 1000 of population of which 14 houses per 1000 of population will have to be constructed in urban areas. This rate, is at present comparable to housing activity in the USSR and is at much higher level as compared to the house construction of about 5 to 8 houses per thousand of population in other developed countries. In the year 2000 the house building activity will be at 45 million houses; 12 million in urban areas and 33 million in rural areas. The house building activity per 1000 population will be 12 houses.

(14) United Nations : "World Housing Conditions and Estimated Housing Requirements" (E/CN.11 Stat/HSB L.9, 1963, page 28).

TABLE 10
Housing Requirements in Urban and Rural Areas of the Countries in Asia

(In million)

Sl. No.	Item	Urban	Rural	Total
(0)	(1)	(2)	(3)	(4)
1	Present (1960) shortage of housing(a)	28	155	183
2	Annual average, for liquidation of shortage(1) over 40 years	0.7	3.9	4.6
3	Approximate rise of population :			
	(1) in 1975	10.0	42.7	52.7
	(2) in 2000	22.4	60.4	82.8
4	Approximate new construction needed due to rise in population :			
	(1) in 1975	2.6	9.5	12.1
	(2) in 2000	5.6	13.4	19.0
5	Replacement (of the satisfactory housing inventory of 1960 at 2% fixed rate)(b) :			
	(1) in 1975	0.86	3.10	3.96
	(2) in 2000	0.86	3.10	3.96
6	Vacancy ratio (c) (at 2% of the minimum housing needs) :			
	(1) in 1975	2.32 (116)	8.12 (406)	10.44 (522)
	(2) in 2000	4.96 (248)	11.58 (579)	16.54 (827)
7	Total house building activity required :			
	(1) in 1975 2+4(1)+5(1)+6(1)	6.48	24.62	31.10
	(2) in 2000 2+4(2)+5(2)+6(2)	12.12	32.98	45.10
8	Total population :			
	(1) in 1975	462	1828	2290
	(2) in 2000	993	2607	3600
9	Number of houses required to be built per 1000 of population :			
	(1) in 1975	14	13	13
	(2) in 2000	12	12	12

4.14 Broad magnitudes given above of housing requirements up to the year 2000 and with detailed break-downs for the years 1975 and 2000 pose a challenge to the countries in ECAFE region. Investments required for providing houses for generating the necessary house building activity, would also have to be large.

4.15 Investment in dwellings as a percentage of gross national product, at present, is generally lower in Asian countries. It is 1 to 2 per cent of gross

national product in Asian Countries ⁽¹⁵⁾ whereas in countries of ECLA region, it is 2 to 4 per cent; and about 3 to 6 per cent in developed countries. Again, the gross fixed capital formation in dwellings in Asian countries is nearer 10% or less than 10% of the total fixed capital formation in contrast to nearly 20% prevalent in countries of ECLA region as well as in developed economies.

4.16 In order to match the requirements in any target year (say, 1975 to 2000) it will be necessary to raise the proportions of investments in dwell-

(a) Urban shortage taken at 40 per cent of the 1960 housing needs, based on estimates of potential households; and rural shortage at 50 per cent.

(b) This rate is assumed in case of India (Refer page 45, UN Document-E/CN. 11/ASTAT/HSP/L.4, 1963).

(c) Vacancy ratio is arrived at 2% of the housing needs in 1975 and 2000 respectively, based on the estimates of potential households of which the figures are given in brackets.

(15)about ten new dwellings per 1,000 inhabitants are required annually in the less industrialized areas of the world to meet requirements existing and growing. But total investment rates in less developed countries are usually of the order of 10 to 15 per cent of gross national product. It is evident that to sustain a rate of adequate housing construction would absorb practically the entire investment resources of the developing countries (Para 23 of the United Nations *Ad Hoc* Group of Experts on Housing and Urban Development 1962 E/CN.5/367).

lings in the countries of Asia from the present level of 1 to 2 per cent to about 5 per cent of gross domestic product, if further deterioration in housing conditions is to be stopped. In developed countries where the housing stock is comparatively of a very high standard, already 5% of the gross national product is being invested in housing. In fact, the rate of investment should be even higher than 5% of the gross national product in developing countries. This may require enunciation of stable credit and fiscal policies and development of various agencies for encouraging institutional and international finance.

4.17 In countries of Asia re-allocation of capital funds between dwelling and non-dwelling components of investment in construction is called for, because in construction itself about 70% of the total gross fixed capital formation is absorbed which is a very high proportion, not found in other parts of the globe. This re-allocation would not be unproductive, because capital formation in residential sector is also productive (though spread over a long period of time; and in this sector, the capital/output ratio in long run may well turn out to be more favourable than in the manufacturing sector). The employment volume—direct and indirect—generated (or employment multiplier) may also turn out to be more favourable. Therefore, in ECAFE countries, with increasing desire to set the development process at work, the percentage of capital formation in residential construction should be raised over future years, probably to the level of about 5% of the gross national product. There should not be much fear as regards the possible susceptibilities of these economies to alternation of peaks and troughs in economic activity due to higher level of investment as there would exist a reasonably effective safety valve in the form of governmental residential construction, embedded in the social welfare policy of the Governments in these countries. Economic planners in the countries of Asia should, therefore, address themselves to bring about proper allocation of investment resources among various sectors, with high priority to the residential sector, for achieving balanced economic and social growth.

5. CONCLUSION

5.1 In countries of Asia, population is increasing at the rate of over 2% per annum. This would raise the population of Asia to about 2,290 million by 1975 and about 3,600 million by 2000 A.D. Consequently, Asia's share in world population would reach to 60% in 1975 and 64% in 2000 A.D. from about 56% at present.

5.2 The numerical increase in population is not the only problem. Because of heavy land pressure and conditions of unemployment or employment in urban areas in the wake of economic development plans and policies of industrialisation, the migration of rural population to urban areas would be accentuated. The housing conditions and the problem of providing houses in turn would become challenging in urban areas.

5.3 It is necessary to attend to the housing needs of the population in general and the urban population in particular to meet the needs of new population as well as for eradication of unsatisfactory housing stock which is a bane of almost all the countries of Asia.

5.4 While estimating the housing requirements, the present shortage of houses as well as the needs due to the new population growth, replacements to be made for wear and tear have to be taken into account. In this context, it is necessary to pay attention to the number of potential households as distinguished from the average size of households revealed by census operations. It may be also necessary to make provision for the probable vacancy ratio for which the housing stock has to be provided to meet the needs caused by transfers of the households to new occupations or new locations or also on account of changes in income levels.

5.5 Housing requirements, as estimated on the basis of various factors, reveal that about 13 to 14 houses have to be constructed annually in the countries of Asia for every 1000 of population. Housing construction at this rate would require investments equivalent to more than 10% of the gross national product. This rate of investment is not feasible. Nevertheless, it is essential to invest for constructing houses at certain minimum rate to absorb the growth of new population and the depreciation of old housing stock on the basis of estimates derived from the number of potential households. In this modest and desirable housing programme, it would perhaps be necessary to slow down the process of removing the past back-log of housing shortage by spreading over three to four decades. The limited modest programme, as suggested above, would also in any case require an investment equivalent to about 5% of the gross national product as compared to the present level of investment in dwellings, in countries of Asia, which is only 1 to 2 per cent of the gross national product.

A Case Study of Household Formation in West Bengal***

by

Dr. (Mrs.) Kumudini Dandekar†

1. It is intended to present here the data regarding household formation in West Bengal as obtained in the 1951 census. Similar data not being available for any other part of India in any of the censuses, the present data for West Bengal stand unique and may be found useful in future as a zero-point study. The data included the following information for about five per cent of the households in twelve, out of the fifteen districts of West Bengal. In all, 248,911 households were included in the five per cent sample selected from the National Register of Citizens for West Bengal in the census of 1951. The data contained the following information besides what was available for other states in the census :

- (i) Age, sex, marital status of the heads of households.
- (ii) Size of households by age, sex and marital status of the heads.
- (iii) Composition of households by the marital status of the heads.

2. Among the total of 248,911 heads of households, about 90 per cent were male heads and about 10 per cent were female heads. Among the male heads, 82 per cent were married, seven per cent were widowed and 10 per cent were single. Among the female heads 16 per cent were married, 79 per cent were widowed and only four per cent were single. Thus roughly, it was the marriage that bestowed headship of households on males and it was widowhood that could give headship to females.

3. It was observed in the sample households that their size went on increasing as the head of the household grew older and older. This trend seemed markedly different from that found in many developed countries where the size of households reached its maximum before the age of 50 years or so and then declined in older ages. The relevant data for West Bengal are set out in Table 1. As for female heads the size of household was generally small and was maximum in the age period 25 to 44 years. Later though it declined, it remained more or less at the same low level of 2.3 persons.

4. The age-specific headship rates calculated from the census data give an idea as to the attitudes of males at various ages towards setting up their own households. In Table 2 these have been presented for rural and urban areas of West Bengal separately and for the city of Calcutta. The age-specific headship rate of 84.9 for the age group 35 to 44 years for West Bengal meant that there were only 15 men in that age group that had no household of their own and they were living under the headship of other males. As observed from this table, the headship rate rose to a maximum before age 64 years and then declined at extreme old ages. It

was also surprising that the headship rates in rural areas were not lower than those in the urban areas. Though they were slightly lower for ages below 35 years, they were higher for ages above 34 in rural areas, and specially so for ages above 54 years.⁽¹⁾

TABLE 1
Average Size of the Household at Various Ages of Heads of Households in West Bengal (1951)

Age-group	Average size of household	
	Male heads	Female heads
(1)	(2)	(3)
Under 25	2.7	1.8
25—34	3.7	2.7
35—44	4.6	2.7
45—54	5.2	2.4
55—64	5.6	2.3
65 and over	6.0	2.3
All ages	4.4	2.4

Source : Based on Table II, census of India, paper No. 1, 1958 characteristics of Family Households—1951 census—West Bengal and Table CIII, 1951 census of West Bengal.

TABLE 2
Age-Specific Headship Rates for Males in Rural and Urban Areas and in the City of Calcutta (1951)

Age-group	Headship rates for 12 districts of West Bengal			
	Rural area	Urban area*	Total	City of Calcutta
(1)	(2)	(3)	(4)	(5)
Under 25	8.2	15.1	10.0	19.4
25—34	58.7	62.2	59.0	62.0
35—44	85.4	83.8	84.9	76.0
45—54	89.6	89.2	89.5	85.2
55—64	92.0	84.3	90.1	87.6
65 and over	72.4	67.9	71.4	79.9

*Urban area includes the city of Calcutta.

Source : As in Table 1.

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(1) This, probably, was due to the headship being bestowed on persons more for age than for other reasons in rural areas but not so in urban areas.

5. It was worthwhile noting how the age specific headship rates behaved when they were calculated specifically for various marital statuses. It was expected that the decision to establish an independent household was more popular with married men. So also it was expected that larger the proportion of married males in an age group, larger was the headship rate. The relevant data are presented in Table 3. For obvious reasons, in the state of bachelorhood the percentage of males, setting up independent households, was small in all age groups. In the state of widowhood the headship rates were lower than those of the married in urban areas, but this was not so in rural areas. In fact in rural areas the state of widowhood did not seem to affect the headship rate at all. Thus generally it was only the young age and the state of bachelorhood that deprived men of headship in West Bengal.

Similar data on headship rates available for the United States for 1950 from 'American Housing and Its Use' by Louis Winnick indicates that for the married non-farm males the headship rates changed from 92 per cent to 96 per cent for the ages 30 to 74. Even after the age of 74 years, the headship rate among the married was 91·8 per cent. For the age group 25 to 29 years, the headship rate was above 88 per cent and in the youngest age group of 15 to 24, it was about 79 per cent. All these rates compared with those of West Bengal were far higher and they seemed specially so, in the younger and older ages. On the other hand, the headship rates among 'other than married' were much lower in the United States than in West Bengal, varying from 22 per cent to 47 per cent for ages above 34 years.

TABLE 3
Age-Specific Headship Rates in Various Marital Statuses of Males in Rural and Urban Areas* and for the City of Calcutta in West Bengal (1951)

Males	Age group						All ages
	Under 25	25-34	35-44	45-54	55-64	65+	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Married heads :							
Rural area	23·2	61·6	86·9	89·1	92·3	74·5	68·3
Urban area*	36·5	69·3	88·8	94·6	93·6	84·8	74·2
City of Calcutta	39·5	69·4	80·8	90·2	98·4	89·2	71·7
TOTAL	27·0	64·0	87·5	90·6	92·6	76·4	70·6
Widowed heads :							
Rural area	29·8	67·4	89·2	99·1	91·8	68·0	82·0
Urban area*	34·6	55·5	61·9	61·6	55·0	42·2	54·8
City of Calcutta	29·5	46·5	50·8	58·2	58·1	61·4	53·7
TOTAL	31·0	63·6	80·9	87·5	81·4	61·0	74·0
Single heads :							
Rural area	5·4	35·5	38·8	60·9	68·0	29·3	7·1
Urban area*	10·4	37·6	36·7	49·9	56·6	56·0	14·2
City of Calcutta	14·2	39·2	38·6	55·0	36·0	59·3	18·5
TOTAL	6·7	36·5	37·8	55·3	62·8	40·0	9·0

The age-specific headship rates in West Bengal in the various marital conditions were compared also with those of the United Kingdom⁽²⁾ in 1951. The social conditions in the countries like the United States or the United Kingdom are so different from those in India that one could hardly think of such a comparison. But the sheer ignorance regarding conditions in the Indian society encouraged one to compare the conditions in the two kinds of regions.

The headship rates in the United Kingdom are set out in Table 4 along with those for West Bengal⁽³⁾. Surprisingly enough the headship rates of married males in the two countries did not differ to the extent they did for the United States. On the whole, it could be noted that in West Bengal age seemed a very dominant factor in affecting the headship rates and the marital status seemed comparatively less important. Among the married, those in

*Urban area includes the city of Calcutta.

For Source : As in Table 1.

(2) Cullingworth, J. B., Housing Needs and Planning Policy, p. 41.

(3) The age-groups for West Bengal being different from those of the U.K., graphical method was used to estimate the headship rates of West Bengal for the corresponding age-groups. The United States was not included in this Table because of different age-grouping available for the United States.

For Source : See foot note 2.

the age group 15 to 39 years, and those in the oldest age group of 60 years and over stayed under the headship of other males in comparatively larger number. Young age at marriage in the younger age group with its economic dependence and low health standards in the older ages probably explained this phenomenon. Staying under the headship of others in younger ages even when married was however much less common in the United Kingdom and still more so in the United States for obvious reasons.

TABLE 4
Headship Rates in the United Kingdom and West Bengal (1951)

Class of population	Age groups	Headship rates in	
		United Kingdom	West Bengal
(1)	(2)	(3)	(4)
Married males	15—39	78.8	64.0
	40—59	96.3	92.1
	60 and over	97.3	76.5
Single, Widowed and Divorced (M+F)	15—39	3.6	20.6
Widowed and Divorced :			
(a) Males	40—59	67.8	90.1
	60 and over	63.7	66.7
(b) Females	40—59	77.6	30.3
	60 and over	67.9	17.4
Single :			
(a) Males	40—59	26.9	47.2
	60 and over	38.8	56.6
(b) Females	40—59	29.1	19.7
	60 and over	46.7	22.6

6. In the United Kingdom as well as in the United States there was found a definite reluctance on the part of widowed and single men to take on the responsibility of operating a separate household establishment. The fall in headship rates among bachelors and widowers compared to those among married in the United Kingdom and in the United States was much larger than that in West Bengal.

On the other hand, at the extreme ages of above 64 years, the fall in headship rate in West Bengal was considerable among the married while in the United Kingdom there was a slight rise. The headship rate in this age-group was probably affected by the low health standards besides, of course, the other factors like economic conditions, etc, that affected the headship rate of other age-groups too. The fall in the headship rate at extreme old ages should receive special attention since it has certain implications on the need for old age security. The significance of this finding was to be emphasized in the present conditions in India when due to decline in mortality more and more older people will have to pull on with others from the younger generations.⁽⁴⁾

A similar comparison of West Bengal was attempted with the United States of 1890 and 1958, for which only age-specific headship rates were available. These rates were however not sex-specific.⁽⁵⁾ These are presented in Table 5 along with similar rates calculated for West Bengal. Such headship rates for most of the societies are bound to increase from zero for very young ages to well over 50⁽⁶⁾ for advanced ages when the headship rate could be at its maximum. A comparison between the years 1890 and 1950 for the United States shows that the headship rates for the age years 35 to 59 were a little higher in 1890 than in 1950. But for younger ages below 34 years and for higher ages above 60, the headship rates were higher for the United States in 1950 than in 1890. This change in the headship in two periods can be partly explained by the growth of individualism as well as better economic conditions in 1950 so that persons can set up their own households in younger as well as older ages. The change in the age composition also is an important factor affecting change in the headship rate. But by dropping non-adults from consideration, the significance of this factor gets reduced. However, larger percentages of older people in 1950 would have a smaller headship rate in 1950, had it not been for the better old age security measures and better health standards in 1950 as compared to those in 1890. As for comparison of West Bengal with the United States, the headship rates were again higher for middle ages and a little lower for older ages in West Bengal as in the United States of 1890. The rate in West Bengal was markedly higher for the youngest age group. The differences in West Bengal and the United States resulted from those in the percentages of married

(4) Besides the problems of the old in a slow moving society like that of India, if larger number of generations stay together, traditionalism and such other characteristics will be still more difficult to change.

(5) Such rates are presented here for academic interest. It was interesting to know the behaviour of headship rates when they were not sex-specific. Their utility was not much.

(6) If all persons in given age group containing an equal number of males and females were married and were living with their spouses in separate dwelling units, the headship rate would be exactly 50 per cent for both sexes combined. The effect of an increasing proportion of married persons in any age group is a movement toward this 50 per cent level, marriage exerting an upward push in age groups having headship rates lower than 50 per cent (e.g. young age groups) and a downward push in age groups with headship rate above this level (e.g. individualistic modern societies with high income economy). The stated conditions are modified in real life by the fact that (a) the sex-ratio in a given age group is not unity, (b) some married couples stay under the headship of others, and (c) there are varying proportions of 'uncoupled' people in any group whose tendency to establish a private household depends on whether they are single, widowed, divorced, etc.

TABLE 5

Age Distribution and Age-Specific Headship Rates (Not Sex-Specific) for the United States in 1950 and 1890, and in West Bengal in 1951

Age distribution and headship rate	Age/Years									
	Less than 25	25—29	30—34	35—39	40—44	45—49	50—54	55—59	60 and above	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	
1. U.S.A. (1950)										
(i) Age distribution	41.5	8.1	7.6	7.5	6.8	6.0	5.5	4.8	12.2	
(ii) Headship rate	3.2	33.3	40.2	43.7	46.4	48.7	50.4	52.3	53.0	
2. U.S.A. (1890)										
(i) Age distribution	56.0	8.9	7.3	6.2	5.1	4.4	3.7	2.7	6.2	
(ii) Headship rate	1.8	27.3	38.5	45.1	47.9	51.6	53.4	56.0	51.8	
3. West Bengal (1951)										
(i) Age distribution	52.6	18.5		13.1		8.7		7.1		
(ii) Headship rate	5.6	37.7		55.6		58.5		51.2		

Source : American Housing and its Use by Louis Winnick, page 81.

persons in the two populations. Generally therefore the comparison of headship rates in West Bengal and the United States and U.K. brings out the following points :—

- (1) The headship rates in the middle ages did not differ considerably in regions like West Bengal (1951) and the United States (1950).
- (2) Differences in headship rates arose from the differences in the marital pattern.
- (3) Headship rate as an index of joint family showed that joint family was not in vogue in West Bengal to the extent that was imagined.
- (4) Doubling up of married couples due to the young married was much more common in West Bengal than in the countries like the U.S.A. or U.K. But this too perhaps was the result of peasant economy and poor economic conditions rather than the tendency to hang together in extended families.

7. The headship rates for females in West Bengal were on the whole low as seen from Table 6. The headship rate among the widowed was comparatively higher than that among other women. Among the widows it gradually rose in the age-group 25 to 45 years, and declined continuously thereafter. In the U.K. too, widows had a stronger propensity towards maintaining their own dwellings, than women of any other marital status. The headship rate in the U.K. among the married females was negligible as in West Bengal. But among the widows it was markedly high and age for age the widowed females had a higher rate than for widowed males. In the U.K. the headship rate among females went on increasing regularly till the end of life because of the increase in the number of widows with increasing age. This was not the case in West Bengal. Thus the headship rates among females were markedly different in the two regions. The headship rates among females in general and widows in particular in West Bengal could explain a part of the contribution to the extended family besides, of course, the contribution from the old men and the young married men.

TABLE 6
Age-Specific Headship Rates in Various Marital Statuses of Females in Rural and Urban Areas and for the City of Calcutta in West Bengal (1951)

Females	Age groups (years)						
	Under 25	25—34	35—44	45—54	55—64	65+	All ages
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Married heads :							
Rural area	0.7	1.8	2.3	2.2	2.0	2.1	1.4
Urban area*	2.0	4.2	5.5	5.6	5.6	3.7	3.7
City of Calcutta	2.1	4.1	5.2	4.8	5.0	5.9	3.6
TOTAL	0.9	2.3	3.0	2.9	2.8	2.3	1.9

TABLE 6—Contd.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Widowed heads :							
Rural area	12.4	37.0	36.7	26.5	21.5	15.1	26.5
Urban area*	18.4	35.4	36.0	29.7	20.6	16.3	27.3
City of Calcutta	24.9	37.5	32.6	26.9	16.2	15.0	25.3
TOTAL	13.4	36.7	36.5	27.2	21.3	15.4	26.6
Single heads :							
Rural area	0.2	3.7	9.2	15.8	19.4	13.9	0.3
Urban area*	1.3	20.6	25.3	26.7	50.0	75.0	1.8
City of Calcutta	2.0	17.1	24.3	21.6	75.0	100.0	2.7
TOTAL	0.5	10.2	16.6	21.5	28.9	29.2	0.7

*Urban area includes the city of Calcutta.

For *Source* : As in Table 1.

8. Among the married females the headship rate was found to be as low as 2 to 3 per cent. This showed that the headship among married females was rare even when the husbands probably were disabled or were migrants. An idea about the contribution to the extended family from this category of women could be had from the examination of the data presented in Table 7. In this Table the percentage of male heads that were living alone in rural and urban areas and in the city of Calcutta are set out. It is surprising that a large percentage of males in urban areas and particularly in the city of Calcutta lived in one-member households in spite of the fact that they were married. This was true for almost all ages. As will be seen from the Table, about 17 per cent of the male heads of households in West Bengal lived alone. In rural areas only 8

per cent lived alone. But in urban areas and in the city of Calcutta respectively about 35 per cent and 45 per cent male heads lived alone. This could be explained by the common phenomenon of 'lone' migrants in West Bengal and generally in India. This no doubt caused family disruption and extended households.

9. As seen above, the headship rates provide very valuable material in the analysis of the patterns of households formation. The data on headship rates if available at two points of time can be very useful from the demographic and sociological point of view. The rate of headship and the changes in the rate provide an idea regarding the trends in the household formation.

TABLE 7
Percentage of Heads in Various Age-Groups in Rural and Urban Areas* in West Bengal and in the City of Calcutta, Living Alone.

Sex	Age groups						All ages
	Under 25	25—34	35—44	45—54	55—64	65+	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Males :							
Rural area	20.2	10.3	6.2	4.9	4.6	4.9	8.3
Urban area*	65.4	39.5	27.1	21.8	16.6	12.7	34.9
City of Calcutta	75.0	50.3	36.3	29.5	22.7	16.1	45.2
TOTAL	37.8	20.8	12.5	9.7	7.3	6.4	16.7
Females :							
Rural area	49.7	24.9	32.9	46.6	53.7	56.8	40.2
Urban area*	76.0	40.6	33.1	35.8	41.0	48.1	43.7
City of Calcutta	79.1	46.4	34.8	37.8	39.8	50.7	48.2
TOTAL	60.7	28.9	33.0	44.0	51.0	55.0	41.1

*Urban area includes the city of Calcutta.

For *Source* : As in Table 1.

Here it is worthwhile knowing how much change is due to changes in the attitudes of people towards forming independent households and how much is due to changes in the age or marital status composition of the population. Such data also provide useful information regarding 'potential households' if other conditions, such as better levels of living permit household formation. Just as the need for more jobs depends to some unknown extent on the amount of hidden unemployment, so the need for more dwellings depends on the number of hidden or potential households. Hence the incorporation of age-specific headship rates into housing market analysis also has not been uncommon in the West.

10. An attempt was made to estimate the house-

holds in West Bengal in 1961, on the basis of headship rates in the State in 1951. The expected number of households for West Bengal in 1961 was 80,78,832 while the number observed in the census of 1961 was 64,19,695. The expected number was much larger than the observed. Partly this could be explained by the increase in the size of household in the state of West Bengal from 5.10 in 1951 to 5.43 in 1961 which however meant an increase of just 6 per cent or so. This increase is too small to explain the difference in the expected and observed numbers of households given above. The difference therefore may be traced to sampling in the Census of 1951 on which the calculations are based. Possible changes in the age composition and in the age-specific headship rates, may also be some of the reasons for the difference observed.

Rural-Urban Migration and Its Repercussions on Housing Needs**

by
S. P. Jain†

1. DELINEATION OF THE PROBLEMS

The discussion may be divided into two parts, the first relating to rural-urban migration and the second to its repercussion on housing needs. The volume and composition of rural urban migration determines the effect on housing needs and, therefore, its features and causative factors must be properly understood. As at present, migration ranks equal in importance with the rate of natural increase in determining the rate of population growth of urban areas. Migration may be not only rural to urban but also urban to urban or suburban too. The latter is quite an important factor in the growth of population of private cities and is in no small measure responsible for housing shortage.

2. URBANISATION PATTERN

Definition of 'urban' is not uniform in the ECAFE countries, which creates difficulty in measuring the rate of urbanisation. For comparability we may take towns with population 20,000 or over as urban. The rate of population growth of such towns may be taken as a measure of urbanisation but more revealing is a study of the differential growth of towns of various size classes. However, it must be remembered that towns expand in area as well as population. Careful analysis shows that in ECAFE regions the increased rate of urbanisation is primarily due to the growth of principal cities. The degree of urban concentration as measured by the proportion of population in cities with population 0.1 million to total urban population was 63.7% around 1950. Instead of a system of towns of varying size, the urban pattern consists of a few large cities with quasi-rural villages. This metropolitan concentration is the direct result of the better economic efficiency of expanding facilities, where they exist, against the alternative obtained by establishing them afresh in virgin areas. This feature of urbanisation in ECAFE countries leads to the problems of congestion in housing. Actually, the problem is to determine the degree of urban concentration that is economically advantageous in various circumstances.

3. PROCESS OF URBANISATION

Urban population in ECAFE forms 17.2% of the total as against the world figure of 21%. In the West, urbanisation followed industrialisation and hence 'push' factors were generally not out of tune with the 'pull' of the expanding opportunities. In the ECAFE countries there is an imbalance and hence 'over urbanisation'. In these countries the 'push' factor of falling incomes and under-employment in agriculture are now strong but in the absence of reinforcement from 'pull' factors, they fail to cause large shifts in man-power between occupations. This is borne out by 1961 Indian Census data.

4. SEX-AGE PATTERN

The sex-age composition of the migrants depend on 'push' and 'pull' factors. As at present rural-urban migration in the Asian countries is primarily a movement of males. In many countries of South-East Asia, tradition does not sanction the employment of women outside home. Thus, while the volume of rural-urban migration is largely dependent on the economic situation, the demographic characteristics of the migrants are conditioned mainly by long established societal patterns. In India marriage migration forms an important factor. Its magnitude in the context of rural-urban drift is not known. Again, educated rural youth migrate to urban areas for employment. Knowledge of factors influencing rural urban drift is very scanty.

5. TRENDS

Rural urban ratio has changed slowly in most of ECAFE countries. The rate of growth of urban population has been much higher than that of the rural counterpart. A study of 'push' and 'pull' factors influencing rural-urban migration and their relative weights will give an idea of the prospects of future growth of population in the cities. In this context the effect of economic and social development plans should also be taken into account. Factors behind urbanisation are complex. Better information about the characteristics of migrants and inter-relationships of education and other social characteristics of migrants is needed for forecasting trends in urbanisation. There is a view that most of the projections of urban growth are over-simplified and exaggerated. Evidence is not lacking that rates of urbanisation observed in the past two decades may even slow down in future in ECAFE countries, particularly if the Government adopts a directive policy in this regard.

6. PRESENT SITUATION

The demand for housing is determined not only by the volume of rural urban migration but also by the factors of rural-urban differentials in distribution of households by number of inmates and facilities and services that are essential for the normal existence of huddled urban life. For this reason, housing in rural areas may not be as bad as it is in urban areas. The present urban housing conditions in most of the ECAFE countries is very poor, primarily due to low effective demand. The position is aggravated by the unequal growth of housing and population and the disparity may even increase in future.

7. NEED FOR STANDARDS

The general low-paying capacity cannot support a demand even equal to the minimum bare needs. Further, there is the problem of priority that should

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be given to the costly item of housing, when there is a pressing need for capital investment for industrial development. Even in this context estimation of the needs, which differs from demand in being independent of the three variables of price, income and consumer preference, is desirable. Estimate of needs is essential for developmental planning. As yet, there is no satisfactory definition of a household and housing needs. Needs depend on standards.

Due to chronic shortage in urban housing and low-paying capacity, there is a tendency to build houses of the lowest standard acceptable, which may not be desirable. Housing is also an instrument of social planning and maintenance of health and efficiency of the labour force. Unless care is taken to prescribe a standard, there is a likelihood of the constructions degenerating into slums.

Bad housing conditions keep mortality high by spreading infectious and communicable diseases. Better housing may help in reducing fertility by providing the requisite privacy for using contraceptives. Its effects on internal migration, marriages and family formation are not marked in the conditions in ECAFE countries. Anyway, housing has its repercussion on demographic trends and this strengthens the argument for setting up housing standards and estimating needs.

8. STANDARDS

Standards depend on climate, current way of living of people, household formation (whether based on extended or joint family or conjugal family), shortages, availability of finances and difference between economic and social rent.

9. REQUIREMENTS OF ECAFE COUNTRIES

The point for consideration is whether the Western standards of space per person or room per person and hence of dwellings of different sizes and types appropriate for households of different sizes and types are applicable to conditions of ECAFE countries. Broad consideration in laying down

standards may relate to provision for each house of independent baths, WCs, verandahs, small open private enclosures, and multipurpose rooms. The standards will probably be correlated with income groups and size and composition of family, as minimum requirements and privacy considered to be necessary and desirable should be provided. The approach has to be pragmatic. The existing conditions of housing and living habits of the people have to be considered and a small properly planned house for a family should be suggested; otherwise, living conditions may become even worse, due to the tendency to sublet or double up, if fanciful or unrealistic standards are recommended.

10. THE NEEDS

Estimates of housing needs depends on the evolutions of desirable standards for houses. The number, condition and location of dwellings have to be determined for the present and the future on the basis of one dwelling unit per household. Their geographical distribution in the urban areas depends on the magnitude and direction of rural-urban migration. It is not easy to make estimates, for they raise questions of defining a dwelling unit and a household. Census data may not reveal the correct need, as census households are determined by available dwellings. As a first approximation it may be taken that the need for housing will increase at about the same rate as population, which assumes an unchanged structure of household and the family. A desirable refinement is to introduce the factor of trends in household formation, which should take into account the sex age composition and relationships. Indian Census (1961) data on headship may be useful in this context. Headship rates depend also on age composition and customs relating to marriage. Problems of newhousing and rehousing have also to be considered. The data are lacking for such calculations. The problem becomes even more difficult, if it is desired to assess the impact of rural urban migration on housing needs, because of the lack of necessary data on the demographic characteristics of migrants. However, studies along with a consideration of capacities of cities to expand housing are essential.

Urbanisation in India—Its Trends and Characteristics*

by

Shri P. R. Nayak, ICS†

1. There have always been cities in India from ancient times but they were in the main centres of political power. The inter-relationship of urban and economic growth, which emerged powerfully in the West and in Japan during the 19th century has, however, been noticed in India only in the last few decades. In the 40 years since 1921, the percentage of urban population in the country has almost doubled. In absolute terms, the increase has been from about 28.2 million in 1921 to nearly 78 million in 1961. This period has witnessed a substantial growth in the industrial development of India and the increase in the urban population follows the pattern that has been observed in other countries embarked on an industrial revolution. But judged by the growth of urban population, the tempo of industrialisation in India has been slower than during comparable periods in other countries. Elsewhere, there was a much larger increase in urban population during the 4 or 5 formative decades of industrialisation preceding the take-off stage. It is fair, therefore, to conclude that India has still some time to go before attaining analogous levels of industrial growth and that, a very substantial further expansion of the urban scene is still to come. Even so, in the 20 years from 1941, the urban population has increased by over 75% or 34 millions. This is indicative of the special push to industrial growth seen during the period of last war and subsequently when India launched on and executed comprehensive national plans for development.

2. Apart from industrialisation, urbanisation in India has been influenced by social and economic factors, such as mobility, family disorganisation, housing, poverty, disease and health conditions. There have operated what are called 'pull' and 'push' factors. The unsatisfactory rural scene, under-employment and unemployment, social tensions—these are some of the factors tending to push people out of the villages. In equal measure, cities pull people towards them with the greater prospect of employment, their cloak of anonymity and their superior recreational facilities. Social and economic research has indicated that three important processes have been under-lying the urbanisation trend in the last two decades, in particular, viz.—

- (a) There was a substantial exodus to industrial towns and cities because of greater employment opportunities during the last war and the greater hardships of living in the villages.
- (b) A large proportion of the population that had moved into the cities during the war remained in the cities owing to the in-

creased opportunities for gainful employment that post-war industries created.

- (c) The post-partition influx of displaced persons from Pakistan brought people who were predominantly rural in origin in Pakistan to urban areas in India. This is especially true for the great cities of Bombay, Calcutta, Madras, Delhi, Kanpur, Ahmedabad, etc, where, besides, the other two factors have also operated.

The increased pace of industrialisation and the flow of new industrial units into the established population centres continues as a magnet to people in search of a better way of life.

3. The larger Indian cities have generally exhibited two or three faces. There is a well-planned sector in which the British rulers of by-gone days and the richer classes lived in conditions of sufficient services and amenities. These are not really Indian in origin and culture and in other ways, too, appear far removed from the older sectors of our cities with congested and inadequate services and exhibiting all the maladies that ill-planned development can bring. Lying cheek by jowl with these sectors are the newer shanty towns, which the more recent migrants from the rural areas have been forced to build. These clusters of huts and the ever-growing pressure on the older parts of towns, where authority is unable or perhaps at times unwilling to enforce civil standards, have produced a substantial deterioration in living conditions.

4. Indeed, the situation is becoming so acute that urgent thought is being given to the measures, social and economic, that must be taken to halt and, if possible, reverse the movement of people into the cities, as far as possible. Thus, the significance of providing basic amenities to the people in the rural areas as a means of arresting influx into the big cities has been emphasised repeatedly. The Planning Commission has prepared a detailed programme of providing certain minimum and basic amenities to all sections of the population by the end of the Third Five Year Plan. These basic amenities would make provision for drinking water, the provision of free and compulsory elementary education to all children of the age group 6-11 years and the construction of an approach road connecting every village to the nearest marketing centre, main road or a neighbouring railway station. The Plan will pay special attention to the removal of disparities between the rural and the urban areas, between one region and another and between the richer and the poorer sections. The expansion of educational and medical facilities will be spread out in the rural areas instead of being concentrated

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mainly in the cities. The villages will receive high priority in the supply of electric power. While sanctioning new industries, both small and large scale, the need for developing backward regions in the country will be specially kept in view so that they are able to achieve more balanced regional planning. Thus, while an attempt will be made to check the influx into cities, it will be useful to have a look into the situation that has developed in the urban areas.

5. The basic needs of the urban areas relate to the various things that are essential for meaningful life—adequate housing, a good supply of drinking water, public health and medical relief services, recreational facilities and promotion of a sense of community life. But during the earlier decades, unpreparedness for a large influx of people and in part, the policy of *'laissez-faire'* on the part of Authority created serious deficiencies. A national survey of new houses required during the 1951-61 decade in the urban areas for the increased population, for meeting the shortage and for replacing the existing slums puts the requirement at 8:77 million dwelling units. On this basis, and in the light of the actual progress made on house-building during these years, it can be said that approximately half the urban population resides in extremely unsatisfactory accommodation. As an example, it has been estimated that, in the Island of Bombay, over 16,000 buildings out of a total of 54,000 are more than 60 years old; are built to standards that are utterly obsolete and, in the main, are unfit for human habitation. About 200,000 single room tenements house 1 to 1.2 million of the population. Besides, hutment colonies are a familiar sight. Overall, the shortage of housing accommodation in Greater Bombay is of the order of nearly 300,000 dwelling units. But the rate of construction in the last decade was only 5000 to 6000 per year. Delhi is known to be deficient by over 100,000 houses for the present population. The annual growth probably demands 20,000 new houses. But in recent years, despite intensive Government efforts, the average new construction has been only 10,000 houses.

6. The shortage of housing has not only created over-crowding and deterioration in living conditions, but has also been responsible for promiscuous growth on a large scale. As earlier stated, one sees for miles around the urban core, houses of all sizes and standards built without any basic services, such as water supply, drainage and electricity and with no thought given to an orderly lay-out or the availability of services, such as schools, housing and medical relief. It is estimated that there are probably 70,000 such structures in Delhi alone. Promiscuity is seen not only in the outcrops of hutments amidst well-developed areas. The stress of production during the last war and subsequently, and the employment needs of the growing population have led to the establishment of small, medium or large industrial groups in the cities in and around residential premises and spreading noise and nuisance. A recent survey in old Delhi had disclosed that there are over 15,000 such concerns subject to the licensing laws but clearly unsuited by their nature and location for such regularisation.

7. A reasonable level of services, such as transport, education, power, water supply, sanitation are the pre-requisites for a decent way of life in concentrated communities. A review of the situation in selected cities has disclosed that serious deficiencies are existing. Owing to limited resources in

men and materials and partly to the absence of long-term planning, the correction of the deficiencies, where attempted, has been slow or inadequate. The gaps that exist have exposed local governments to much justified and unjustified criticism. Their ability to meet and overcome the situation is doubted; and an equally distressing development is the widespread evasion or defiance of authority in many spheres of city government.

8. On the physical plane, over-crowding, the growth of slums and a lowering of civic standards are the most noticeable features of urban living. On the social and cultural side, the new migrants into towns and cities tend to cluster together either according to caste or according to religion. This is probably in part a defensive mechanism against the unpredictables of urban living, but it has tended to hamper the growth of community feeling. A sense of belonging to the newly adopted home, a pride in the city and a desire to add to its strength and beauty are slow in growing. Perhaps the stress of urban life leaves little time for the growth of the finer sentiments. It is no wonder, too, that delinquency, especially amongst the younger generation, is becoming a serious problem. The absence of recreational facilities and the difficulty of self-expression in a healthy manner result in a lowering of the standards of behaviour.

9. But, in the final analysis, it is the steady and frequently rapid deterioration in living conditions that causes alarm; for there is no doubt that the wide disparities that are noticeable in living conditions in our towns and cities can be an important factor in the growth of discontent and agitation. The urban areas, therefore, hold explosive potentialities. The remedying of the situation is a matter of concern, not only to local authorities but also the national Government. But it remains true even now that the resources allocated to urban development fall far short of what the needs demand not only immediately but also in the coming years of steady urban growth. This is in part the result of a feeling that urban areas already provide for a better standard of living; and the first priority in national planning must be the strengthening up of the villages. It has been said that during the British period the cities gained unusual advantages in the matter of developmental resources and that this was done at the expense of the villages. The time has come, it is said, when the process must be reversed. But in reality, what is needed is not a reversal of the process, but an allocation of resources with due regard to national interests as a whole. It is inevitable that industrial growth, however much one may wish to canalise it away from the larger cities, will continue, as in countries elsewhere, to exert a steady pressure on these centres. If thus, industrialisation and urbanisation will and must grow and expand, the regulation of this inter-relationship in a reasonable manner seems inescapable. We may certainly build our new major industries away from the larger cities. But even so, the larger cities will continue to attract both people and industries; and the prevailing unhealthy conditions of life must be remedied and some-reorientation in our thinking on the allocation of resources must take place.

10. Attempts have been made in the matter of industrial growth to plan for a measure of decentralisation. Thus large new industries in the public sector have grown up in the heart of the rural areas. But the proper location of industry with due regard to economic considerations cannot be a

simple matter of dispersal from the cities. What is needed is a well-studied regional urban planning approach to the problem of industrial location. The needs of a region for added employment opportunities, the dependence of the region on certain existing urban areas and the planning of growth to subserve also the needs of the cities—all these must be carefully catered for. First steps in this direction have been taken in India. But the process is a slow one and requires the full weight of authority to speed it up and make it successful. And it may become necessary to think of a region that cuts across State jurisdictions so as to create the most favourable conditions for growth. This requirement bristles with problems of a political nature, and a solution must rest on closer economic and emotional integration.

11. Regional urban planning also dictates the need for the adoption of Master Plans for the development and re-development of cities. Two such notable ventures which have been taken up relate to the Delhi Master Plan and the more recent Calcutta Master Plan survey. Looking far ahead into the future, these Master Plans endeavour to provide for the growth of satellite towns for the dispersal of industry and for the deconcentration of population in the congested older parts of our cities. The problem, however, of translating these plans into reality is of a stupendous nature. There is firstly the question of resources already referred to. Of far greater importance is the need for public understanding and co-operation. This understanding and co-operation are now sought to be acquired through a new programme of urban community development, which has been undertaken on an experimental basis in some of our major cities. The inculcation of attitudes of self-help, self-reliance and

community participation in the tasks of improving the environments are the principal objectives of this movement. Experience in Delhi, particularly, has been encouraging but lasting results cannot be achieved over a short period of time. As in the rural areas, so in the towns and cities, the need for long-term measures for fostering community spirit and community participation in programmes of development is becoming more clearly established.

These tasks fall primarily on local government authorities. It is not possible to say that these authorities are rising to the occasion. An excessive intrusion of politics in local governments is creating tensions and retarding progress. Perhaps we have yet to arrive at the right form of urban government for meeting the challenge of the times. But it is not merely the form of government that may require change. The true spirit of local government has to be captured. Local government is essentially an instrument for service; and it is the idea of service, rather than that of authority in the conventional form of government that we must nurture. The growth of such feeling is a matter in which the citizen has a voice and a responsibility. What, therefore, our local government needs today is a greater interest and a greater participation by the citizen in the affairs of his city. There is probably not enough vocal opinion in our cities. The '*laissez-faire*' attitude which in olden days centred round the local authorities seems now to have passed to the local population. One hopes that the growth of education and the results of urban community development programmes will produce a new spirit, designed to bring about an acceptance of service as the primary duty of local government authorities.

IV
HOUSING STATISTICS

Housing Census*

by

R. Prasad†

1. IMPORTANCE OF A HOUSING CENSUS

1.1 The importance of a Housing Census is now generally accepted. Among the deficiencies in the standard of living of large sections of the population of the world, lack of adequate housing is one of the most important. Many social problems originate in, or are aggravated by shortage of housing. The tremendous growth of population in recent decades and the marked trend of movement of population from the rural to the urban areas has further accentuated the shortages of housing in some countries, particularly India. Governments and local bodies are now taking an increasing interest in the programming and financing of housing and community development. International assistance, both technical and financial, is also being made available to developing countries. It is thus important that the existing housing conditions are surveyed and both present and future needs are properly assessed. A Housing Census alone can fulfil these requirements.

1.2 A Housing Census has assumed importance also because of the varied use that is made of it. In U.S.A., for instance, the users represent fields of investment, marketing, planning, consumer goods, mortgage financing, building materials, business and social research, education and government.

1.3 Relation between Population & Housing Census—A recent survey conducted by the Statistical Office of the U.N. shows that during 1945-54 at least 44 countries took the census of housing. Of these 38 (i.e. 87%) took them in the same year as the Census of Population. In fact in 35 countries (i.e. 80%) the enumeration of population and housing censuses were made on essentially the same dates and a number of countries even used joint schedules (e.g. Bolivia, Brazil, Chile, Dominican Republic, Ecuador, Haiti, Mexico, Paraguay, Japan, Philippines, Finland, Iceland, Ireland, Luxembourg, Portugal, U.K. and Australia). Even where different schedules were used for the housing and population census, there was usually a relationship between the two. Both censuses had the same organisation and staff or the census of housing was a preliminary step providing a listing of houses and households for the census of population.

1.4 It is obviously desirable that the housing census should be inter-related with the population census. The numbering and listing of houses is an essential preliminary to a population census, as also a housing census. The unit on which a population census is based is the household while the unit on which a housing census is based is the housing unit or dwelling in which the household resides. There will thus be great operational eco-

nomy if the two are held simultaneously. Then there is also the advantage that demographic data relating to households can be studied in association with the data relating to dwellings in which they live. A housing census has to collect, compile, analyse and publish statistical data of all housing units and also the occupants thereof. The aim of a housing census is to prepare an inventory of housing together with the housing conditions of the population. If a housing census was to be held separately from the population census, additional efforts will have to be made to collect data on households occupying the dwellings which would otherwise have been collected as part of the population census. For conditions in India it appears necessary that a housing census precedes a population census. In the population census of 1961 in India, a housing census on a limited scale was for the first time carried out along with the preparation of the house lists. This operation should be further broadened in its scope in the next decennial census.

2. OBJECTIVES OF A HOUSING CENSUS

2.1 The objectives of housing census are to collect quantitative, qualitative and social data relating to housing. In the first place a housing census is to make an inventory of all the housing units which constitute the existing housing accommodation at a given time. Secondly the housing units have to be classified according to their structural characteristics, geographical location and available installation and services. Thirdly, a housing census has to count and classify the population living in the various types of housing units according to household and family relationship and demographic and economic characteristics.

3. DEFINITION OF A HOUSING UNIT

3.1 Before starting a housing census it is important to arrive at a clear definition of the term 'housing unit'. In the past the term 'dwelling' has been most frequently used for a housing unit in most of the countries of the world. But the U.N. now prefers the term 'housing unit'. Unfortunately there has been a lot of confusion in this definition in many countries of the world (*vide* Appendix I). The confusion usually takes place in the inability of the enumerators to distinguish between the concept of a 'household' and a 'housing unit'. The two concepts are clearly distinguishable although they are interdependent in as much as the one should not be considered without reference to the other. It should be emphasised that several households can live together in the same housing unit and one household may occupy several housing units.

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3.2 In India the confusion in defining a 'house' had existed from the very beginning of the Census Operations. An attempt was made in the censuses of 1881 to 1901 to distinguish between the concept of a 'house' and a 'household', but the attempt proved unsuccessful. The enumerators returned the same number of 'occupied houses' as the number of households. The census then changed the definition of 'house' to that of the 'dwelling place of a single 'household' and the definition continued till 1941. In 1951 a big effort was made to distinguish the concept of a 'house' and a 'household' and the attempt was largely successful. In two States, however, the old confusion persisted. In 1961 the Indian Census defined census house as a 'structure or a part of a structure inhabited or vacant or a dwelling, a shop, a shop-cum-dwelling, or a place of business, work-shop, school, etc, with a separate entrance'. This definition is unique and in fact covers all buildings. It was obviously introduced to ensure the numbering of all buildings for purposes of the Population Census. But it also indirectly illustrates the difficulties in the way of properly defining a 'housing unit'.

3.3 This problem of defining a 'housing unit' has been discussed at a number of International Conferences and the U.N. have now recommended the following definition:—

A housing unit is a structurally separate and independent place of abode. It may either (1) have been constructed, built, converted or arranged for human habitation, provided that it is *not* at the time of the census used wholly for other purposes, and that in the case of mobile, improvised and collective premises it is occupied at the time of the census, or (2) although not intended for habitation actually be in use as such at the time established as reference for the census. Consequently, a housing unit may be (1) an occupied or vacant house, apartment, independent room or group of rooms; or an occupied hut, cabin, trailer, hotel, institution, camp or (2) a barn, cave or any other shelter used as living quarters at the time of the census'.

It will be seen that the essential features of a 'housing unit' are *separateness and independence*. It may also be noted that 'housing unit' can be either a permanent or a semi-permanent structure.

4. CLASSIFICATION OF HOUSING UNITS

4.1 Housing Units are of so many different varieties that it is necessary to arrive at a systematic classification in order to properly analyse the data. Appendix II gives the classification recommended by the U.N. into private housing unit, collective housing unit, etc, with their sub-classifications.

5. MECHANICS OF A HOUSING CENSUS

5.1 Having properly defined a 'housing unit' the next operation of a Housing Census is to list the housing units in the area covered by the Census. Where an adequate system of house-numbering does not exist it will also be necessary to carry out a house-numbering operation before listing. Since it will be necessary during the census to investigate both residential and non-residential buildings in order to ascertain whether they are occupied or not it has been suggested by the U.N. that all buildings should be listed at the time of the Housing Cen-

sus although data would be collected only for those falling within the definition of a 'housing unit'. Such a list might also serve as a registration for census of distribution and similar enquiries. In India where the numbering even in municipalities is very inadequate an *ad hoc* house-numbering operation has to be carried out before every population census. If a housing census immediately precedes or follows or is held simultaneously with a population census the labour of this vast operation will be saved.

5.2 Rural and Urban Classification—It is necessary, specially in undeveloped countries, to carefully demarcate rural and urban areas before launching on a Population or Housing Census. The reason is that the housing conditions in the rural and urban areas are very wide apart and it may be necessary to use different schedules for enquiries in the two areas. In India the rural and urban classification is carried out at every population census. In the censuses prior to 1961 all incorporated localities and localities with over 5000 population which were not merely overgrown villages were treated as towns. In the 1961 census, however, a restricted definition has been applied. An area will be treated as urban only—

- (i) If it has a population of not less than 5000;
- (ii) If its density is not less than 1000 per square mile; and
- (iii) It has an employment of not less than 75% of the adult male population in non-agricultural pursuit.

The new definition has reduced the number of urban areas in the country.

5.3 Field Organisation—A strong field organisation is an important requirement of any successful Census Operation whether population or housing. The rural villages have to be grouped into Blocks for enumerators. Likewise urban areas have to be mapped out and segmented into Blocks. It is necessary to prepare urban Blocks in a very careful manner for the rapid changes in the households and the conditions of housing will make any future surveys and comparison difficult. The National Sample Survey have evolved a very efficient technique for the formulation of urban Blocks which are nearly equal in size of population and are bounded by roads or other such land marks. The technique was found to be useful even by the Population Census Organisation which adopted the urban frame survey of the NSS in a large number of towns. Blocks also serve as a very convenient sampling units for any scheme of sample surveys.

5.4 Each Block is entrusted to an enumerator and a group of Blocks to a supervisor for purposes of field work. Other higher officers are also appointed for superior supervision. The enumerators and other staff are then very thoroughly trained in the instructions and the schedule which has to be canvassed from house to house. The accuracy of the Housing Census would be in direct proportion to the efficiency of this training. The enumerators then move from house to house in their Block on prescribed dates and in the prescribed manner. The filled-in schedules are scrutinised and handed over to a central organisation for further scrutiny and tabulation. Some provisional totals can be

obtained in the very process of the despatch of the schedules. But final tables may take considerable time to be ready.

6. TOPICS FOR THE HOUSING CENSUS

6.1 Appendix III gives the recommendations of the United Nations on the list of basic items and additional items recommended for inclusion as items in the Housing Censuses. The list is a useful guide for all countries of the world. It is not intended to be mandatory. Every country has to utilise it in the light of its own resources and requirements.

6.2 The basic items recommended in Part A of the list can be easily included in any housing census even in the underdeveloped country. The items recommended in Part B of the basic items can also be covered in a majority of the underdeveloped countries including India.

6.3 The data recommended as additional items should, however, be included only in more advanced countries or in the urban areas of underdeveloped countries. With the exceptions of items like 'Gas installations', 'Heating installations' and household conveniences like television receiver, washing machine, telephone and vacuum cleaner, perhaps all these additional items could be appropriately included in a housing census of the bigger towns of India.

7. USE OF SAMPLING TECHNIQUE

7.1 A complete enumeration of the human population by geographical areas is a legal necessity in almost all countries of the world. It is utilised for delimitation of constituencies for all local bodies and legislatures and also forms the basis of financial adjustments between the Centre and the States, between the States themselves and between States and local bodies. There is no such obligation in respect of a housing census. While a complete enumeration of the housing units may be desirable it will be waste of resources to carry out a complete enumeration of characteristics, installations, facilities, occupancy or ownership of the housing units. This data can best be collected on a random sample basis. Most countries of the world employ sampling at one stage or the other of a housing census (*vide* Appendix IV). Sampling surveys are also found useful for carrying out inter-censal enquiries into housing conditions. The sample design ensures the measurement of the main components of change at the national as well as regional levels.

8. TABULATION

8.1 Appendix V gives the recommendations of the U.N. for the main tabulation recommended for a Housing Census. It is important not to plan too many cross tabulations of which no immediate use can be made. Tabulation is both an expensive and time consuming operation and it is necessary to carefully plan tables along with the main scheme of the Housing Census.

9. A HOUSING CENSUS FOR INDIA

9.1 For the first time in 1961 a number of details regarding houses were obtained along with the house lists prepared for the Population Census. These were:—

- (i) The use to which a house is being put, viz., dwelling, or shop-cum-dwelling or workshop-cum-dwelling, etc;

- (ii) Owned or rented;

- (iii) Material of wall and roof;

- (iv) Number of rooms.

9.2 Prior to this the NSS had been carrying out Housing Surveys on a small sample of rural as well as urban areas. These surveys are of a very comprehensive nature and include a majority of the items recommended by the U.N. They cover, both installations and facilities attaching to Housing Units. The results of the data collected during the 7th, 10th and 11th rounds of the NSS have already been published in Report Nos. 26, 50 and 51, while those for the 12th round are in the press. The data collected in the 15th and 16th rounds is still in the processing stage. The NSS has also collected even more detailed housing data from selected working class and middle class families as a part of the Level of Living Surveys in 1958-59 from about 90 centres in India. A total number of about 6000 working class and about 9000 middle class families were covered in these surveys. The NSS also carried out a type survey of two-roomed government residences in New Delhi. These surveys have provided very useful data for overall planning. The NSS surveys, however, are designed only to give estimates at the State or Zonal level. For data relating to individual towns or smaller areas a housing census or a Sample Survey with much bigger sample size is necessary.

9.3 There are serious difficulties in organising a full-scale Housing Census in this country independently of a population census. It needs a vast administrative machinery to carry out a large-scale operation of this type in a country of our size. The cost factor also may be prohibitive. The last population census cost over rupees ten crores. The State Government without whose co-operation it is not possible to execute such an operation, usually find it very difficult to spare their staff at frequent intervals for extraneous work. Then there are inherent difficulties in recruiting and training staff for an *ad hoc* operation.

9.4 In order to meet the difficulties outlined above it is suggested that we should employ the sampling technique for achieving our objectives. For the rural areas of India it does not appear necessary to carry out a housing census on a complete enumeration basis at all. The sample surveys of the NSS have provided nearly all the material that is needed or can be utilised at the present moment. If necessary, the sample size can be increased and a few items of inquiry added. For the urban areas, however, it is necessary to have comprehensive surveys. Perhaps a sample survey with a sampling fraction of 1/4 or 1/5 or even 1/6 for houses within a town would be sufficient for all practical purposes relating to that town. We need not, however, take up all the towns simultaneously for such a survey. The towns can be appropriately classified and their survey spread over 5 years or more. Thus a suitable sample design can give us all the data that we require for local and national purposes through a continuous sample survey. This scheme would have the supreme advantage of a permanent field staff which can be properly recruited and adequately trained for high quality work. The staff can also be utilised for introducing a uniform system of numbering of houses throughout India and perhaps also for assisting in collecting data regarding new constructions which all the States are finding it difficult to manage. The saving, in cost is obvious.

APPENDIX I

Definition of housing units in the housing censuses of some of the countries of the world

1. AUSTRALIA : 1954

"Dwelling" : For the purpose of the Census, a dwelling is any habitation occupied by a household group living together as a domestic unit, whether comprising the whole or only part of a building. The term has, therefore, a very wide reference, and includes, in addition to houses and flats, great variety of 'dwellings' ranging from a single roomed shack to a multi-roomed hotel or institution.

"Occupied dwellings" : Occupied dwellings are classified into private and other dwellings.

"Private dwellings" : These comprise mainly private houses (including sheds, huts, garages, etc. used for dwelling purposes), share of private houses, flats, and rooms, apartments, etc. In previous censuses dwellings returned on the schedules as sheds, huts, garages, etc. were included with private houses.

"Share of private house" : A share of private house is a portion of a shared private house which is occupied separately and for which portion a separate householder's schedule was furnished.

"Flat" : A flat is part of a house or other building which can be completely closed off and which includes both cooking and bathing facilities.

"Other private dwellings" : These include dwellings, such as apartments, rooms, etc. which are part of buildings but are not self-contained units.

"Dwellings other than private" : These include hotels, boarding houses, lodging houses, hostels, educational, religious and charitable institutions, hospitals, defence and penal establishments, police and fire stations, clubs, staff barracks and quarters, etc.

"Unoccupied dwellings" : The term 'unoccupied dwellings' is not synonymous with vacant houses and flats available for occupancy, but refers mainly to 'week-end', holiday and other dwellings whose usual occupants were temporarily absent on the night of the census. Newly completed dwellings awaiting occupancy are also included. Examination of the geographical distribution of such unoccupied dwellings indicates that for the most part they were temporarily unoccupied, or located in rural areas other than towns with a population of 1,000 persons or more.

2. BURMA : (a) Housing Census 1953

"Dwelling unit" means a room or sets of rooms ordinarily meant for the occupancy of a household. In counting the number of dwelling units, a dwelling unit must have its own separate living quarter, and a separate entrance to this quarter must also exist.

(b) Sample investigation in connection with population census, 1954

That part of the structure which is occupied by people is called a "dwelling unit". This is the normal living quarters in which a group of people ordinarily called a household live. It can be the same as the structure providing that the entire structure is used as a dwelling unit or it can be only part of the structure, e.g. the dwelling unit may consist of half the structure while the other half may be devoted to an industrial activity or a store.

3. CEYLON : 1946

What constituted a separate dwelling was somewhat widely defined to suit local conditions, the chief criterion being the possession of separate cooking arrangements.

4. INDIA : 1951

For this purpose 'house' means every dwelling with a separate main entrance. The dwelling is the social unit and the census unit, but outside physical identification must also be possible. Hence the form of definition above.

5. JAPAN :

(a) 1948

The "Dwelling unit" was taken as the basis of the survey and one schedule was made to cover each one of it. The unit was defined as follows :

(i) A dwelling unit shall be such housing which had bedroom, kitchen, etc. so that it was capable to accommodate one independent household or a part of a building completely separated for such purpose as above.

(ii) Thus dwelling unit shall come under an independent idea from either a household or a building. If a dwelling house was intended for a single household but was dwelt by two or more households it shall be counted as one dwelling unit and the entry of one tabulation shall be made, although the number of households may be two or more. On the other hand a household covered by one roof but arranged to accommodate two or more households separately, has to be counted as two or more dwelling units and tabulated accordingly.

(iii) Under the idea as above explained each apartment or apartment house or each dwelling unit or tenement house shall be taken as one dwelling unit and the tabulation has to be made individually for every one of them. On the other hand if two or more households were living in an ordinary house, a single tabulation has to be entered as the dwelling unit was one.

(iv) In case of a barn, store house or detached quarters apart from the main house being occupied by other household, they have to be taken as separate dwelling unit and the entry of tabulation must be done individually.

(v) If quarters for accommodating household of janitor, etc. were provided in a building, such quarters shall be counted as a separate dwelling unit.

(vi) Quarters inhabited, having been so constructed in a part of factory or office building, shall be entered as separate dwelling unit. The temporary hut or dugout shed shall be counted as a dwelling unit.

(vii) The boarding house, billet, dormitory, etc. where they are lived by quasi households shall be surveyed as a single dwelling unit, if they were any ordinary household living, such part shall be censused as a single dwelling unit.

(b) 1950

A dwelling is a durable structure which was originally built to be used for family living quarters, a durable structure renovated in a manner suitable for family living or a part of a durable structure completely partitioned off for family living quarters. A store, shop or office may be attached to such a structure.

Note that a dwelling was a structure which was originally built or remodelled to serve as family living quarters. It does not matter how it is being used at the present time. Therefore, a quasi household which does not maintain family life may be housed in a dwelling. A household living in a rented room of a structure built to be used at living quarters should also be reported as living in a dwelling. On the other hand, a normal household may not live in a dwelling even though they are maintaining a family life.

6. FEDERAL REPUBLIC OF GERMANY : 1956

By "Dwelling" is meant, as a rule, a set of rooms which is structurally intended for habitation by a household and has the following characteristics :—(a) a structurally provided kitchen or kitchenette; (b) a separate entrance directly from the staircase or from a vestibule or from the exterior.

7. IRELAND : 1946

A "Dwelling" has been defined for census purposes as any room or set of rooms used for habitation by a private family.

By dwelling is meant the rooms occupied by the family whether or not these rooms are structurally separated from the rooms of other families.

8. UNITED KINGDOM : 1951

"Dwelling" means a structurally separate dwelling and generally comprises any room or suite of rooms intended or used for habitation by persons living in private households having separate access to the street or to a common landing or staircase to which the public has access. Caravans (or a group of two or more caravans when occupied by the same household) and house boats (or other vessels used as such) were treated as dwellings if occupied on census night but not otherwise.

9. UNITED STATES : 1950

A group of rooms or a single room, occupied or intended for occupancy by a family or group of persons living alone, is a dwelling unit if it has (a) separate cooking equipment or (b) two or more rooms and separate entrance. *Exception* : A one-room apartment in a regular apartment house, or one room which is the only living quarters in the structure, is a dwelling unit even though it does not have separate cooking equipment.

Living quarters which do not fulfil one of the conditions above are combined with the landlord's quarters, or with each other if the landlord does not live in the structure. If the combined quarters contain fewer than 10 lodgers, they are considered one dwelling unit. If the combined quarters contain 10 or more lodgers, they are considered one 'non-dwelling unit quarters'.

APPENDIX II

Classification of housing units

1. Private housing units :

1.1 Conventional (permanent) dwelling (Houses, apartment, flat etc.)

1.2 Rustic (semi-permanent) housing units (Huts, cabins etc.)

1.3 Mobile housing units.

1.4 Improvised housing units.

2. Collective housing units :

2.1 Hotels, rooming houses, and other lodging houses.

2.2 Institutions.

2.3 Camps.

2.4 Multi-family housing units.

2.5 Housing units not intended for habitation but in use for the purpose.

3. In permanent structures intended for non-residential purposes (Barns, mills, garages, warehouses, etc.)

4. Others (Caves, natural shelters, etc.)

APPENDIX III

Topics to be considered in the housing census

A. Data to be obtained from each housing unit.

1. Location

2. Class or type of housing unit

3. Number of occupants.

4. Selected demographic and economic characteristics of occupants and household and family relationships.

5. Water supply system.

B. Data to be obtained from each conventional (permanent) dwelling and rustic housing unit.

I. Characteristics, installations and facilities

1. Type of dwelling or rustic housing unit

2. Number of rooms

3. Toilet installations

II. Occupancy

1. Occupied or vacant

2. Tenure (if occupied only)

Additional Items : Data for private housing units

I. Installations

1. Cooking facilities

2. Bathing facilities

3. Electricity

4. Gas installations

5. Heating : (a) central heating by steam, hot water, etc.; (b) other types; (c) source of energy (electricity, gas, oil, coal, etc.)

6. Installations for cottage industries

II. Household conveniences

1. Refrigeration

2. Telephone

3. Radio receiver

4. Television receiver

5. Washing machine

6. Vacuum cleaner

III. Characteristics of Building

1. Type of building in which the dwelling is located. (Residential or non-residential, single dwelling or multi-dwelling, number of floors, etc.)

2. Year of construction
(For example : before the First World War, between the two World Wars, after the Second World War)
3. Materials : (a) of the walls; (b) of the roof; (c) of the floors
4. State of repair or dilapidation
5. Floor space of the dwelling
6. Outdoor spaces : (a) courtyards, (b) platforms, (c) terraces, (d) gardens, etc.

IV. Occupancy

1. Rent paid in the case of units rented
2. Total capacity of occupation.

V. Ownership

1. Owner
2. Economic activity of owner (if privately owned),

APPENDIX IV

Use of sampling for collection of data on housing

1. BURMA : First stage census (1953)

The census was confined to urban areas, viz., 252 towns and covered both population and housing. There was complete listing of houses and households but the collection of housing data was confined to a 20% sample of the dwellings.

2. CANADA : Census of population and housing (1951)

Complete count of dwellings was taken in conjunction with the enumeration of the population and this was used as a basis for weighting the sample for housing data. For the most part housing data were developed from a 20% sample of all dwellings.

3. JAPAN : After World War-II, national housing surveys were carried out (in 1948, 1950, 1953 and 1955) together with a number of housing surveys covering only limited areas to find out basic data to be used for the relief measures to remedy the housing shortages caused by the war. The post war surveys fall into two groups—one is the group of surveys on national scale and the other is the group of surveys for the limited areas. The former group was made at the time of a population census and covers the whole area of the country. The latter was carried out in limited areas for detailed data on additional aspects of the housing situation.

The 1950 survey was on a sample of 10,000 houses selected in 36 major cities. The 1953 survey covered all the 286 cities of the country with a sample fraction of 1/6. The 1955 survey covered 310 divisions selected out of the whole country and the rate of sampling was 1/30 for some and 1/80 for others.

4. UNITED KINGDOM : Census of population and housing (1951)

While the enumeration was complete a preliminary report of 1% sample was published well ahead of the publication of the main results.

5. U.S.A. : Census of population and housing

The census of houses is carried out alongwith the census of population. While a number of housing characteristics, such as occupancy, structural data, condition and plumbing facilities, financial characteristics of non-farm dwellings were collected on complete enumeration basis. A few items like 'year-built' and equipment and fuels used were surveyed in a sample of 20% of the dwelling units.

Sample surveys are also organised in USA for obtaining inter-census data.

APPENDIX V

Tabulation to be obtained in the Housing Census

Tabulation No. 1 : Housing units, private households and occupants by class of housing unit and geographic division.

Tabulation No. 2 : Occupied housing units and occupants by demographic and economic characteristics of occupants, class of housing unit and geographic division.

Tabulation No. 3 : Housing units and occupants by class of housing unit, water supply and geographic division.

Tabulation No. 4 : Dwellings and rustic housing units by number of occupants and number of rooms and geographic division.

Tabulation No. 5 : Occupied private housing units and occupants by type of toilet installation, class of housing unit and geographic division.

Tabulation No. 6 : Vacant dwellings and rustic housing units by reason for vacancy, and geographic division.

Tabulation No. 7 : Occupied private housing units by tenure, class of housing unit and geographic division.

APPENDIX VI

Housing Tables, Census of India, 1961

- E-I : Census Houses and the uses to which they are put, viz., dwellings, shop-cum-dwellings, work-shop-cum-dwellings, etc.
- E-II : Census Households classified (i) by Tenure Status, such as owned and rented and (ii) type of use of Census Houses, such as dwellings, shop-cum-dwellings, workshop-cum-dwellings, etc.
- E-III : Census Houses used as workshops and factories classified by Industry, Power used (Electricity, kind of fuel such as liquid fuel, coal, wood, etc.) and size of employment.
- E-IV : Distribution of Census Houses used wholly or partly as dwellings by wall and roof material, such as grass leaves, bamboo, timber, mud, stone, metal sheets, etc.
- E-V : Households classified by number of members (Males/Females) and by number of rooms occupied.

Collection of Housing Data during Houselisting Operations in India in 1960 and Proposals for Next Census***

by

A. Chandra Sekhar †

1. HOUSING DATA IN 1901-1951 CENSUS

1.1 Recognising the importance of Housing in national development planning, the United Nations have emphasized the need for collecting baseline data on housing from time to time. They have recommended that Housing Censuses are best carried out alongwith the Population Censuses which are generally taken by countries decennially. The objectives of a Housing Census as laid down by them were as follows : firstly, to make an inventory of all the various kinds of premises in which people live and which together constitute the stock of housing accommodations at a given time and to identify these places according to their geographic location, structural characteristics, available facilities, installations and services; secondly, to obtain indicators of housing conditions in which the population lives—living space per inhabitant and per household, the equipment provided and the services laid on, *i.e.*, the kind of lighting, supply of gas, water cooking equipment, etc.

1.2 With this background we may examine to what extent we have been able to carry out a Census of Housing in India. Right from the earliest Population Census in India, *i.e.*, from 1872, preliminary to the canvassing of the Population Census schedule, all houses were numbered and listed. This operation of Housenumbering and Houselisting was carried out essentially to ensure that the Population Census enumerator visited every household in the area allotted to him and did cover the entire population. Till the last decennial census of 1961, there was no uniform or standardised schedule for the listing of the houses throughout the country. The purpose of the Houselist being essentially to assist the Population Census enumerator to cover his jurisdiction without omission or overlapping, hardly any other use was made of the Houselist except that a few enterprising Census Superintendents of individual States did make a special analysis of the data, such as for example, as early as in 1871 in Madras, the houses in that Province were categorised by the Census Superintendent as (1) terraced or flat roofed, (2) tiled and (3) thatched. He found that 5/6ths of all dwelling places were thatched houses and also gave an interesting finding that terraced and tiled houses considered superior, were found in larger numbers in Government villages than in Zamindari or Proprietary villages. In 1891, Mysore State Census Superintendent published much interesting housing statistics and in 1931 a few Housing Tables were published for Bombay and other cities of that Province.

1.3 One of the main drawbacks of the earlier houselists was a lack of uniform schedule and also the lack of a uniform concept of the 'Census House' that was listed. The following gives an idea of the variations in the definition of a House as adopted from census to census in India :

Census Year	House
1881	The dwelling place of one or more families with their servants, having a separate principal entrance from the public way.
1891	The dwelling place of one or more families with their resident servants, having a separate principal entrance from the common way.
	OR
	'House' consists of the buildings, one or many, inhabited by one family.
1901	The dwelling place of one or more families having a separate principal entrance from the common way.
	OR
	'House' consists of the buildings, one of many, inhabited by one family.
1911	The residence of one or more families having a separate independent entrance from the common way.
	OR
	'House' is defined as consisting of the buildings, one or many, inhabited by one family.

† Additional Registrar General of India.

(Contd.)

Census Year	House
1921	The residence of one or more families having a separate entrance from the common way.
	OR
	'House' is the building or part of a building, occupied by one family.
1931	'House' is defined as consisting of the buildings, one or many, inhabited by one family.
	OR
	Every dwelling with a separate main entrance.
	every dwelling with a separate main entrance.
	OR
	'Census House' means the dwelling place of a single commensal family.
1951	'Census House' is dwelling with a separate main entrance.
	<i>Explanation:</i> A 'house' is a structure while a 'household' is a human group.
1961	'Census House' is a structure or part of a structure inhabited or vacant, or a dwelling, a shop, a shop-cum-dwelling or a place of business, workshop, school etc., with a separate entrance.
	If a building has a number of flats or blocks which have separate entrances of their own and are independent of each other giving on the road or a common staircase or a common courtyard leading to a main gate, they will be considered as separate census houses. If within an enclosed or open compound there are separate buildings then each such building will also be a separate census house. If all the structures within an enclosed compound are together treated as one building then each structure with a separate entrance should be treated as a separate census house.

2. HOUSING DATA IN 1961 CENSUS

2.1 1961 Census marks a decisive landmark in the history of Housing Census in India. The participants at the pre-census preparatory conference of the 1961 Census recommended collection of some basic data on housing and industrial establishments. Taking note of the fact that the absence of a uniform concept of a Census House and of a uniform Houselist schedule had apparently prevented the fuller use of the data collected at the Houselisting stage at the earlier censuses, for the first time in 1961 a standardised Houselist form was prescribed and a uniformity of definitions was also sought to be applied throughout the country. Despite all the care taken in evolving an acceptable definition of a Census House, in a country as India with its great variety of structures and the multifarious uses they are put to, it was indeed difficult to have a foolproof concept of a Census House. The definition of a Census House as adopted at the 1961 Census has already been quoted above.

2.2 The information collected on the uniform Houselist that was canvassed throughout the country at the 1961 Census pertain mainly to the following :

- (i) The purpose for which Census House is used, e.g., dwelling shop, shop-cum-dwelling, business, factory workshop, school or other institution, jail, hostel, hotel, etc.
- (ii) If the Census House is used as an establishment, workshop or factory, particulars of (a) products, repair or service undertaken, (b) average number of persons employed daily last week, (c) kind of fuel or power, if machinery is used.
- (iii) Material of wall and the material of roof of the house.
- (iv) Number of rooms occupied by household.
- (v) If the household lives in own or rented house.
- (vi) Number of persons residing in the census household.

2.3 The houselist was canvassed a few months in advance of the Population Census. The Population Census was conducted in February-March 1961. The housenumbering and houselisting was done at varying periods between about March and November 1960. While the basic purpose of the housenumbering and listing was the location of every house and household for the purpose of complete coverage at the Population Census, yet the house list attempted the collection of some simple basic particulars of houses and households and workshops and factories. This simple houselist yielded much useful data on housing which was not hitherto available.

2.4 The following five Tables were built up from the data furnished in the houselists :

- (i) Census houses and the uses to which they are put (Table E-I),
- (ii) Tenure status of sample census households living in census houses used wholly or partly as dwellings (Table E-II),
- (iii) Census houses used as factories and workshops classified by industry, power and no power and size of employment (Table E-III),

- (iv) Distribution of sample census households living in census houses used wholly or partly as dwellings by predominant material of wall and predominant material of roof (Table E-IV).
- (v) Sample census households classified by number of members and by number of rooms occupied (Table E-V).

(while Tables E-I and E-III were prepared on the basis of full count and Tables E-II, E-IV and E-V were based on 20% sample).

The Tables and analytical reports on Housing and Industrial Establishments have been published as Part IV of the 1961 Census of India publications for all India as well as individual States.

3. RESULTS OF 1961 CENSUS HOUSING DATA

3.1 From Housing Table I it was possible to see to what extent there were vacant houses in local areas; but unfortunately it was not possible to discern the type of houses that were vacant and why they were vacant. For India as a whole as many as over 6 million census houses (about 6%) were shown as vacant. These were obviously not all suitable for occupation. Some were dilapidated buildings others were more compounds with an empty cattle shed and so on, but no information was recorded on the schedule in this regard. It was also possible to correlate the number of buildings used as workshops or factories with the proportion of industrial workers and the number of houses used as shops and business houses with the proportion of workers in Trade and Commerce. From the number of buildings used as educational institutions and hospitals it was possible to throw some light on the adequacy or otherwise of the educational and medical services in local areas. From Table E-II it was possible to see to what extent the ownership or otherwise of dwelling reflected the economy of the people and how migration had an effect on the proportion of rented houses and so on. Table E-III yielded much useful data particularly in regard to unorganised sector on the number of units engaged in different types of production, processing and servicing classified according to the Standard Industrial Classification, the employment provided by them and the type of power or fuel used. Table E-IV showing the predominant material of wall and roof of dwellings provided much interesting information and it was possible to draw some conclusions on how far the climatic conditions governed the type of constructions and to what extent, particularly in rural areas, the material of wall and roof was determined by the availability of local natural products which are used with as little processing as possible and how little the fabricated material is utilised. This may also provide the housing planners with some clue of the cost of housing and the availability and utilisation of local material. Even in several urban areas the houses with grass, leaves or timber, mud or unburnt bricks as wall material, and thatch or slate or shingle as roof material predominate. To quote from the 1961 Census of India Housing Report :

"The series will bring home to the reader the considerable proportion of towns and cities in which more than 50 per cent of

census houses have walls of either (a) grass, leaves, reeds, etc. or timber or (b) mud and unburnt bricks and roofs of either (i) grass, leaves, thatch, etc. or (ii) of tiles, slate, shingle or metal sheets. It is obvious that houses made of these materials not only offend against popular notions of what houses should be in large towns and cities but must be in more than one way unable to take full advantage of the amenities that should be offered by big civic corporations; like water, underground sewerage, electricity, ventilation and protection against fire and the forces of nature. They also make for a great deal of substandard construction which has the effect of bringing building and sanitation laws to contempt and of releasing the forces of jerry building, rack renting and associated evils. Their most important single effect is the perpetuation and expansion of urban and suburban slums, where lack of sanitation, decency and over-crowding is now invading even the woefully inadequate rural building standards. The statements also underline one of the major reasons why the increase in urban population between 1951 and 1961 shows signs of slowing down, which is this distressing lack of housing to the point where even the city lights fail to lure a villager into living in the slums if he can help it."

Lastly, Table E-V provided an indication of housing congestion.

A summary of the picture of housing congestion as indicated in the Housing Report may be reproduced below :

- (i) 41.33 per cent of India's total population live in 1 roomed census houses, the average number of persons per room being 4.35.
- (ii) 26.98 per cent of India's total population live in 2 roomed census houses, the average number of persons per room being 2.63.
- (iii) 13.25 per cent of India's total population live in 3 roomed census houses, the average number of persons per room being 2.01.
- (iv) 7.64 per cent of India's total population live in 4 roomed census houses; the average number of persons per room being 1.69.
- (v) 9.50 per cent of India's total population live in 5 or more roomed census houses, the average number of persons per room being 1.30.
- (vi) 46.81 per cent of India's population living in towns and cities of over 50,000 live in 1 roomed census houses, the average number of persons per room being 4.19.
- (vii) 24.93 per cent of India's population living in towns and cities of over 50,000 live in 2 roomed census houses, the average number of persons per room being 2.76.
- (viii) 11.69 per cent of India's population living in towns and cities of over 50,000 live in 3 roomed census houses, the average number of persons per room being 2.12.

- (ix) 6.75 per cent of India's population living in towns and cities of over 50,000 live in 4 roomed census houses, the average number of persons per room being 1.78.
- (x) 9.16 per cent of India's population living in towns and cities of over 50,000 live in 5 or more roomed census houses, the average number of persons per room being 1.33.
- (xi) 40.86 per cent of India's rural population live in 1 roomed census houses, the average number of persons per room being 4.40.
- (xii) 27.16 per cent of India's rural population live in 2 roomed census houses, the average number of persons per room being 2.62.
- (xiii) 13.40 per cent of India's rural population live in 3 roomed census houses, the average number of persons per room being 2.01.
- (xiv) 7.72 per cent of India's rural population live in 4 roomed census houses, the average number of persons per room being 1.68.
- (xv) 9.45 per cent of India's rural population live in 5 or more roomed census houses, the average number of persons per room being 1.30."

To quote from the Housing Report again :

"The statistics, based on however defective a definition of the room, leave one in no doubt about the extreme state of congestion in the urban areas and the poor level of investment so far made in urban housing. For the country as a whole the rural and urban together—the picture is one of poverty which renders investment on housing difficult. The statistics confirm the vague impressions of congestion that one might have had so far in one's tours but exactly what the levels were like was not quite clear until the 1961 tables were compiled. The journey from these levels to decency and comfort will be long, strenuous and often frustrating. Conditions, even at their best, border on the sub-human, but it will hardly do to forget that shelter comes third in order of priority after food and clothing."

Thus from a fairly simple houselist canvassed at the 1961 Census of India much valuable data on housing was brought out.

4. FUTURE PROGRAMME

4.1 Encouraged by the success of the Housing Census attempted through the Census Houselist at the 1961 Census plans are afoot to repeat it at the next decennial census and to try to enlarge the scope slightly. However, the limitations in attempting any sophisticated or complicated questionnaire in a mass operation as the census of a large and heavily populated country like India will have to be borne in mind. A few months ago a seminar of experts was convened at New Delhi to consider the questionnaires to be adopted at the 1971 Census

of India. In so far as Housing Census was concerned it was decided that a simple houselist largely following the pattern of the 1961 Census should be prepared but in 10% of sample areas a few additional items of information, such as the age of the house, the amenities available in regard to drinking water supply, electricity supply, facilities of privy, the total living area and the rent paid in respect of rented dwellings are proposed to be collected. In respect of all houses recorded as vacant the reasons are also proposed to be ascertained. Manufacturing establishments will be enumerated on a separate schedule. The first drafts of the schedules relating to housing and manufacturing establishments proposed to be canvassed at the 1971 Census are attached to this note.

4.2 Thus the 1971 draft schedules bring us slightly nearer to the U.N. recommendations of the topics suggested for coverage at a Housing Census. The Tabulation Plan for the 1971 Census has not yet been formulated. The 1971 draft schedules are being presently pretested in the field. The experience is encouraging though difficulties are faced in determining the age of the building or even the total living area in sq. metres and so on. In some areas it is represented that information on rent was not very reliable. The results of different areas are yet to be received. The experiences of this pretest are proposed to be discussed at a further seminar some time early next year and a second draft of the schedules will be drawn up for further pretesting before they are finally adopted.

4.3 While planning the Housing Censuses, as indeed even the Population Censuses, several demands are made by persons and institutions of different interests for a variety of sophisticated information. For example, one may wish to canvass a question on the cost of the House. However desirable such information may be, it is well nigh impossible for the census enumerator to ascertain this with any degree of accuracy in most cases. One may like to know about the condition of housing. This again is liable to so much of subjective judgment on the part of the enumerator that it is not desirable to include such an inquiry in a census. This was the experience in U.S.A. as well. One has to bear in mind that a census is different from a specialised survey. Census is a mass operation in which a large army of enumerators is employed part-time and the enumerators are given a very short training to canvass the census schedules over large areas. Such an operation will succeed only if it involves the canvassing of a simple and direct questionnaire so that large cumulative errors are eliminated. The questions should be capable of evoking proper response and the scope for subjectiveness on the part of the enumerators in recording answers would require to be eliminated. On the other hand, in a specialised survey, it is possible to engage specially trained enumerators to conduct detailed probes and record detailed answers in limited areas. An important factor to be borne in mind in planning to collect data through the census is to make it comparable with that obtained at the earlier censuses so that a time series is built up reflecting the trends over time. In India our resources may not permit the taking of a separate one point Housing Census by itself. Therefore, the opportunity of Houselisting on the eve of Population Censuses will necessarily have to be taken advantage of to collect simple but meaningful data that might serve the needs of the nation adequately.

Role of the National Sample Survey in Collecting Data on Housing Conditions and Building Materials Production—A Historical Survey**

by

Rajeshwari Prasad †

1. FUNCTIONS OF NSS

1.1 The National Sample Survey Organisation was established in 1950 for the purpose of collecting data, required for national planning and national income estimation as also for policy and administrative decisions by the different Ministries of the Government of India. The designing of the surveys and the tabulation of the data is done by the Indian Statistical Institute under the guidance of the Central Statistical Organisation, while the field work is carried out by the Directorate of NSS. The surveys may be broadly classified into (i) Socio-economic Statistics and (ii) Industrial Statistics. The surveys relating to socio-economic statistics are of the multi-purpose type where one investigator canvasses a number of schedules and are organised by rounds. The period of round has differed in the earlier years, but lately efforts are being made to keep the round confined to one agricultural year (July-June). The Industrial Statistics survey is limited to registered factories. The present design of the survey is that a detailed schedule is canvassed on a census basis from the larger factories employing 50 workers or more with power, and 100 or more without power, while approximately a 20 per cent sample is taken from the remaining factories.

1.2 In addition to the above surveys, the NSS Directorate has also the responsibility for technical co-ordination in the conduct of crop estimation surveys organised by the State Governments through their staff.

1.3 The NSS originally started as a purely Central venture but from 1954-55 the States began joining the NSS programme on a matching basis. Since then all the States except West Bengal have joined the programme. The data collected by the State can be added to that collected by the Centre and the total would provide estimates with higher degree of precision.

1.4 **Housing Data**—The NSS have collected data on housing conditions through the Socio-economic surveys and on housing materials through the Industrial Statistics Surveys. The socio-economic surveys cover a large number of items some of which are repeated from round to round while emphasis is laid on others only in certain rounds. Thus data on consumer expenditure, employment and un-employment, land utilisation, crop cutting experiments and population are being collected in consecutive rounds. In the 8th round, emphasis was laid on the study of

distribution of land holdings; the agricultural labour enquiry was conducted in the 11th and 12th rounds and data on births, deaths and growth rates collected on a large scale in the 14th round. As appendix I will show, data on housing conditions have been collected in schedule 1.0 (consumer expenditure) and schedule 1.1 (income and expenditure). In the 12th round, the data were collected in schedule 1.2 (housing and vital statistics) while in the Middle Class and Working Class Family Living Surveys the relevant schedule was Schedule 'B' (condition and level of living). It will also be seen that data are being collected almost continuously since 1953-54 and the size of the sample in the rural sector has been gradually increasing from the very start while in the urban sector it had been almost stationary during 1959-62 but has been doubled in 1963-64. With the increase in the number of villages and blocks covered as also the households, the precision of the data collected has been improved.

2. ITEM COVERAGE ON DATA ON HOUSING CONDITIONS

2.1 The United Nations have in their Paper No. M 28 entitled "General Principles for a Housing Census", divided the items of information regarding housing conditions into (i) Basic Items and (ii) Additional Items. Let us examine the item coverage of the NSS from this standard.

2.1.1 *Basic Items: Part A*—Information about location, number of occupants, selected demographic and economic characteristics of occupants and household and family relationship and water supply system has been collected in all the rounds in one form or the other. Data on water supply duration, number of taps in the dwelling, number of persons using, waiting time for use, etc. were collected in Family Living Survey (1958-59). Class or Type of housing unit was not canvassed in any round.

Part B—Data on type of dwelling were collected in the Family Living Surveys and in the 15th round. Information about number of rooms and toilet installations has been collected up to the 15th round.

2.1.2 *Additional Items*

- (i) *Installations*—Data on cooking facilities and bathing facilities were collected in the 12th and 15th rounds and in the Family Living Survey. Information about electricity was collected in the 15th round and Family Living Survey. Items

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relating to heating and installations for cottage industries have not been collected.

- (ii) *Household conveniences*—No such data were collected.
- (iii) *Characteristics of building*—Data on type of building (number of floors, etc.), floor space of the dwelling, year of construction and outdoor spaces have been collected in a few rounds while information about the material of wall, roof, floor and state of repairs or dilapidation has been collected in most of the rounds.
- (iv) *Occupancy*—Information about ownership was collected in the 12th and 15th rounds and Family Living Survey. Information regarding rent paid has been collected in most of the rounds including the 18th round. Data about the economic activity of the owner were not collected.

In addition to the above items, the cost of construction, repair and improvement was collected in most of the rounds.

2.2 The following items also were covered in one or two rounds :—

- (i) Provision of electric ceiling fans.
- (ii) Drainage facilities.
- (iii) Ventilation.
- (iv) Passage to dwelling.
- (v) Surroundings.
- (vi) Best portion of the house (description).
- (vii) Value, if owned.
- (viii) Possession.
- (ix) Reasons for dissatisfaction.
- (x) Building and repair works.
- (xi) Direct access to sky or land-scape.

3. NSS DEFINITION OF "HOUSE"

It may be explained here that in all the NSS surveys the data collected relate to the sample household and housing conditions and facilities relate to the precincts occupied by the household. The term "house" was, therefore, used in the sense of a dwelling occupied by a household and not the census house in which more than one household can live.

4. DATA ON PRODUCTION OF BUILDING MATERIALS

As has been mentioned earlier, the Directorate of NSS has a separate Division for carrying out a survey of the manufacturing industries. From 1951 to 1958 the survey was known as 'Sample Survey of Manufacturing Industries'. From 1959 the work has been reorganised and is now known as Annual Survey of Industries. It covers all registered factories. The larger factories employing 50 or more workers with power and 100 or more without power are surveyed on a census basis while an approximately 20 per cent sample is taken of the remaining factories. The

census and sample factories together cover about 85 per cent of the total employment. This survey, therefore, covers all building materials which are manufactured in factories. The data relating to the following items can be had from this source :—

- (i) Brick and tiles.
- (ii) Iron and steel.
- (iii) Hume pipes.
- (iv) Asbestos sheets.
- (v) Paints and varnishes.
- (vi) Sheet glass.
- (vii) Cement.

It will be seen that for an item like brick and tiles, the data produced by the ISI will show only part of the picture as considerable manufacturing goes on in the un-registered sector. The data relating to crude coal tar also is not available from this report and has to be obtained through the Annual Report of the Directorate General of Technical Development. Likewise, data relating to lime stone will be found in the Indian Bureau of Mines statistics.

5. DATA ON CONSTRUCTION ACTIVITIES

The NSS has also recently interested itself in the collection of data on construction activity throughout the country. An exploratory survey was carried out in the 18th round (Feb. 1963 to Jan. 1964) in the urban sector. The survey consisted of 4 schedules. The first related to the list of permits from the municipal records and was intended to assess the suitability of municipal records of building sanctions for furnishing a frame for a survey of building construction within municipal premises and included both household and non-household sectors. The second schedule related to listing of sites, buildings, occupants and constructions. The third schedule related to a list of constructions through Architects, Contractors and Mistries. The fourth schedule related to details of the constructions including source of finance and the expenditure incurred. The ISI are examining the filled-in schedules and on the basis of this experience the question of organising a larger sample survey of construction will be decided.

6. REPORTS ON DATA ON HOUSING CONDITIONS

So far reports on the housing data have been published for the 7th, 10th, 11th and 12th rounds only, besides the report on the ad hoc survey conducted in 1960 at the instance of the National Buildings Organisation about the dwelling habits of occupants in two-room residences in the Government sector in New Delhi. It is obvious that housing data have not been given a high priority. If the National Buildings Organisation considers the data already published by the NSS as useful, it will be for them to press the CSO to accord a higher priority to the tabulation of the data collected from the 15th to 18th rounds of the NSS.

It may be useful to briefly examine here the data already published. The NSS reports give the results of the surveys for rural and urban areas separately. For rural areas the estimates of certain characteristics like (i) percentage distribution

of households by number of rooms; (ii) percentage distribution of households by average number of persons per room; (iii) percentage distribution of households by total floor space; (iv) percentage distribution of households by source of drinking water, latrine type, bath room type, kitchen type, structure type, etc., have been given by the census population zones. For urban areas, the data have been given by population size-group of towns, namely, (i) cities of Calcutta, Bombay, Delhi and Madras; (ii) cities with a population of over 3 lakhs; and (iii) towns with a population of less than 3 lakhs.

For both rural and urban areas, the data have also been cross-classified by monthly household expenditure level and by occupational groups.

7. APPRAISAL OF THE DATA ON HOUSING CONDITIONS

Appendix II gives the data on some of the important characteristics as collected from round to round together with comparable data from 1961 census and also the data relating to a few other countries. Some of the conclusions which can be drawn from this Table are as follows:—

- (i) The percentage of households living in one room accommodation appears to be increasing in both the rural and the urban areas. Almost half the households in the rural areas and a little over half in the urban areas are living in one room only.
- (ii) The percentage of households living in 1-2 rooms is also increasing both for rural and urban areas. About 4ths of the households in India live in 1-2 rooms only. In advanced countries like United Kingdom and United States this percentage is only about 7. In Japan this percentage is about 24 for rural areas and 35 for urban areas.
- (iii) The percentage of households living in 7 rooms and above is very small in India while the comparative figures for the developed countries are very high.
- (iv) The average number of persons per room is gradually increasing in India and now stands at about 2.5 for rural areas and a little more for the urban areas. The comparable figures in developed countries are about 1/3 of this figure.
- (v) The percentage of households having piped water supply continues to be very small in the rural areas (about 1 per cent only)

while it appears to be increasing on a fairly high speed in the urban areas where it is now over 53 per cent. In advanced countries, about 80 per cent of the houses in the rural areas and nearly cent per cent in the urban areas have piped water supply.

- (vi) It is interesting to note that in India the percentage of households with piped supply is about 92 per cent in the four metropolitan cities, 86 per cent in the big cities with over 3 lakh population and only 39 per cent in the remaining towns.
- (vii) Less than 5 per cent of the households in rural areas in India have built-up latrines and even in urban areas the percentage is only about 56.
- (viii) The percentage of purely kutcha houses in the rural areas stands at about 67 and of pucca houses only about 2. Even in the urban areas about 25 per cent of the houses are purely kutcha. The figures for pucca houses in urban areas as given in the NSS surveys do not appear to be reliable. Apparently large variations in the figures of the various rounds has been occasioned by some confusion of concepts.

8. POPULATION CENSUS, 1961

For the first time, the Indian population census has carried out a fairly comprehensive housing census also in 1960. In Appendix III will be found an extract from the latest volume of the Census of India on this subject. It will be seen that the census have collected information on all the basic items recommended by the UNO with the exception of data on drinking water and toilet facilities. Let us hope that in future the population census will further expand its coverage so as to combine a full-fledged housing survey with the population census. The housing census should in fact precede the population census. During the inter-censal years the NSS should collect data on certain important items but with a sample large enough to give Statewise indicators of variations. It would be desirable to have a clear cut policy and to lay it down definitely for the next two Five Year Plans. The report of the Planning Commission's Working Group on housing recently published has highlighted a very large gap in the housing requirements of the country, particularly in the urban areas, and for a proper handling of this problem it is necessary that adequate statistics are collected in a systematic manner.

APPENDIX

Statement Showing the Details of Rounds, Sample Size and Schedules through which

Sl. No.	Round	Period	Number of samples allotted	
			Villages	Blocks (Urban)
(1)	(2)	(3)	(4)	(5)
1	First	October 1950—March 1951	1189	..
2	Seventh	October 1953—March 1954	943	441
3	Eighth	July 1954—March 1955	1424	468
4	Ninth	May 1955—November 1955	1624	2108
5	Tenth	December 1955—May 1956	1624	1328
6	Eleventh	August 1956—February 1957	1840	582
7	Twelfth	March 1957—August 1957	1768	575
8	Middle Class Family Living Survey (Sponsored by C.S.O.)	July 1958—June 1959	..	45 centres
9	Working Class Family Living Survey (Sponsored by Labour Bureau)	July 1958—June 1959	..	{ 32 Factory centres 10 Plantation centres 8 Mining centres
10	Fifteenth	July 1959—June 1960	2616	2228
11	Ad hoc Survey (Sponsored by N.B.O)	June 1960—July 1960	..	6 Special areas†
12	Sixteenth	July 1960—June 1961	3798	2272
13	Seventeenth	September 1961—July 1962	4310	2237
14	Eighteenth	February 1963—January 1964	8472	4572

I

Data on 'Housing Condition' were Collected by National Sample Survey

Number of households allotted/ surveyed			Schedules through which data collected		NSS reports published relating to the data (NUMBER)
Rural	Urban	Total			
(6)	(7)	(8)	(9)		(10)
16 households per village			Household Schedule I		
4181	1713	5894	1·0	(Consumer Expenditure)	Report No. 26
On an average 3 h. hs. per village			1·0 (Consumer Expenditure)		
On an average 3 h. hs. per block					
On an average 1 h.h. per village			1·0 (Consumer Expenditure)		
On an average 1 h.h. per block			1·1 (Income & Expenditure)		
1616	1326	2942	1·1	(Income & Expenditure)	Report No. 50
7255	2840	10095	1·1	(Income & Expenditure)	Report No. 51
5292	1723	7015	1·2	(Housing & Vital Statistics)	
..	8940*	8940*	Schedule B (condition of work and living)		
..	6600*	6600*	Schedule B (condition of work and living)		
{ On an average 3 h. hs. per village			1·0 (Consumer Expenditure)		
{ One household per block					
..	593	593	Survey of dwelling habits of occupants in two-room residences in the Govt. Sector in New Delhi.		Draft Report No. 96.
{ On an average 1 h. h. per village			1·0 (Consumer Expenditure)		
{ On an average 1 h. h. per block					
{ On an average 2 h. hs. per village			1·0 (Consumer Expenditure)		
{ On an average 2 h. hs. per block					
{ On an average 3 h. hs. per village			1·0 (Consumer Expenditure)		
{ On an average 1 h. h. per block					

NOTE—*Refers to Families.

†The coverage of the survey was limited to certain specified areas of New Delhi, having two-room Govt. quarters (i) Vinay Nagar Main (ii) Vinay Nagar South (iii) Vinay Nagar East (iv) Vinay Nagar West (v) Moti Bagh I and (vi) North of Medical Enclave.

Statement Showing Some Selected Results on 'Housing Conditions' as Obtained in NSS

Particulars	7th (October '53— March '54)		10th (December '55 —May '56)	
	(1)	(2)	(2)	(3)
I. Housing Accommodation :				
Percentage of households living in				
(i) 1 room	Rural	33.99	Urban	32.27
	Urban	43.64		36.62
(ii) 1—2 rooms	Rural	66.29	Urban	64.64
	Urban	71.80		70.71
(iii) 7 and above	Rural	3.79	Urban	3.46
	Urban	5.55		3.07
II. Average No. of Persons per Room :				
	Rural	2.1	Urban	2.0
	Urban	..		2.0
III. Drinking Water Supply :				
Percentage of households having source of drinking water (tap)				
	Rural	0.39	Urban	1.24
	Urban	45.42		49.03
IV. Sanitary Facilities :				
Percentage of households having built-up latrines				
	Rural	4.88	Urban	5.45
	Urban	56.37		56.98
V. Bath Facilities :				
Percentage of households having bath rooms				
	Rural	..	Urban	..
	Urban	..		..
VI. Material Type of Houses :				
Percentage of households living in				
All kutcha Structure(G)	Rural	63.35	Urban	62.89
	Urban	24.49		27.08
All Pucca Structure(G)	Rural	2.66	Urban	1.89
	Urban	27.64		8.74

(A) Data based on results of sample survey of housing.

(B) Data for England, Scotland and Wales.

(C) Data based on results of sample survey of housing and dwelling include mobile trailers.

(D) Data refers to dwellings rather than households.

(E) ALE (1950-51), Government of India, Ministry of Labour, Agricultural Labour Enquiry, Rural Manpower and Occupational Structure.

II

Rounds, Census 1961 and ALE-vis-a-vis as Available for Five Other Countries

INDIA								
NSS Rounds		ALE(E)	Census 1961 (H)	U.K. 1951	U.S. 1960 (C)	USSR 1956	Japan 1958 (A)	Ceylon 1963
11th (August '56— February '57)	12th (March '57— August '57)							
(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
35.65	44.00	..	48.12	..	..	..	..	..
39.48	52.01	..	53.05	..	..	..	..	..
68.33	72.99	..	74.93	7.2	4.1 (D)	..	23.8 (D)	69.5
69.35	76.47	..	77.71	7.4	7.2 (D)	..	34.8 (D)	62.7
2.56	3.41	..	6.01 (I)	9.8	21.0 (D)	..	8.7 (D)	1.4
4.08	1.83	..	5.76 (I)	7.2	14.2 (D)	..	6.2 (D)	3.7
2.0	2.4	2.3	2.58	0.8	0.7	..	1.3	2.2
2.1	2.2	..	2.61	0.8	0.7	1.5	1.4	2.4
1.06	0.35	..	..	79.9 (B)	79.0	..	..	..
51.15	53.28	..	..	97.9 (B)	98.9	..	..	..
4.91	3.29	..	..	..	..	..	..	..
57.90	55.92	..	..	..	..	..	..	..
..	7.07	..	..	53.6 (B)	69.1	..	..	..
..	28.26	..	..	64.5 (B)	96.3	..	..	..
60.33	67.32	..	..	..	..	..	..	..
20.08	24.61	..	..	..	..	..	..	..
2.73	1.40	15.9 (F)	..	..	..	..	..	..
13.09	7.76	..	..	..	..	..	..	..

(F) Refers to pucca or partly pucca houses. The corresponding figure for NSS seventh round is 15.5 per cent. In ALE a house was classified as pucca if the walls and roof were made of brick, stone, lime or mortar and as partly pucca if the walls were so, but not the roof.

(G) A kutcha or a pucca structure is determined by the type of materials used for its construction. A kutcha house designed as, or intended for, living quarters, is one where plinth was made of mud or bricks without any cement plaster and whose walls and roof have been built of grass, leaves, reeds or thatch with or without any plaster. A pucca house, designed as, or intended for, living quarters, is one whose plinth (and floor), walls and roof were built of burnt bricks and tiles, stone, cement, concrete and/or timber.

(H) Based on 20% sample.

(I) Refers to 5 rooms and above.

APPENDIX III

Extract from "Census of India 1961, Volume I, India Part IV(B), Housing and Establishment Tables" March, 1964

The following five housing tables are presented in this book :—

E-I : Census houses and the uses to which they are put;

E-II : Tenure status of sample census households living in census houses used wholly or partly as dwellings;

E-III : Census houses used as factories and workshops classified by industry, power and no power used and size of employment;

E-IV : Distribution of sample households living in census houses used wholly or partly as dwellings by predominant material of wall and predominant material of roof; and

E-V : Sample households classified by number of members and by number of rooms occupied.

Of these, Tables E-I and E-III were prepared on full count and the other three on the basis of a 20% sample.

Up to 1951 each state was at liberty to design its own house list form, because of the difficulty of adopting a set of uniform definitions which would apply to the whole of India. Differences in definitions and consequently methods led to non-comparability, so that although some information was always collected on the eve of each population census it was not considered worth-while to analyse and print it. This left a void in our knowledge of housing. Even cursory information was un-available.

Total No. of census houses, India

Total	107,857,037
Rural	89,019,325
Urban	18,837,712

Tenure status of sample census households living in census houses used wholly or partly as dwellings (Based on 20% sample), India

Tenure status		Total no. of households
Total	Total	16,710,667
	Owned	14,231,199
	Rented	2,473,241
	Not stated	6,227
Rural	Total	13,742,241
	Owned	12,859,306
	Rented	878,210
	Not stated	4,725
Urban	Total	2,968,426
	Owned	1,371,893
	Rented	1,595,031
	Not stated	1,502

Distribution of 1,000 census households living in census houses used wholly or partly as dwellings by predominant materials of wall (based on 20% sample)

All India	Grass, leaves, reeds, or bamboo	Timber	Mud	Unburnt bricks	Burnt bricks	C.I. sheets or other metal sheets	Stone	Cement concrete	All other material
R	125	13	569	75	92	1	120	1	4
U	60	11	215	46	515	15	116	17	5

Distribution of 1,000 census households living in census houses used wholly or partly as dwellings by predominant material of roof (based on 20% sample)

All India	Grass, leaves, reeds, thatch, wood or bamboo	Tiles, slates, shingle	Corrugated iron, zinc, or other metal sheets	Asbestos cement sheets	Brick & lime	Concrete and stone slab	All other material
R	460	354	41	2	15	20	108
U	200	349	121	15	106	154	55

Distribution of 1,000 census households according to number of rooms occupied (based on 20% sample)

	No regular room	One room	Two rooms	Three rooms	Four rooms	Five rooms and more
All India	13	490	264	113	59	60

No. of rooms not stated—1.

No. of persons per room (based on 20% sample)

India		No. of persons per room
	Total	2.58
	Rural	2.58
	Urban	2.61

Estimating Housing Needs in Qualitative and Quantitative Terms at Local, State and National Levels*†

by

Prof. L. R. Vagale ‡

1. INTRODUCTION

1.1 One of the urgent problems that should engage the serious attention of planners, social scientists and administrators at present is provision of sufficient dwellings to relieve the acute shortage of housing and ultimately to enable each household to have its own house. In planning for self-sufficiency a correct estimation of the housing requirements should form the very first step. The next step is to formulate a sound national housing policy and a bold house building programme, consistent with our population policies and socio-economic objectives of housing and planning. In order to do this we have to determine the quantity and characteristics of the existing residential accommodation and then estimate the future needs and demands.

1.2 The demand for residential accommodation may not necessarily be equal to its need. Every family needs a dwelling even if it cannot afford one. The effective demand depends upon the ability to pay economic price or rent, general prosperity of the country, availability of suitable dwellings and many other factors. It is, therefore, necessary to assess not only the housing need but also the housing demand.

1.3 Several attempts have been made in India by various official organisations and individuals to estimate our housing needs. However, most of them seem to consider only quantitative needs of housing and hardly pay any heed to the qualitative and social aspects. Further, they are often based on assumptions, whose validity has not been tested. For instance most of the estimates assume a mechanical relationship between total population trends and housing needs or they postulate certain relationship between the age-structure and marital status of the population. In this connection it is interesting to note that the Registrar General of U.K., in the Housing Volume of the 1931 Census, considers each of the following figures as being possible functions of population structure, which may be taken as proportional to the number of families requiring houses: (a) total number of married women of all ages, or (b) total number of married women of all ages plus the widowed of both sexes under age 65, or (c) total number of married women of all ages plus wi-

dowed women under age of 65, plus 10% of the single of both sexes, between the ages of 20 and 45.

Alexander Block suggests that the optimum limit of housing need may be set by the ratio of the proportion of adults to the total population. Other writers on this problem have assumed simply that married people within certain age-groups and single or widowed persons of certain ages constitute the families which need separate dwellings.

2. DEMOGRAPHIC BASIS

2.1 Planning for housing sufficiency requires full mastery of the relevant facts and figures about population and its characteristics.

In India, however, the problem of estimating housing needs is complex and difficult in as much as the statistical information regarding demography, housing and house-building activity is scarce. Since the advent of the First Five Year Plan, some efforts are being made by the Census Commission of the Government of India, the National Buildings Organisation, New Delhi, and the Central Statistical Institute, Calcutta, to collect the basic data. We still do not have accurate figures regarding :

- (i) The available residential and non-residential building stock.
- (ii) The number of residential and non-residential buildings constructed each year, number of buildings repaired, reconditioned, demolished, etc, each year.
- (iii) Capital investment in building industry, number of man-hours spent on construction, trends in employment and wages in building trade, cost of building-overheads, quantum of various building materials used and required each year, etc.
- (iv) Number of houses sub-divided into two or more separate dwellings either due to partition of immovable property of joint families or to fetch more rent in case of rental housing.
- (v) The number of houses in which a room or a portion of the house is sub-let to bachelors to families without children.

† The estimates of housing needs given in this article are based on the population data of the 1951 Census and the projection of population made before 1961 Census. The estimates have to be revised in the light of the full data of 1961 Census, when they are available.

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- (vi) Number of dwelling units lost annually to the Housing stock on account of conversion of dwellings into shops and commercial outfits.
- (vii) The differentiation between families and households is not very clear. The number of 'concealed' families is unknown.
- (viii) In many parts of the country accurate statistics regarding births, marriages and deaths are not available, as they are often under-reported or not reported at all. The rate of formation of families largely depends on the marriage rate. But an overwhelming majority of marriages are not registered. From this ignorant position one cannot correctly forecast the future marriage rate. We cannot, therefore, correctly estimate the number of dwellings needed to house these families.
- (ix) Perhaps the greatest deficiency in our demographic data is the total absence of information regarding the number of persons migrating annually from rural to urban areas and their socio-economic characteristics, such as age, sex, occupation, income, place of residence, existing encumbrances, etc.

3. HOUSES AND HOUSEHOLD

3.1 In estimating the quantitative need of housing, it is necessary first to know the number of houses and households for a given population. Our aim in adjusting the housing to the population should be to provide a separate dwelling for each household suited to its individual needs, though it is a difficult goal to achieve. In the census enumerations of India prior to 1951, the terms 'house' and 'family' were used rather loosely, and the definitions were vague. In the 1951 census some attempt was made to define the two terms more precisely and separately. A 'household' was defined as a group of people who lived together and took their food from a common kitchen. A house was defined as a building within which people lived, provided that if different parts of the building were structurally separated and provided with separate main entrance so as to give independent access to each part, then each such part was to be recognised and numbered as a separate 'house'.

3.2 Much of the confusion in the interpretation of census data on housing, therefore, derives from this loose usage of the terms, 'family' and 'household'; these two words are not synonymous. A family is a biological unit, whereas a household is primarily an economic or social unit, established by a person living alone or by several persons related or not by marriage or kinship, living together to carry out in common certain house-keeping functions, such as cooking, dining, etc. A married couple constitute the core of the family; normally its need is only one house suited to its size, requirements and capacity to pay economic price or rent. Families which contain neither married couples nor children can hardly be called true 'families'. They are 'households' in the real sense. One person households are very sensitive to economic pressure. Their housing needs are genuine and yet difficult to satisfy.

3.3 In India most of the families are 'joint-families', with two or more married couples living together with their children. Many of these married couples would perhaps like to live independently as separate households, if suitable residential accommodation was made available. As the traditional Hindu joint-family system is gradually declining, and the trend is in favour of independent biological families, many potential or concealed households are bound to emerge, as soon as conditions become favourable. In addition to private households we have several institutional households like hotels, boarding and lodging homes, paying-guest houses, hostels, jails, orphanages, etc. We do not have any idea regarding the number of such institutional households, the number of inmates they have, and their age, sex, marital conditions, etc. It is, therefore, necessary to classify the households further into (a) family households, (b) non-family private households, (c) single person households and (d) household institutions, etc. It is only then that we can assess the quantitative need for housing on the basis of 'a separate house to each household'.

3.4 Accurate data should be collected not only regarding the number of households which already occupy separate dwellings but also the concealed households, which would prefer to have separate dwellings. A true measure of our housing deficiency is the difference between the apparent demand plus the concealed demand and the number of habitable dwellings that are available.

4. HOUSING DEFICIT

4.1 According to the Census Reports, the urban population in India increased by 10.6 million during the decade 1931-41 and by 18.1 million during 1941-51 (Table 1) while the number of occupied houses in urban areas increased by 1.8 million and 1.7 million, respectively. Obviously, the increase in the number of houses did not keep pace with the increase in population.

TABLE 1
Urban population and occupied houses in India
1921-61

Census year	Urban population in million	Number of occupied houses in million
(1)	(2)	(3)
1921	29.3	5.7
1931	35.0	6.8
1941	45.6	8.6
1951	61.9	10.3
1961	..	..

4.2 In 1951 the total population of India was 357 million, out of which 61.9 million or 17% of the total were in urban areas and 295 million or 83% of the total were in rural areas. In the same year there were 64.4 million occupied houses out of which 10.3 million or 16% of the total were in urban areas and 54.1 million or 84% of the total were situated in 5,58,000 villages, large and small. There were thus 6 persons to a house in urban areas and 5.5 persons to a house in rural areas.

4.3 According to the sample survey conducted by the Government of India in 1951, there were 12.8 million household in urban areas against 10.3 million occupied houses, which means there were 1.24 households per house. The corresponding figures for rural areas were 60.59 million households and 54.1 million houses or 1.2 households per house. On the basis of these figures it can be worked out that there were $61.9/12.8=4.7$ persons in an urban household and $295/60.59=4.9$ persons in a rural household. Therefore, there were $4.7 \times 1.24=5.84$ persons in an urban house and $4.9 \times 1.2=5.4$ persons in a rural house. These figures based on a sample survey do not agree with the previous figures, viz., 6.0 and 5.5, derived by dividing the entire urban and the entire rural population by the total number of urban and rural houses, respectively. The discrepancy may be attributed to the following facts:

- (i) Household data are based on a sample survey, and a sampling error is unavoidable.
- (ii) Sample household data are exclusive of people living in boarding houses, hostels, jails and other institutions.

4.4 If we aim at a separate dwelling for every household, then on the basis of the sample survey referred to above, we may say that in the year 1951, the deficit of houses per 100 households in the urban and the rural areas was 24 and 12 respectively, which means the shortage was 24 houses for every 471 people in urban areas and 12 houses for every 491 persons in rural areas. Therefore, the total housing deficit in urban areas was $24(61.9 \times 106)/471=3.2$ million and the corresponding deficit in rural areas was $12(295 \times 106)/491=7.2$ million. The gross deficit in housing was $(3.2+7.2)=10.4$ million. As stated earlier, this is only an apparent shortage. As no accurate figures are available regarding concealed households, it is not possible to assess the actual shortage, which will obviously be well over 10.4 million.

5. HOUSING DURING 1951-61 PERIOD

5.1 Several attempts have been made to estimate the probable population of India by 1961. According to one of the estimates of the Census Commission of India, the population in 1961 will be 41 million. One of the population projections made by Prof. Cole of Princeton University (based on the assumption that fertility rate will decline) places the probable population in 1961 at 416 million. The projection made by the Central Statistical Institute, Calcutta, also gives a figure which is not very different from 410 million. How will

this population be distributed between urban and rural areas? For the past few decades the urban population has been increasing much more rapidly than the rural population. (Table 2).

TABLE 2
Percentage distribution of urban and rural population of India 1921-51

Census year	Percentage of total	
	Rural	Urban
(1)	(2)	(3)
1921	88.7	11.3
1931	87.9	12.1
1941	86.1	13.9
1951	82.7	17.3

5.2 If this trend in urbanisation continues, it is likely that in 1961 the urban population will be about 22.0% of the total and the rural population will be 78%. The urban and the rural population will, therefore, be 90 million and 320 million, respectively. The additional number of houses required in urban areas will, therefore, be $(90.0-61.9) 100/470=6$ million. The corresponding figure for rural areas will be $320-295/1 \times 100/490=5.1$ million. These figures are based on the assumption that during the 1951-61 decade, there will be no substantial change in the household pattern. The additional requirements in housing by 1961 will, therefore, be $(3.2+6.0)=9.2$ million urban houses and $(7.2+5.1)=12.3$ million rural houses or a gross total of $(9.2+12.3)=21.5$ million houses.

5.3 To this we have to add the number of houses which are likely to be demolished between 1951-61 due to age, structural deterioration, road widening, etc. Assuming a depreciation rate of 10%, the replacement requirements during 1951-61 will be $10.3/10=1.03$ million houses in urban areas and $54.1/10=5.41$ million houses in rural areas. Further, slum clearance will necessitate immediate demolition of a large number of urban houses which are totally unfit for human habitation. The Sen Committee which examined the problem of housing and slum clearance in India has reported that there are at least 1.1 million slum dwellings in urban areas and that approximately 20% of the slum dwellings in metropolitan cities and 5% of the slum dwellings in cities and towns are totally unfit for human habitation. We may, therefore, assume that at least 5% of all the urban dwellings desire immediate demolition under slum clearance schemes. Thus the replacement of accommodation in urban areas will be $10.3/20=0.51$ million.

4 To sum up, the total additional requirements for urban housing by the year 1961 would be:—

	Million
) Shortage up to 1951	3.2
) Replacement requirement due to depreciation 1951-61	1.0
i) Additional accommodation due to increase in population	6.0
) Replacement of accommodation under slum clearance	0.5
Total additional requirements	10.7

5.5 So far as rural housing is concerned we have to assume that the replacement demand will be met by the rural people themselves, instead of depending upon the government to take up redevelopment programmes. The total additional requirements of rural housing by 1961 would be:—

	million
i) Shortage up to 1951	7.2
ii) Additional accommodation required due to increase in population, 1951-61	5.1
Total requirement	12.3

5.6 In view of the increasing tempo of migration from rural to urban areas, the actual additional requirement will be a little less, say, 10.3 million dwellings. Therefore, the total additional requirement of accommodation in both urban and rural areas at the beginning of the third plan (1961) will be $(10.7 + 10.3) = 21$ million houses.

THE BUILDING PROSPECT

6.1 As against such a colossal demand what would be the supply of accommodation? It is estimated that during the First Five Year Plan period (1951-56), 1.6 million houses were constructed in the urban areas (0.7 million houses in the private sector and 0.9 million houses in the public sector). The Second Five Year Plan has fixed the following targets for the urban areas:—

	No. of units*
(i) Subsidised industrial housing	128,000
(ii) Low income group housing	68,000
(iii) Rehousing slum-dwellers	110,000
(iv) Middle income group housing	5,000
(v) Plantation labour housing	11,000
Programmes undertaken by other Central Ministries, by State, Government and local bodies, etc.	753,000
Construction by private sector	800,000
TOTAL	1,875,000

6.2 Thus the programme of the Second Plan envisages the construction of about 1.9 million dwelling units in urban areas. It is doubtful whether this target will be achieved. Even if the target is completely achieved, we will still have a net deficit of $10.7 - (1.6 + 1.9) = 7.2$ million houses in urban areas alone by the beginning of the Third Plan (1961). Assuming that the additional accommodation required in rural areas for replacement of old houses will be met by the villagers themselves by self-help and other methods, we still have a deficit of 12.3 million dwelling units in villages.

6.3 Planning for satisfying such a large demand calls for a sound housing policy and a phased house building programme. Where will such a large number of houses be located: in towns or cities? What is the extent of land required for these houses? As very few new towns are being planned or built, most of the new houses are going to be built in existing Urban centres. However all towns and cities are not growing at the same uniform rate at present. Metropolitan cities like Calcutta, Bombay, Delhi and Madras have been almost doubling their populations every 10 to 15 years. Cities with population over half a million are growing at a faster rate than smaller ones. If the present trends continue we may expect that by the time we make good the shortage in housing most of our urban centres will hold nearly double the number of houses they have at present. This will inevitably lead to urban sprawl and wilderness unless housing and planning are well integrated.

7. QUALITATIVE ASPECT OF THE NEED

7.1 Housing is not after all the end in itself but it is, at best, a means to healthy and purposeful living. It is, therefore, a fallacy to think that the housing problem will be solved by merely building a few million houses more. The qualitative aspect of housing need is perhaps as important, if not more, as the quantitative aspect of the need. However, it is very difficult to measure the qualitative aspect of the housing need in terms of types and sizes. The family structure, income and the cost of construction or economic rent are the primary factors that determine the sizes and types of dwellings.

7.2 The quality of housing in India is very poor as revealed by the National Sample Survey.* In its seventh round (October 1953 to March 1954) the National Sample Survey investigated housing conditions in 943 sample villages as well as in 53 sample towns and in four metropolitan cities, viz., Calcutta, Bombay, Delhi, and Madras. In the urban areas studied nearly one quarter of the

* Govt. of India, Planning Commission—"Second Five Year Plan", 1956 New Delhi.

dwellings had very flimsy plinths, walls and roofs built out of mud. About 44% of the urban dwellings had only one room, 28% two rooms, 12% three rooms, and 16% four or more rooms. About 46% of the houses had less than 9.3 sq. metre (100 sq. ft.) per head. These facts illustrate the extent of urban congestion prevailing in our cities, particularly where the land values are very high.

8. SOCIAL ASPECTS OF HOUSING

8.1 The evolving of a housing policy and working out of a house building programme involves basic social judgments. Because, the housing needs of a given population are determined not by its growth alone but by its differentiation into different units. This fact, provides the link between demography and sociology. We need to consider how do people want to live, and how are they living at present, what effect does environment have on their lives; what is the relationship between the dwellings and the social characteristics of the households, the social grouping of the dwellings and the dwellings in relation to the amenities like schools, shops, health and recreational facilities, etc?

8.2 There are many social aspects of housing which have not been studied in detail in India :

- (i) Whether neighbourhood planning will be successful in India and if so under what circumstances.
- (ii) Child care, privacy, leisure time pursuits, etc, and their influence on the design of the house.
- (iii) Geographic relationship of homes to employment, schools, shops, entertainment centres, etc.
- (iv) The dynamics of mobility of population is one of the greatest unknowns, fundamental to many aspects of housing and planning. How often does a family shift from the town or city and neighbourhood to another and why? The incessant movement of households from one place to another is both cause and result of some of our most serious housing and planning problems.
- (v) Do the people in cities still prefer ground floor dwellings to flats and if so what are the social reasons?

In a society as varied and changing as ours it is not easy to answer such questions, especially during a transitional period like the present one, and when the necessary facts and figures are not available. Nevertheless, these questions have an important bearing on the quantitative aspects of the housing need.

8.3 In many large housing programmes undertaken in the public as well as the private sector, it is noticed that no serious attempt is made to fit the envelope of the house in the size and other characteristics of the family using the accommodation. The Government decides the sizes and types of housing by the pay and status of the officials, while in the private sector the speculative builder shows scarcely any consideration to the sizes and needs of families, but tries to play safe by building 'average' houses for 'average families'. The consumer thus has practically no choice in the matter of selecting the accommodation suited to his socio-economic needs.

9. CONCLUSION

From the foregoing discussion we may draw the following conclusions :

- (i) An accurate estimate of the housing needs at national, state and local levels, is prerequisite to formulation of a housing policy.
- (ii) Assessment of housing needs should be based on accurate and detailed analysis of demographic data. As our census data are very inadequate and lacking in details, we have to resort to a short-term approach based on the available data, howsoever incomplete, and a long term approach based on accurate statistics and surveys.
- (iii) Estimates based on Sample Surveys, case studies and pilot projects would be more accurate and more revealing than estimates based on demographic figures, under the present circumstances in India.
- (iv) The importance of collecting data regarding births, marriages, migration and deaths, etc, cannot be over emphasized.
- (v) Institutions like the National Buildings Organisation, the Central Statistical Institute, the Reserve Bank of India, the Planning Commission, the Ministry of Works, Housing and Supply, Housing Boards in States, City and Town Municipalities, etc, should collect, collate and

publish periodically housing statistics in their varied aspects, at National, State and Local levels. Facts and figures on certain aspects of housing are totally lacking. For instance, the number of building licences issued annually; the number of dwellings completed and occupied; number of dwellings demolished, replaced, renovated; quantum of building materials used, trends in investment in the building industry; fluctuations in the wages of building labour must be ascertained regularly.

- (vi) Social aspects of the housing need should be assessed as much as the qualitative and quantitative needs. Our ultimate aim is,

after all, to provide every household an individual 'home' and not a 'house' to each 'family'.

- (vii) An accurate appraisal of the housing needs should ultimately lead to the formulation and implementation of a sound housing policy which should—to quote the instructions of the Congress of the U.S.A. to the Housing and Home Finance Agency—"encourage and assist the production of housing of sound standards of design, construction, livability and size for adequate family life and also the development of well planned, integrated, residential neighbourhoods, and the development and redevelopment of communities".
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Statistics Required to Compile the Indicators of Housing Conditions in Countries of the ECAFE Region***

by

Dr. C. M. Palvia †

1. INTRODUCTION

1.1 For formulating and implementing housing programmes knowledge about the quantity (*i.e.*, the number of housing units, the number of rooms, space and occupancy) and the quality (*i.e.*, the structure and type of dwellings and the facilities in and around them) of housing is essential. In housing statistics, however, elements of non-comparability exist. For example, some countries include 'kitchen' in the number of rooms and some exclude it; in some, 'housing unit' is not precisely defined from 'household', and conditions found in developing countries vary and are different from those in developed countries.

1.2 In order to facilitate the minimum base for uniformity and international comparability of data on the housing stock and quality, the 'General Principles for Housing Census' has laid down standard concepts and classification of housing units. The most important category of housing units on which information is required is "private conventional (permanent) dwellings".¹ Housing programmes, in general, aim at providing and maintaining a sufficient number of permanent dwellings and also at eliminating those housing units in such categories as rustic, improvised, not intended for habitation, etc. as soon as possible by mobilizing available financial and physical resources.

1.3 Items on which data are needed relate to information on the number of housing units by type, number of rooms, occupancy, water supply and sanitary facilities and their types (*i.e.*, flush, dry system of latrines, etc.).

1.4 Not all the data for measuring housing conditions are easy to collect, collate and tabulate nor is their cross tabulation with demographic and other economic information feasible. How-

ever, there would be a possibility for the flow of some relevant and uniform information as a result of housing censuses recently conducted (or likely to be conducted in near future) in some countries of the ECAFE region.²

1.5 From the limited sources of information available, one finds that housing and urban environs (as described in section 2) in countries of the ECAFE region are perhaps worse than in any other region. Broadly, 'it is estimated that about 50 per cent of the Asian population is living in slums in sub-human conditions'.³ The consequences of inadequate housing and slum living on the health of the individuals and community—in the form of high death rate, infantile mortality, morbidity, juvenile delinquency, etc., are serious. Low income families, particularly in urban areas, can hardly afford 'rent'.⁴

1.6 In view of the foregoing, the gravity of the situation can be understood in the context of the fast rate of increase in population, replacement needs due to depreciation, and eradication of present housing shortage. It is estimated that in Asia dwellings would need to be constructed at a rate of 10 per 1,000 of population (or 13 per thousand of urban inhabitants) and consequently about 20 million dwellings⁵ would annually have to be built to meet the existing shortages for the next thirty years, absorbing each year about 10 per cent of the gross national product.

2. PREVALENT HOUSING CONDITIONS AS INDICATED BY AVAILABLE DATA FROM LIMITED SOURCES

2.1 Neither authentic can be deducted at present, as regards housing conditions in the countries of the ECAFE region, nor can country comparisons be made in the absence of relevant statistics. Broadly, however, it can be stated that large majority of houses are rustic, improvised and dilapidated ones where water supply and sanitary faci-

† Joint Director, National Buildings Organisation, New Delhi.

1 *United Nations Statistical Papers, Series M. No. 28, 1958.*

2 "A dwelling is defined as a room or suite of rooms and its accessories in a permanent building on structurally separated part thereof which, by the way it has been built, rebuilt, converted, etc., is intended for private habitation and is not, at the time of the census, used wholly for other purposes. It should have a separate access to a street." (Para 304, *Ibid.*)

3 An account of how the relevant data from housing censuses in different countries of ECAFE region would be useful for measuring of housing conditions is given in section 4.

4 United Nations, ECAFE "Report of the Group of Experts on Social Development Planning" (Chapter IV)—1963.

5 United Nations, "Report of the *Ad hoc* Group of Experts on Housing and Urban Development" (Chapter IV)—1962.

6 *Ibid.*, page 29.

lities hardly exist. The present state of housing conditions described below appears to be prevalent in the countries of ECAFE region from the partial data available.

2.2 In North Borneo and Sarawak, according to the data given in the United Nations Compendium of Social Statistics (1963), in 1960 total number of housing units in the urban areas (*i.e.*, Jesselton, Sandakan, Tawau and Victoria-Labnan in North Borneo and Kuching, Simanggang, Sarikei, Sibul, Bintulu, Mini, Lutong, and Lumbang in Sarawak) was 9,000 in North Borneo and 15,000 in Sarawak. Proportion of conventional housing was 59.9 per cent in North Borneo, the rest being accounted for by collective housing.⁷ In North Borneo 75 per cent of urban houses had piped water supply either inside or outside the house; in Sarawak 84 per cent of houses had piped water supply: 68.7 per cent inside the house and 15.3 per cent outside the house. In North Borneo and Sarawak about 52.2 per cent and 49.8 per cent of people, respectively, lived in houses with three or more persons per room (and the average number of persons per room was 3.1 and 3, respectively).

2.3 In Burma,⁸ according to a sample survey of every fifth urban household arising out of the 1953 Population Census, there were 647,338 households in 252 towns. Out of these households 395,800 (or 61 per cent) had thatched or bamboo roof and about 530,000 (or 82 per cent) had thatched or bamboo or wood walls and over 80 per cent had earth, bamboo or wood floor. Average number of households per dwelling unit was 1.13 and average number of persons per dwelling unit was 4.84. Only about 73,000 households (or 11 per cent) had water supply either inside the dwelling unit or inside the compound of the dwelling unit; over 25 per cent of the households did not have latrine facilities; about 12 per cent had latrine facilities inside the dwelling unit; and about 60 per cent had latrine facilities in the compound of the dwelling unit. The situation in rural areas, as can be imagined, was worse, though tabulated data have not been available as a result of the sample survey taken of every fifth rural household spread over 3,159 villages.

2.4 In Ceylon, taking 5.33 persons per house it was estimated that in 1957 as against a total housing need of 1,810,000 houses, there were only 1,638,000 houses, showing a housing shortage of 172,000 houses (84,000 of urban houses and 88,000 of rural houses). An element of 'overcrowding' is signified by these data. According to the 1953 Housing Census data, average number of persons per room in rural areas was 2.2 and in urban areas 2.4. No data are, however, available in respect of type of housing units or about water supply and toilet facilities, pending the tabulation of the Housing Census conducted in 1963.

2.5 In China (Taiwan)⁹, between 1948 and 1949 about 900,000 people (excluding military personnel on active service) migrated to Taiwan from mainland China, and this made housing a serious problem more particularly in big cities, which was aggravated by other recurrent factors, such as fast natural increase in population and damages caused by earthquakes and typhoons. Overcrowding is a common phenomenon as each resident occupies on an average 5.09 sq. m. of housing space in Taipei and in a crowded family only 3.81 sq. m.¹⁰ In rural areas, per capita space occupied is greater than in the cities, but the building materials used and internal furnishings are simpler and poorer. Clay bricks for exterior walls have been used by about three-fourths of the rural houses, but the roof of about half the houses is made of thatch and reed. Seventy-five per cent of the farmers depend on wells for supply of drinking water; and 88 per cent of the houses do not have latrine facilities.

2.6 In Hong Kong¹¹, according to a household survey conducted by Hong Kong University (which covered regular housing urban areas occupied by 1,265,000 persons in 267,000 households) it was revealed that about four-fifths of the households were sharing common facilities in the accommodation occupied by them; 95,000 (7.5 per cent) were living in cubicles, 43,000 (3.4 per cent) in bed spaces, 8,000 (0.6 per cent) in cocklofts and 4,000 (0.3 per cent) on verandahs. Even in new resettlement blocks, the accommodation provided was 11.16 sq. m. (120 sq. ft.) for a household or 2.23 sq. m. (24 sq. ft.) per person. At the end of 1962¹², rated domestic accommodation in urban areas (excluding resettlement) was 110,877 tenement floors, 23,727 small flats, 16,827 low cost housing units, 10,062 large flats and 777 houses. Resettlement estates accommodated 535,959 people as on 31st March 1963. As against this, deficit of housing is for 900,000 to 1,000,000 people out of a total population of 3,526,500, according to the 1961 census, when about 894,000 people were living in grossly unsatisfactory conditions (*i.e.*, they were street sleepers, boat people, dwellers in stalls and caves, basements, roof tops, bed-spaces, shops, garages, corridors, verandahs, cocklofts and squatter huts). About 95.2 per cent of dwellings in urban areas had piped water supply and 51.3 per cent of occupied dwellings had flush toilets.

2.7 In India, the provisional data from the 1961 census 'house-listing' are under tabulation but indications suggest that the situation as regards housing supply has not worsened as compared to what was revealed from the data of the 1951 census, when the shortage was of 8 million houses, though perhaps housing conditions might have worsened. According to provisional data, number of rooms per household might perhaps be little less than two or, in other words, on an average

7 Collective housing includes hotels, institutions, camps, and multi-family housing units.

8 Refer to pages 273 to 292 of Vol. 1 of the First State Census (1953).

9 Source : Country paper submitted to the seventh session of the ECAFE Working Party on Housing and Building Materials (New Delhi, September 1962).

10 Side by side a large number of houses are vacant due to the inability to pay the rent (or economic rent) demand.

11 Source : Country paper submitted to the sixth session of the ECAFE Working Party on Housing and Building Materials (Bangkok, 1960).

12 Country report received.

there might be about 2.5 persons per room. No indication is, however, available about housing conditions except from the latest National Sample Survey Report¹³. The report brings out that, in rural area, about 73 per cent of the households live in all 'kutcha'¹⁴ and about 2 per cent in all 'pucca'¹⁵ houses; in urban area, about 25 per cent in all 'kutcha' and 8 per cent in all 'pucca' houses; other houses both in rural and urban areas are of the mixed type, *i.e.*, partly 'kutcha' and partly 'pucca'. Average floor area per person in rural and urban area is 7.23 sq. m. (77.8 sq. ft.) and 6.46 sq. m. (69.5 sq. ft.) respectively; the condition in metropolitan and industrial cities and capital towns is much worse. Household facilities, such as 'tap water', are largely unknown in rural areas; households depend mostly on ponds, tanks and wells for drinking water. In urban areas, about 47 per cent of the households do not have facilities for tap water, and 31 per cent depend on tanks and ponds. Built-in latrines in rural areas are almost non-existent; in urban areas, 44 per cent of the households, which do not have these sanitary facilities for private use, have to share with others. The position as regards bath rooms is also unsatisfactory both in rural and urban areas, though slightly better than in case of built-in latrines.

2.8 In Indonesia¹⁶, a shortage of 4.8 million housing units at the end of 1961 reveals the degree of overcrowding or doubling-up. The housing inventory, as it existed, was estimated to consist of 5 per cent of permanent masonry houses, 65 per cent of semi-permanent houses (mainly wooden structure) and 30 per cent of non-permanent houses (made from temporary materials).

2.9 In Iran¹⁷, major cities have acute shortage of houses and many of the houses are well below acceptable standards of comfort and health. Nearly 40 per cent of urban families are living in one-room dwellings and 30 per cent in two-room dwellings. Mud and mud-brick houses form about two-thirds of total dwellings. According to the statistics for thirty-two cities, only one-fourth of the families have running water supply.

2.10 In Japan, according to the United Nations Compendium on Social Statistics (based on the Report on the Housing Survey of Japan, 1958) conventional permanent dwellings formed 99 per cent of the total number of housing units

(*i.e.*, 18,115 thousand) and rustic improvised houses and collective houses were only 0.6 per cent and 0.4 per cent respectively. No information is, however, available in respect of water supply, occupancy and toilet facilities. Living space per capita in 1960, 6.4 sq. m., is very small by western standards. The size of dwellings (built with government aid even in 1963) is 44 sq. m. per unit compared to 80 sq. m. in western countries.

2.11 In South Korea, according to the 1960 sample survey of housing, only 13.7 per cent of housing units had piped water inside the dwelling or outside the dwelling but within 100 metres. Only 0.3 per cent of the housing units had flush toilets.

2.12 In Pakistan, according to provisional tables of the 1961 Population Census, the total number of households is about 16.34 million and of occupied residential houses is 15.91 million, showing a shortage of 430,000 houses. Shortage of houses in Karachi is about 85,000 and in Lahore 22,000 where the number of households is a little over 398,000 and 214,000, respectively. Thus, in the country as a whole and in urban areas (particularly, in larger towns) existence of housing shortages may mean some overcrowding or doubling up. In Karachi, about 116,600¹⁸ (or about 30 per cent) families have 'pucca' houses and about 64,500 (or about 15 per cent) have semi-pucca houses and the rest 55 per cent of families have other houses. The proportion¹⁹ of persons living in houses having latrines is 57 per cent, having bath rooms, 45 per cent and having running water and electricity 23 per cent. In West Pakistan, about 70 per cent of dwellings are made of mud walls and, in East Pakistan, 60 per cent of dwellings are made of bamboo and 30 per cent of timber and bamboo²⁰.

2.13 In the Philippines²¹, nearly one-half of the number of owner-occupied houses as on May 1956 had been built since 1949. Only about 11.6 per cent of the households lived in houses made of strong materials and 57.4 per cent lived in houses made of light materials. More than 60 per cent of all urban households, however, occupied houses made of either strong or mixed materials. In rural areas, nearly two-thirds of the households lived in houses made of light materials. Nearly 32 per cent of the households depended on shallow wells for drinking water, 28 per cent on artesian wells, about 20 per cent on

13 NSS Report No. 67 (for the period March to August 1957, as a result of the twelfth round) published in 1962.

14 A 'kutcha' house is one whose plinth was made of mud or bricks without any cement plaster and whose walls and roof have been built of grass, leaves, reeds or thatch, with or without any plaster.

15 A 'pucca' house is one whose plinth (and floor), walls and roof were built of burnt bricks and tiles, stone, cement concrete and/or timber.

16 Source: Replies received in ECAFE Secretariat from Indonesia to the questionnaire issued in respect of the Seminar.

17 Country paper submitted to the seventh session of the ECAFE Working Party on Housing and Building Materials (New Delhi, September 1962).

18 Report on Sample Survey of Karachi Population, 1959, page 7.

19 *Ibid.*

20 ECAFE, "Urbanization and Housing in Asia and the Far East", E/CN.11/I&NR/IIWP.7/L.1, September 1962, page 6.

21 National Economic Council, Bureau of Census and Statistics—The Philippines Statistical Survey of Economic Conditions Bulletin, (Series No. 2, Vol. I, Demographic and Socio-Economic Data) Manila, May 1956.

municipal piped water system and about 4 per cent depended on water supply from rivers, streams and lakes. However, in urban areas 75 per cent of the households had artesian wells or municipal piped system. In the country as a whole, only 26 per cent of households had sanitary toilet facilities (antipolo, sanitary pit and flush system) and 45 per cent had no fixed toilets. In rural areas, about 52 per cent of the households had no toilet facilities; but, in Manila, 68 per cent had sanitary toilet facilities and 13 per cent had the 'pail system'. According to preliminary reports of the 1960 Housing Census²², only 12 per cent of the houses were made of strong materials (for urban and rural houses, 30 and 8 per cent, respectively); about 57 per cent light materials (for urban and rural houses, 39 and 62 per cent, respectively); and about 30 per cent mixed material (for urban and rural houses 31 and 30 per cent, respectively).

3. A BRIEF ACCOUNT²³ OF INTERNATIONAL ACTION IN RESPECT OF STANDARDISING CONCEPTS AND DEFINITIONS IN RESPECT OF MEASURING HOUSING CONDITIONS

3.1 In view of the conditions of housing in some countries of the ECAFE region, as described in section 2, it would be of value to know what has been done by the United Nations agencies in laying down certain uniform definitions and principles and recommending statistical indicators of housing conditions.

3.2 A Joint Committee of Experts²⁴ sponsored by the United Nations, ILO, UNESCO, FAO and WHO was asked to report on the most satisfactory methods of defining and measuring standards of living and changes therein. This Committee, in its report²⁵, recommended a set of twelve components, including housing, to be taken into consideration in the measurement of levels of living. But the Committee, realizing that there were no indicators available for any appreciable number of countries to allow international comparisons of conditions of housing, recommended that the United Nations and interested specialized agencies might develop a programme for uniform housing surveys so as to obtain comparable data on levels of housing, at least on a regional basis.

3.3 Arising from the foregoing and also for complying with the Statistical Commission's resolution 19 (IX) (E/2876, para 120) a guide for collecting information on housing in various countries in connection with ensuing population censuses was prepared, as 'General Principles for a Housing Census'²⁶. A conceptual basis for the

selection of indicators of the housing aspect of the level of living is given in this document. Flowing from it, and also in accordance with the resolution 13 (X) of the Statistical Commission (E/3126, para 136), a tentative selection of indicators of housing conditions was prepared. After having been considered by the Working Party on Statistics for Social Programmes (1959) and also having been commented by selected housing agencies and experts, the 'indicators' were considered at the eleventh session of the Statistical Commission. The Commission remitted the document again to the Working Party with its comments and also desired that the document be considered by the regional groups concerned with housing statistics, revised by the Secretary-General and circulated to national statistical offices and housing agencies for comments²⁷.

3.4 The comments and views of the Statistical Commission, ECE Working Party on Housing Statistics, Working Party on Statistics for Social Programmes, and Inter-American Statistical Institute were considered and suitably incorporated in the United Nations Statistical Papers, Series M, No. 37 (1962). This document fills the gaps in statistical measures of the housing aspect of levels of living internationally and temporarily compared.

3.5 The UN document lists indicators in two categories: basic indicators meant for general applicability and supplementary indicators, for limited use, on a country or regional basis, with modifications or additions. It is pointed out that interpretation and understanding of these indicators have to be based on other pertinent information on climate, culture, degree of urbanization, demographic structure, economic structure, social structure and rates of change in housing situation over time. The document also recommends that these indicators should be applied separately to rural and urban areas.

3.6 The four basic indicators (B-1 through B-4) —(i) proportion of population living in permanent dwellings, (ii) per cent of dwellings with density of three or more persons per room, (iii) occupied dwellings served by piped water supply, and (iv) provision of essential facilities of toilets are designed to reflect the basic requirements of adequate shelter, privacy, protected water supply and sanitation facilities. The five supplementary indicators (S-1 through S-5)—(1) per cent of the population living in 'rustic' or 'improvised' houses, or those 'not intended for habitation', or without shelter of any kind; (2) average number of persons per room for occupied dwellings only; (3) per cent of occupied dwellings with flush toilets (in urban areas);

22 Country paper submitted to the seventh session of the ECAFE Working Party on Housing and Building Materials (New Delhi, September 1962).

23 A more detailed account is available in United Nations, *Statistical Papers, Series M, No. 37* (1962).

24 As enjoined under the provisions of the General Assembly resolution 527 (VI) and the ECOSOC resolution 434B (XIV), the Committee met in 1953.

25 United Nations, Report on International Definition and Measurement of Standards and Levels of Living (E/CN.3/179; E/CN.3/299, March 1954).

26 United Nations, *Statistical Papers, Series M, No. 28*, 1958.

27 United Nations, *Statistical Commission (E/3375, para 119)*.

(4) per cent of occupied dwellings with toilets other than flush; and (5) dwelling construction in relation to estimated requirements are designed to indicate housing deficiencies and to distinguish countries with low levels of housing from those with high levels, rather than between countries which have already attained high satisfactory levels.

4. INFORMATION ON HOUSING CONDITIONS IN THE COUNTRIES OF THE ECAFE REGION AS COLLECTED BY MEANS OF HOUSING CENSUSES²⁸

4.1 Not all the countries of the ECAFE region have a well-organized system of collecting information on housing conditions. The United Nations Compendium of Social Statistics, 1963²⁹ covers information on housing conditions in a limited way for only seven countries of the ECAFE region, namely Ceylon, Hong Kong, Japan, South Korea, North Borneo, Philippines and Sarawak³⁰ under four tables. Under Table 54, the 'percentage distribution of population living in each type of housing unit' (i.e., conventional, rustic, improvised and not intended for habitation, collective and others) is given; this conveys information about the indicators B-1 and S-1. Under Table 55, 'percentage distribution of housing units by type' is given. Under Table 56, 'per cent of occupied dwellings with piped water and with flush toilet' for conventional dwellings is given both for rural and urban areas. For water supply, information is further spelt out according to whether pipe-line is inside or outside the housing units within 100 metres. This table covers information in respect of indicators B-3 and S-3. As a corollary it might perhaps give information about B-4 and S-4. Under Table 57, 'per cent of occupied dwellings with three or more persons per room, and average number of persons per room: urban and rural' for conventional dwellings are shown and the table covers information regarding indicator B-2. Table 4 of the present document assembles the above point of tabulated information for some of the ECAFE countries in terms of measures of housing conditions.

4.2 The significance of some of the basic indicators for the ECAFE countries may be mentioned in brief. 'The percentage of population living in the housing units of the category of conventional (permanent) dwellings' (B-1) is a priority indicator of the housing aspect of levels of living. As a large proportion of (more than 70% in rural and 25% in urban parts) population in the countries of the ECAFE region lives in 'rustic' or 'improvised' houses, this indicator will serve as a basis for determining minimum housing needs that have to be provided for as a target of national housing policy. This indicator is of not much significance in developed countries where it has almost reached its highest attainable value. Even in the

ECAFE region, in a relatively developed country, such as Japan, 99 per cent of the housing units are already of this category. The indicator S-1 would ordinarily be derived if the information for B-1 is available.

4.3 The indicator B-2 (i.e., 'per cent of occupied dwellings with three or more persons per room') is also one of the priority indicators. A room is defined as a space in a dwelling or rustic housing unit, enclosed by walls reaching from the floor to the ceiling or roof covering, or at least to a height of 2 metres above the ground, of a size large enough to hold a bed for an adult (4 m² at least) and at least 2 metres high over the major area of the ceiling. The indicator is designed to measure the degree of overcrowding. This indicator is of importance for the countries of the ECAFE region, as overcrowding in rooms and housing units is a rule, particularly in urban areas. The indicator S-2 could be derived if information for B-2 is further classified.

4.4 'The per cent of occupied dwellings with piped water' inside or outside within 100 metres' (B-3) is also a priority indicator. It should be mentioned, however, that, in some housing censuses conducted in ECAFE countries, the term 'piped water supply' also covered 'running water' (and consequently open ditches were included in the category); in some others, only those dwellings with a piped water installation inside the structure were considered. In some other cases, all the dwellings located in a region with a communal system of water supply were considered as having water installations, although a substantial proportion of them have not connected to the system. For ECAFE countries, source of water supply (rather than piped water supply) and its distinction between drinking and general uses may perhaps be more important. In reality, water supply through pipes ensures protection against pollution of water. As piped water supply is available to a small section of the population, highest priority needs to be accorded in making public investments for ensuring pure and safe water supply in the countries of the region irrespective of whether it is piped water supply or otherwise (say deep-well potable water).

4.5 Indicator B-4 (i.e., per cent of occupied dwellings with toilets) is at present of a limited significance as latrine facilities are almost non-existent in rural areas in ECAFE countries and in urban areas they are highly deficient. The dichotomy into indicators S-3 (i.e., 'per cent of occupied dwellings with flush toilets') and S-4 (i.e., 'per cent of occupied dwellings with toilets other than flush') is also of not much relevance to the condition in the ECAFE countries at present. Rather, the indicator B-4 would suffice to indicate the direction in which public health measures in respect of dwellings could be undertaken. Information on

²⁸ For details of item coverage, classification, etc., refer to "A Methodological Analysis of Housing Censuses taken in Asia and the Far East" (E/CN.11/ASTAT/HSP/L.28) 1963.

²⁹ United Nations, *Statistical Papers, Series K, No. 2* (covering data available as on 1 November 1962).

³⁰ Though sixteen countries have carried (are carrying) out, housing census or housing listing—three countries before 1960 and thirteen during 1960-63 the information is available only for the countries listed here. For North Borneo and Sarawak information is available in respect of urban areas only.

³¹ Piped water refers to water laid on from a community-wide system or from individual installations (pressure tanks, pumps, etc.) for distribution of water under pressure.

facilities for flush toilets (S-3) may be desirable but, from the public health point of view, it should occupy a lower priority than that on provision of protected water supply.

4.6 Use of Housing Census—Housing censuses provide a statistical description of the basic items of the housing inventory; they serve as a general frame for sample studies and constitute a benchmark reference for current housing statistics. However, it is recognised that all the information required to assess housing needs, measure housing conditions, or formulate housing programmes need not be obtained through a census. Additional data have to be obtained through special housing surveys, vital and economic statistics. Nonetheless, the housing census would provide the basic framework within which all other housing data can be built up or collected.

4.7. Housing censuses in countries of the ECAFE region were taken in or around 1960, though detailed surveys or house listing as a secondary function of population census, existed even earlier: Ceylon, Japan and the Philippines had carried out censuses earlier in 1953, 1958 and 1955, respectively. In the housing censuses conducted in or around 1960, attempts were made to conform to the concepts laid down in the 'General Principles', notwithstanding partial coverage of items of the basic and additional lists of the 'General Principles'.

4.8 Housing censuses carried out recently by different countries in the ECAFE region would be useful in providing some material in an organized manner for measuring 'indicators of the housing aspect levels of living'. From the census data of the 'basic' list it would be possible to construct, for some of the countries, all or some of the indicators.

4.9 A brief account is given in Table 1 to show that a number of countries of the region are now in a position to compile some of the indicators for housing levels of living from the information available as a result of the housing censuses conducted around 1960.

4.10 Here it may be stated that in order to measure the quantitative and qualitative levels of housing conditions, plans of housing censuses should closely relate to the plans, programmes

and policies suitable for countries of the ECAFE region. From this text some modifications are called for in the use of methods laid down in the General Principles in the light of experience and coverage of last censuses. The following are of significance to the countries of the ECAFE region as regards coverage of items necessary to judge housing conditions. These could be measures for (a) number of rooms and floor space, (b) water supply (and its source rather than information on piped water supply with tap inside or outside the housing unit) distinguishing between drinking water and general water supply, (c) information on toilet (by various types rather than by flush only) preferably as to whether latrine exists, (d) bathing facilities (presence or absence and whether shared with other households), (e) cooking facility separate kitchen and with sink or drainage facility, and (f) drainage system for clearance of filth and used water (whether exists and is provided by local government as a part of broad drainage system).

4.11 In housing units in rural areas these facilities are almost non-existent. However, the information about these facilities (as enjoined in the *General Principles*) is of relevance for urban areas in countries of the ECAFE region and they may be collected. It is, therefore, a matter for consideration whether it would be useful to provide different schedules for the rural and urban areas in countries of ECAFE region while conducting housing censuses.

5. INFORMATION ON HOUSING CONDITIONS IN THE COUNTRIES OF THE ECAFE REGION AS COLLECTED BY MEANS OF SAMPLE SURVEYS AND OTHER INQUIRIES

5.1 Housing censuses in some countries of ECAFE region would yield information in respect of some statistical indicators of housing conditions. To fill in the remaining gaps, in some of these countries, and also in countries where country-wide housing censuses have not been taken or would not be feasible, intensive housing surveys for some limited areas, or housing sample surveys for the country as a whole, or provision of housing block in the schedules of some socio-economic surveys can be useful adjuncts. In particular, in these operations certain areas or population

TABLE 1

Information Available for Statistical Indicators of Housing Conditions from Recent Housing Censuses Carried out in Some Countries of ECAFE Region

Country	Indicators	Basic indicators				Remarks	Supplementary indicators				Remarks
		B-1	B-2	B-3	B-4		S-1	S-2	S-3	S-4	
Brunei, North Borneo and Sarawak.		x	x	x	x	All the items of the 'basic' and one item of 'additional' list of the <i>General Principles</i> were covered under census conducted in 1960.	x	x	x	x	Census conducted in 1960.
Cambodia		x	x			Information collected in 1962 covered only one item each of the lists of 'basic' and 'additional' items of the <i>General Principles</i> .					Information collected in 1962.
Ceylon		x	x	x	x	From 1953 Census information only one indicator, namely B-2 is available; but from 1963 census information for indicators B-1 through B-4 would be available.	x	x	x	x	From 1953 Census, no information is available about supplementary indicators; but from 1963 Census information for indicators S-1 through S-4 would be available.
Hong Kong		x				Collected as a part of 1961 Population Census (for boat population in February 1961 and land population in March 1961).	x				
India		x	x			Information collected through 'house-listing' schedule six to nine months before 1961 Population Census.	x	x			
Indonesia		x	x			Information collected few months in advance of October 1961 Population Census. Information for B-1 and B-2 is available only partially.	x	x			
Iran		x				Information sought in November 1961 National Census.	x				Information sought in November 1961 National Census.
Korea, Republic of		x	x	x	x	Information is available on number of facets of housing conditions besides the basic indicators.	x	x	x	x	Information is available on number of facet of housing conditions besides the supplementary indicators (though not on S-5).
Nepal		x	x	x	x		x	x			
Pakistan		x	x				x	x			
Philippines		x			x		x		x	x	

groups³³ may be selected for which information on housing is considered necessary in order to formulate policy for improvement.

5.2 Often, the role of the sample surveys is to fill the gap left by population and housing censuses. However, housing surveys need not relate solely to information on housing; it is often necessary to integrate housing with other economic and social data in order to analyze the overall levels of living.

5.3 Some countries of the ECAFE region have conducted sample housing surveys or collected information on housing as a part of socio-economic surveys. A countrywise account in this respect is given below³⁴.

5.4 In Burma³⁵, the Central Statistical Office had originally planned in 1953 to take, in stages, censuses and surveys comprising a total enquiry relating to the population as a whole. However, the programme had to be abandoned for various reasons after the second stage. About one-fifth of the country had been covered (including 248 cities and towns in Burma proper and four towns in the Kachin State in the first round and 2,143 village tracks in Burma proper and 1,016 village tracks in the Kachin State in the second round). Information collected on housing included information on: material of construction of roof, walls, floor and post (pillars), households living in housing units, water supply (including source of drinking water), toilet facilities, number of bedrooms. The housing survey of every fifth selected household³⁶ was carried out. Thus, in a partial way six statistical indicators (B-1 through B-4 and S-2 and S-3) could be obtained from the data collected through these surveys.

5.5 In Ceylon, besides the regular undertaking of housing censuses at the time of population censuses (once in ten years), *ad hoc* surveys are sometimes conducted by the Department of Census and Statistics for the assessment of the degree of overcrowding and the prevalence of sub-standard houses or the estimation of the rate of investment in housing. But information about them is not available. The Central Bank of Ceylon conducted a 'Survey of Consumer Finance' in 1953, with a section of the questionnaire devoted to housing. From this source of information, indicators B-1 through B-4 and S-1 through S-4 will be available.

5.6 In India, collections of information on housing conditions was started, on an exploratory basis

through sample surveys from the seventh round (October 1953—March 1964) in the National Sample Survey, and continued in subsequent surveys. Information that would now be available will be in respect of B-1, B-3 and S-1.

5.7 Special family living surveys (namely, the working class family survey covering 50 industrial centres and 6,600 families and middle class survey covering 45 cities and towns and 8,880 families) were conducted by the National Sample Survey in 1958-1959. In these surveys, information on housing conditions was collected. Housing is also an aspect of study in the socio-economic surveys of cities and towns. Some of the reports throw information in respect of "the average number of persons per room for occupied dwellings" only and "per cent of occupied dwellings with three or more persons per room (i.e., overcrowding)".

5.8 In Japan, the 1960 Population Census covered information on housing in a limited way. More comprehensive data are, however, available from the Housing Survey of 1958 conducted by the Bureau of Statistics³⁷. This survey covered the whole nation with a sampling ratio of one-seventh and one-fourteenth for urban and rural areas respectively. The useful items for the compilation of indicators were: (a) type of building structure classified into (1) wooden structure, fire-resisting temporary huts (b) condition of housing unit and year of construction (c) number of dwelling households (d) number of dwelling rooms and tatami in dwelling rooms (e) water supply, and (f) toilet facilities. The survey conducted provides a reliable basis for obtaining eight indicators (namely, B-1 through B-4 and S-1 through S-4) at national level.

5.9 In Pakistan³⁸, National Family Expenditure *ad hoc* Surveys were conducted by the Central Statistical Organization during 1955-1956³⁹ for industrial workers and government and commercial employees. These surveys incidentally give information as regards number of houses by type of structure and number of rooms and type of amenities. In the *ad hoc* Sample Survey of Karachi population (1959)⁴⁰ information is given in respect of type of habitation, water supply, bath room and latrine facilities and the number and percentage of families availing these facilities. Tables from the *ad hoc* Socio-Economic Survey of Rawalpindi (1960) collected information of urban and neighbouring areas of Rawalpindi in the

33 Such groups may be slum-dwellers, industrial workers, etc. and also other low income groups, such as sweepers and scavengers, scheduled tribes and scheduled castes as in India. The corresponding areas can be the slums, urban central area, ribbon developments or otherwise unhealthy areas.

34 A more detailed account about housing surveys for Ceylon, India, Pakistan, the Philippines and Singapore is available in *Sample Surveys in which housing information was collected in the ECAFE region* (E/CN.11/ASTAT/HSP/L.6/Add.1) 1963

35 United Nations, *Sample Surveys in which Housing Information was collected* (1953-1960) pages 22-23 (ST/ECLA/CONF.9/L.15, 1962).

36 The selection was made on the basis of a prescribed selection chart indicating household numbers to be selected in relation to the number of the enumeration district.

37 The report of this Survey was published in March 1960. Such surveys are carried out quinquennially in Japan since 1948.

38 *Catalogue of Official Statistics* (Document No. 2/OVG/1960 Central Statistical Office, Government of Pakistan).

39 Conducted by Central Statistical Office, Ministry of Finance in collaboration with the Institute of Public and Business Administration and Development Economics.

context of its being a new capital city of Pakistan and its consequent growth. The survey conducted for various towns in family expenditure surveys offer material at local levels to arrive at six statistical indicators (*i.e.* B-1 through B-4 and S-2 through S-4).

5.10 In the Philippines, the Bureau of Census and Statistics carried out a statistical survey of households in May 1956 of which the results were published in the *Philippines Statistical Survey of Households Bulletin* (April 1957). From this survey, in a limited way, six indicators (*i.e.* B-1 through B-4, S-3 and S-4) can be constructed.

5.11 In Singapore, a sample survey was conducted of the housing conditions in Singapore's crowded areas by students of Social Studies at the university of Malaya. The information in respect of three basic indicators, (*i.e.* B-2 through B-4) and one supplementary indicator S-2 can be obtained.

5.12 In South Viet-Nam, between June 1958 and January 1959 a certain number of demogra-

phic pilot surveys were conducted by National Institute of Statistics beginning from Saigon and covering Hue, suburbs of Saigon, Cantha, Nhatrang, and Dalat. Coverage in respect of housing included: 'number of households living in the housing unit', 'number of rooms used for habitation', 'running water' and materials used for walls. These pilot surveys can prove helpful for having three basic indicators (*i.e.* B-1 through B-3) and one supplementary indicator S-2.

5.13 The surveys in some of the countries in the ECAFE region described above provide information which can be useful for compiling statistical indicators of housing conditions. A summary of such possibilities is given in Table 2. The information available from the surveys is, however, not sufficient to convey any definite and complete idea about housing conditions. It nonetheless reveals that in general housing standards in countries of the ECAFE region are highly substandard if assessed in terms of the 'statistical indicators of housing conditions' as laid down by the United Nations.

TABLE 2
Information Available for Statistical Indicators of Housing Conditions in Various Housing and Other Socio-Economic Surveys in Some Countries of ECAFE Region

Country	Basic indicators				Supplementary indicators					Remarks or sources for material
	B-1	B-2	B-3	B-4	S-1	S-2	S-3	S-4	S-5	
Burma	x	x	x	x		x	x			Surveys covered 252 towns and 3,179 villages.
Ceylon	x	x	x	x	x	x	x	x		Surveys conducted by Central Bank of Ceylon in 1953 as well as 1963.
India	x	x	x	x	x	x	x	x		NSS Surveys, RPC Surveys.
Japan	x	x	x	x	x	x	x	x		1958 Housing Survey as a part of quinquennial operations.
Pakistan	x	x	x	x		x	x	x		Surveys conducted for urban areas only under National Family Expenditure ad hoc Surveys.
Philippines	x	x	x	x		x	x			Surveys conducted by Bureau of Census and Statistics in May 1956.
Singapore		x	x	x		x				Sample survey conducted in Singapore in 1955.
Viet-Nam, South	x	x	x	x		x				Pilot surveys conducted in 1958-1959. (Expression in terms of households only is possible).

6. CONCLUSION

6.1 For formulating housing policies and programmes as well as for implementing them, knowledge about the quantum and quality of housing inventory is essential, for which scientific method and organized machinery are called for. Quinquennial or decennial housing censuses supplemented by housing surveys either on regular or *ad hoc* basis can provide the statistical material needed to assess the quantum and to measure the quality of housing stock at a particular point of time.

6.2 The *General Principles for Housing Census* provide a basic guide line for conducting housing census which is being (or can be) adopted with suitable adjustments in different countries. Sixteen countries have recently conducted housing censuses from which some measure of information to judge housing conditions is or would be available.

6.3 Presently, on the basis of limited information available, it can broadly be stated that housing conditions in countries of the ECAFE region,

both in rural and urban areas, are at a very low level as compared to those in developed countries. The proportion of conventional dwellings is very small. Rustic or improvised houses built of mud, thatch, semi-burnt bricks, grass or leaves prevail in large number of cases (particularly in rural areas). Facilities for protected or potable water supply for drinking, sanitary facilities as regards flush or dry system of latrines, bathrooms facilities, etc. are available to only a minor section of the population.

6.4 Statistical indicators, namely, the four basic indicators and the first four supplementary indicators of housing conditions as laid down by the United Nations, can be compiled out of data made available from housing censuses and/or housing surveys as well as socio-economic surveys.

6.5 At present, the housing censuses of five countries (namely, Brunei, Ceylon, South Korea, North Borneo and Sarawak) offer a possibility of constructing eight indicators (*i.e.*, B-1 through B-4 and S-1 through S-4). Nepal offers the possibility of providing six indicators (*i.e.* B-1 through B-4 and S-1 through S-2) out of the housing census. In the Philippines, five indicators (*i.e.* B-1, B-4 and S-1, S-3 and S-4) will be available. India's housing listing and Population Censuses of Indonesia and Pakistan will provide data to compile four indicators (namely B-1, B-2 and S-1 and S-2). Two indicators (*i.e.* B-1 and S-1) will be available in case of Cambodia, Federation of Malaya, Hong Kong and Iran.

6.6 From housing surveys (with due regard to the limitations involved in terms of sampling size, etc.) indicators either on national level or for certain centres or regions can be available. Eight indicators can be had in case of Ceylon, India and Japan; seven indicators in case of Pakistan (B-1 through B-4 and S-2 through S-4); six indicators (*i.e.*, B-1 through B-4 and S-2 and S-3) in case of Burma and the Philippines; five indicators in case of South Viet-Nam; and four indicators (*i.e.*, B-2 through B-4 and S-2) in case of Singapore.

6.7 A synoptic view of the sources required and available and how they help towards constructing statistical indicators of housing conditions in countries of the ECAFE region is presented in Table 3, on the patterns of Tables 1 and 2 of the United Nations document on *Statistical Indicators of Housing Conditions*. This gives more or less the present situation as it stands as regards availability

of information on housing conditions and their measurement, in the countries of the ECAFE region.

6.8 It is clear from the table that seventeen countries provide information on housing conditions and that in twelve countries data are available for some of the indicators from censuses; while for eight countries data are available from national sample surveys or localized surveys. Only four countries (Ceylon, India, Pakistan and the Philippines) offer data useful for compiling the indicators both from the censuses and the surveys, giving sometimes more information from censuses and sometimes more from surveys. Again, for indicator B-1, all the countries (as listed in Table 3), except Singapore, have the information either through censuses or surveys; for B-2, fourteen countries; for B-3 and B-4, thirteen countries; for S-1, fifteen countries; for S-2 fourteen countries; for S-3, ten countries; and for S-4, only nine countries.

6.9 Partly from the data of the housing censuses and/or housing sample surveys, statistical measures for indicators of housing conditions have been calculated, and as mentioned earlier, have been published for seven countries of the ECAFE region in the United Nations *Compendium of Social Statistics, 1963 (Statistical Papers Series K, No. 2)* in different tables. These data have been compiled for three basic indicators (B-1 through B-3) and two supplementary indicators (S-1 and S-3).

6.10 In India, at present, the refined measurement of housing conditions is neither feasible nor necessary. But what is essential for a large section of population is to judge the quantum of housing with a semi-permanent roof overhead and walls on the sides with proper provision of ventilation, protected and potable water supply and some facilities for latrines and drainage and essential sewage. Information if collected and tabulated on these would be more meaningful, which may not be so in the collar regions covered by most of the developed countries where permanent housing with insulated building materials and facilities of water supply and flush latrines may be more relevant. Housing census and survey schedules may therefore be objectively designed to collect information on these aspects in the first instance, leaving to the future the collection of other information for judging the housing levels of living.

TABLE 3

Statistical Indicators of Housing Conditions and Statistical Items Required for Their Computation and Their Availability at Present (alongwith Sources of Materials) in Countries of the ECAFE Region

Country	Indicators Code Nos. of items of statistics required	B-1		B-2		B-3		B-4		S-1				S-2			S-3		S-4		Time reference	Remarks
		1a	7	1a	7	1a	3	1a	4	1b	1c	1d	7	1a	2	7	1a	5	1a	6		
Brunei	Census	x	x	x	x	x	x	x		x	x	x	x	x	x	x	x	x	x	10 years		
Burma	Survey	x	x	x	x	x	x	x	x					x	x	x	x	x			For 252 towns and 3,179 villages.	
Cambodia	Census	x	x							x	x	x								10 years	As collected in 1952.	
Ceylon	Census	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	10 years	Information from 1953 census and 1963 census which is yet to be conducted. Survey conducted by Central Bank of Ceylon.	
	Survey	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x			
Hong Kong	Census	x	x							x	x	x	x							10 years	1961 Population Census.	
India	Census	x	x	x	x					x	x	x	x	x	x	x				10 years	House listing only.	
	Survey	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	Generally six months Not fixed	(1) NSS Surveys. (2) RPC Surveys.	
Indonesia	Census	x	x	x	x					x	x	x	x	x	x	x				10 years	Population Census 1961 (partially).	
Iran	Census	x	x							x	x	x	x								1956 National Census.	
Japan	Survey	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	5 years	1958 Housing Survey.	
Korea, South	Census	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	10 years		
Nepal	Census	x	x	x	x	x	x	x	x	x	x	x	x	x	x					10 years	Population and Housing Census 1961.	
North Borneo	Census	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	10 years		

TABLE 3 (Contd.)

Country	Indicators Code Nos. of items of statistics required	B-1		B-2		B-3		B-4		S-1				S-2			S-3		S-4		Time re- ference	Remarks
		1a	7	1a	7	1a	3	1a	4	1b	1c	1d	7	1a	2	7	1a	5	1a	6		
Pakistan	Census	x	x	x	x					x	x	x	x	x	x	x				10 years	Housing Census 1960.	
	Survey	x	x	x	x	x	x	x	x					x	x	x	x	x	x	x		Urban areas only (conducted under National Family Expenditure <i>ad hoc</i> Surveys).
Philippines	Census	x	x					x	x	x	x	x				x	x	x	x	10 years		
	Survey	x	x	x	x	x	x	x	x				x	x	x	x	x				Survey conducted by Bureau of Census and Statistics.	
Sarawak	Census	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	10 years		
Singapore	Survey			x	x	x	x	x	x				x	x	x						Only for urban areas sample survey conducted in 1955.	
Viet-Nam, South	Survey	x	x	x	x	x	x	x	x				x	x	x						Pilot surveys. Conducted in 1958-1959.	

NOTES.—(1) Afghanistan, mainland China, China: Taiwan, Federation of Malaya, Laos and Thailand have not been accounted for in this statement as possibly no information either through census or surveys is available.

(2) Statistical indicators are according to Table 1 (page 16) and code numbers are according to Table 2 (pages 18 to 19) of the *Statistical Indicators of Housing Conditions* (UN Statistical Papers, Series M, No. 37, 1962).

(3) Definitions of the code items are according to *General Principles for Housing Census* (UN Statistical Papers, Series M, No. 28, 1958).

TABLE 4
Published Information in terms of Indicators of Housing Conditions
in the Countries of the ECAFE Region

Country	Indicators	B-1	B-2	B-3	S-1	S-3 ^d
		Per cent of the population living in conventional dwellings	Per cent of occupied dwellings with three or more persons per room	Per cent of occupied dwellings with piped water inside the dwelling or outside the dwelling but within 100 metres	Per cent of the population living in housing units classified as 'rustic', 'improved', 'not intended for habitation', or which is without shelter of any kind	Per cent of occupied dwellings with flush toilets
Ceylon ¹ (1953)		..	2.2 ^c	..	..	..
Hong Kong ² (1960)		95.2 ^a	0.6 ^e	51.3 ^a
Japan ³ (1958)		99.0 ^e	..	..	0.6 ^e	..
Korea, South ³ (1960)		13.7	..	0.3 ^a (0.1) ^b
North Borneo ⁴ (1960)		59.9	52.2	75.0 ^a	36.6 ^a	38.4 ^a
Philippines ⁵ (1956)		75.0 (47.5) ^b	..	18.4 ^a (6.6) ^b
Sarawak ⁶		22.4	49.8	84.0 ^a	73.1 ^a	36.5 ^a

Source : United Nations, *Compendium of Social Statistics*, 1963 (Statistical Papers, Series K, No. 2).

1 Percents are computed on total occupied housing units rather than total occupied dwellings, and average number of persons per room refers to occupied housing units.

2 Data refer to total occupied housing units.

3 Data based on results of sample survey of housing.

4 Data are for Jesselton, Sandakan, Tawau and Victoria (Labuan) only.

5 Data refer to households.

6 Data are for the urban areas of Kuching, Singapore, Sarikei, Sibul, Bintulo, Miri, Lutong and Limbang.

a For urban areas only.

b Total of the country.

c Average number of persons per room.

d Possible residue percentages may be for toilets other than flush and may give the indicator S-4.

e Gives percentage of housing units and not of the population.

Statistical System in India and Other Developing Countries—Sources of Important Statistical Series***

by

Dr. K. B. L. Bhargava†

1. INTRODUCTION

1.1 The term 'statistical system' is generally used to represent the full range of national official statistical activities including major statistical operating offices, specialized departmental offices, the statistical organisations in Governments, the political sub-division, local bodies and the official committees or boards having responsibilities related to the national statistical activities.

1.2 The history of growth of a national statistical system should represent the struggle for a solution to meeting the country's statistical needs corresponding to the nature of its economy, its stage of development and its institutional structure. In keeping with this broad objective, the primary and continuing function of a national statistical system should be to (i) collect, compile and publish regularly a set of integrated statistics which provide the quantitative information necessary for an intelligent appraisal of the economic and social structure of the nation, the forces that activate it, and their inter-relationships, (ii) to screen and control the issuance of statistical forms, questionnaires and schedules which will ensure the collection of better integrated and more uniform set of statistics. They can use standard definitions and classifications and see that in all statistical enquiries the coverage and time periods are identical, (iii) develop and apply statistical standards, such as (a) precise definition of each of the elements of a particular statistical series, (b) systematic classification of elements, and (c) specification of methods to be followed in constructing the particular series, (iv) to conduct research in statistical methods and operations. A further function which the national statistical system should assume is to facilitate the education and training of statistical personnel of all grades in order to meet the demands of increasing statistical activity, (v) function in liaison with and as an integral part of the international statistical system by organising its activities to the extent possible in accordance with the pattern recommended by the international statistical bodies.

It should at once be obvious that in order to discharge properly the above responsibilities the national statistical system should ensure maximum co-ordination at various levels of statistical activity. In order to achieve the objectives official statistics must be organised as a system, in an orderly manner oriented towards one common purpose.

1.3 There are two main types of national statistical systems (i) Centralised statistical system, and (ii) Decentralised statistical system. A centralised statistical system is one in which the responsibility for, and the authority over, the compi-

lation of all national statistics is vested in a single central statistical organisation, providing advantage of economy in tabulation and other equipment, the wider utilisation of highly specialised technical personnel, a high degree of co-ordination of programmes and methods and careful liaison with the numerous agencies and interests which have need for statistical information. One defect of this type of statistical system is that it may not have staff adequately trained in the technical aspects of various departments. A statistical system may be decentralised according to subjects with or without central control or co-ordination. A statistical system with central control is always preferable because it has got definite advantages.

2. STATISTICAL SYSTEM IN INDIA

With a background of functional norms ascribed to a national statistical system discussed above, we are now in a position to understand the system existing in our country. The need for systematic collection and compilation of statistical data was realised in India initially at the outbreak of World War 1939, arising largely out of the necessities in connection with military and allied civil activity. Prior to this, to quote Bowley and Robertson who submitted their recommendations in 1935, 'though in some branches some work is being done and determined efforts made to improve the accuracy and scope of information, in others they are unnecessarily diffused, gravely inexact, incomplete or misleading, while in many important fields general information is almost completely absent'. Great changes have taken place in collection of official statistics and their presentation since then, particularly after the Independence which gave further impetus towards the development of a statistical system in India. The urgency for a coherent and comprehensive statistical system became all the more evident with the formulation of the Five Year Plans both for policy making as well as for evaluating the success of the plan programmes. The co-ordination work taken up by international organisations during this period in the field of official statistics provided further encouragement for the growth of statistical activities in India. In the process of development the nature and structure of the statistical organisation closely followed the Constitution of India according to which the responsibility of collection of statistics is shared by the Centre and the State on the basis of three-fold classification of subject matter. Subjects like foreign trade, banking and currency, population, etc. are exclusively allocated to the Centre. The States are primarily responsible for items like agriculture, education. There are other items like industry where both Centre and State operate simultaneously to meet their respective requirements. Although there is a clear

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demarcation of responsibilities, in actual practice the Centre generally exercises some control even over the State subjects mainly with a view to co-ordinating and standardising the organisational set-up, the work programmes and the statistical publications including the conceptual frame-work. The Central Statistical Organisation (C.S.O.) set-up in 1951 as an attached office of Cabinet Secretariat of the Government of India has been serving as a co-ordinating and advisory body. A department of statistics in the Cabinet Secretariat has since been set-up in 1961 which with the help of C.S.O. is entrusted with the responsibility of co-ordinating the statistical activities of various Governmental departments and helping them in the collection of information. With such a set-up in addition to the Statistical Adviser to the Cabinet the statistical services in India are now on solid foundation.

3. STATISTICAL ORGANISATION AT THE CENTRE

3.1 The various statistical organisations at the Centre, mostly located as Units in the Ministries in the Government of India for covering their respective subjects, can be broadly divided into the following classes :

- (i) Those processing data coming as by-products of administration.
- (ii) Those associated with Central agencies.
- (iii) Specially set-up for collection and compilation of data.
- (iv) Research objection.
- (v) Those for National Sample Survey and
- (vi) Central Statistical Organisation.

3.2 Under the category (i) *i.e.*, organisations processing data coming as by-products of administration, typical examples are the statistical offices of the Central Board of Direct Taxes, Railways, Posts and Telegraphs and the Directorate General of Supplies and Disposals.

3.3 The important organisations in the category (ii), *i.e.* those associated with control agencies, are offices of Textile Commissioner and Iron and Steel Controller which maintain well organised statistical branches.

3.4 A notable example under the category (iii) *i.e.*, those specially set-up for collection and compilation of data is the office of the Registrar General which is responsible for the conduct of decennial census of population as well as maintaining comprehensive population statistics and improvement of vital statistics. The Directorate General of Commercial Intelligence and Statistics primarily responsible for trade statistics of all kinds, is a second example in this category. The Industrial Statistical Wing of the Central Statistical Organisation, responsible for Annual Survey of Industries, monthly production statistics of selected industries and preparation of a monthly index of industrial production, the Labour Bureau entrusted with the collection and dissemination of labour statistics and intelligence including the publication of Cost of Living Indices of selected cities in India on the basis of family budget enquiries and Directorate of Economics and Statistics, Ministry of

Food and Agriculture looking after integration of available information in the field of agricultural economics and statistics, are the other statistical organisations which could be classified under this category.

3.5 The most important organisation in category (iv)—Research—is the Indian Statistical Institute, Calcutta, a non-official organization responsible both for imparting training on statistical methods as well as conducting studies in the field of statistics, and advising Government of India in designing and planning of National Sample Survey and also undertaking scrutiny and tabulation of completed schedules. The Statistical Division of the Indian Council of Agricultural Research (Institute of Agricultural Research and Statistics) offers research facilities in agricultural statistics and also develops methodology for the collection of statistics relating to agriculture and animal husbandry. The Research Department of Reserve Bank of India, Forest Research Institute are other examples classified in this category.

3.6 The National Sample Survey, set-up originally in the Ministry of Finance and since transferred to Cabinet Secretariat in 1957, is entrusted with the task of collecting data relating to various aspects of national economy on a continuing basis through scientifically designed and integrated sample surveys. The All-India Agricultural Labour Enquiry in the Ministry of Labour and Rural Credit Survey of the Reserve Bank of India are notable instances of sampling organisations set-up from time to time on *ad hoc* basis.

3.7 The Central Statistical Organisation was set up in 1951. Its principal responsibilities are :—

- (i) Co-ordination of statistical activities at the Centre and the State.
- (ii) Advisory work relating to statistical matters.
- (iii) To serve as a channel of communication with the United Nations Statistical Commission and other International Statistical agencies.
- (iv) Graphical presentation of economic and social statistics.
- (v) To undertake statistical work relating to planning.
- (vi) To prepare estimates of national income.

Before proceeding further, the manner in which co-ordination is achieved between the Central Statistical Organisation on the one hand and the statistical units in Central Ministries on the other will be illustrated. For the sake of convenience the case in respect of the statistical schemes related to housing proposed in the Fourth Five Year Plan incited.

4. CO-ORDINATION PROCEDURE—CASE OF NATIONAL BUILDINGS ORGANISATION

4.1 A sub-group on Housing Statistics for Fourth Plan was set up by the Ministry of Works and Housing to review the available statistics on housing stock, housing conditions, housing investment and gaps in statistics required for the formulation of the housing programmes. The sub-

group has made recommendation under the following eight broad heads of housing statistics for implementation in the Fourth Plan :

- (i) housing stock in quantitative, qualitative and locational terms;
- (ii) current housing construction activity;
- (iii) production and consumption of building materials;
- (iv) prices of building materials;
- (v) employment in building and housing activity;
- (vi) wages of different categories of building labour;
- (vii) housing finance and investment; and
- (viii) associated statistics in other fields.

4.2. On the basis of the above recommendations 26 schemes were suggested for inclusion in Fourth Plan. Of these, 4 schemes have been proposed for implementation by National Buildings Organisation; 2 by the Registrar General, of India; one each by Director General Employment and Training and Ministry of Finance; 7 by National Sample Survey and 11 by the State Governments and Union Territories. The State Government schemes were also mostly suggested by the National Buildings Organisation for filling the Statistical gaps and improving quality of data. Working papers of all these schemes were discussed in a conference sponsored by the Planning Commission, Statistics and Surveys Division (Planning Division of the C.S.O.) which is the principal co-ordinating agency in respect of plan schemes. The conference was held to consider which of the proposed schemes were to be included in the Fourth Plan and also to indicate the relative priorities among the schemes. Many of the schemes were sponsored by the National Buildings Organisation but were to be operated by the other Ministries and States. The concurrence of the concerned Ministries was therefore necessary along-with steps for transferring the schemes to the plans of the operating schemes. Before implementation it is also considered desirable to get clearance of the Central Statistical Organisation regarding the technical aspects of the schemes. A brief account of the principal statistical publications brought out by the Central level agencies is given in the Appendix.

5. STATISTICAL ORGANISATION AT THE STATE LEVEL

5.1 Statistical organisations in the States are of more recent origin than their counter-parts at the Centre. Before Independence there was hardly any organisations which produced data of any kind beyond what was basically necessary for collection of revenue. As per recommendations, of the Gregory Committee in 1946, and subsequently those of the Joint Conference of Central and State Statistician held annually since 1951, State Statistical Bureaus have been set-up in all the States having the following responsibilities :—

- (i) co-ordinating statistics collected by different departments at the State-level;
- (ii) publication of annual Statistical Abstracts;

- (iii) organizing special enquiries and surveys;
- (iv) liaison between statistical organisation of the Centre and other States; and
- (v) Statistical work relating to planning.

5.2. With the tempo of plan activities increasing more and more, assistance has been received from the Centre for strengthening the State Statistical Organisations in respect of Sample Survey, Planning, Estimation of State Income, Setting-up of District Statistical Machinery, Compilation of C.D. & N.E.S. Statistics, Training of Statistical Personnel, etc. In recent years many of the State Statistical Bureaus have joined the collaboration programme of the National Sample Survey for conducting multi-purpose survey on a matching and continuing basis. Creation of Vital Statistics Division for improvement of Vital Statistics sponsored at the Central level by the Registrar General, India is another recent introduction. Man-power Planning, Demographic Studies, Evaluation of Plan Programmes are the other fields in which the State Bureaus are gradually extending their activities. During the Third Plan many of the State Bureaus were equipped with mechanical tabulation units primarily for handling National Sample Survey tabulation.

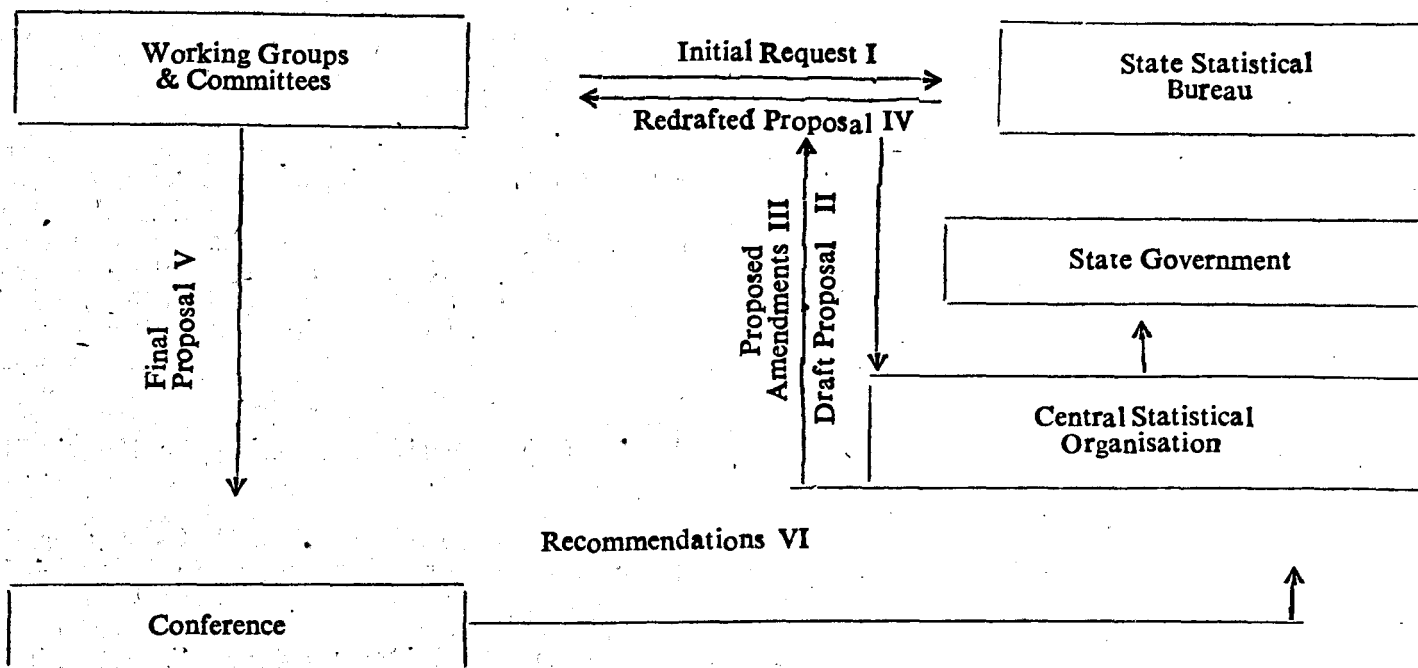
5.3 It is certain that during the Fourth Plan the State Statistical Bureaus will have to expand their set-up and activities considerably depending upon available resources in view of the increasing trend of the Centrally sponsored schemes being passed on to the State Bureaus for planning and execution. Such a trend has been necessitated as a result of the rapidly growing statistical activities in the country and the difficulties increasingly experienced by the central agencies to handle the work at their own level. This is a healthy sign which will ultimately be beneficial for the cause of statistical development in India. But in order that such arrangements become successful, the State Statistical Bureaus should be provided adequate resources in respect of Finance, material and trained manpower. Minimum of administrative control specially in respect of allocated resources by both the Central sponsoring agencies and the State Finance Department, is another important pre-requisite for satisfactory progress of work at the State level. While the State Statistical Bureaus is expected to function at the State level in the same fashion as its Central counter-part (the Central Statistical Organisation), some of the State Departments have created their own statistical cells parallel to the Statistical Units in the Central Ministries. Thus the set-up and the functional expectations at the State level have some similarity with the Central Organisations. But there is a serious limitation in the statistical system in some of the States in so far as statistical co-ordination is concerned, which is the primary responsibility of the State Statistical Bureau. The Central Statistical Organisation enjoys all the controlling powers both in matters of finance allocation as well as technical scrutiny of the statistical schemes proposed by the various Central statistical agencies and the States. Such powers, unfortunately, have not been vested with the State Statistical Bureaus with the result that it has hardly any control over the functioning of the statistical cells operating in the other State Departments. In absence of such a control the District Statistical Offices have also to face lack of proper co-operation from district level officers

belonging to other departments. Frequently, there is over-lapping and duplication of work since the schemes proposed at various levels could not be subjected to Central scrutiny. Moreover, the technical soundness of the schemes proposed does not in many cases attain the desired standard. In order to obviate these difficulties, it is absolutely essential that the Directors of the Statistical Bureaus at the State level should be empowered to control all the statistical activities in the State.

In short, a State Statistical Service developed on a uniform pattern headed by the Director of the State Bureau would be essential in solving this problem.

5.4 At this stage it would be proper to indicate the manner in which the co-ordination is effected in regard to formulation of statistical schemes. This can best be illustrated with the help of the chart given below:—

Channels of statistical coordination in the formulation and implementation of a State level Statistical Scheme



It is seen from the above chart that on the basis of the recommendation of the working groups and committees on the development of a statistical scheme, the State Statistical Bureau prepares the draft proposal and submits it to the Central Statistical Organisation for technical scrutiny. The Central Statistical Organisation sends the proposed amendments which are taken into account in preparing the redrafted proposals before sending them to the Working Group/Committee again for examination. The Working Group/Committee, in its turn scrutinizes the revised proposals and sends its final proposals to the conference convened by the Statistical Wing of the Planning Commission. The recommendations of this conference are finally conveyed to the Central Statistical Organisation as well as the State Governments for implementation. However, it is again emphasised that so far as schemes prepared by the Statistical Cells in the State Departments are concerned, the State Statistical Bureaus are not generally consulted.

6. STATISTICAL SYSTEMS IN DEVELOPING COUNTRIES

In conclusion, the statistical system prevailing in some of the developing countries is described. In view of paucity of information and also to out short a lengthy discourse, the principal features of national statistical system in Brazil, Ceylon, Egypt, Thailand and Israel will be highlighted.

6.1 Brazil—The Brazilian Institute of Geography and Statistics was created in 1934 to co-ordinate the statistical activities. At the State Government

level there are statistical departments which, from technical point of view, are subordinate to the Institute of Geography and Statistics. The National Council of Statistics is composed of federal and regional organisations. The Central and Regional Executive Boards are the two organs of the National Council of Statistics through which decisions are formulated and implemented.

6.2 Ceylon—The statistical activities are undertaken through the two wings of the Department of Census and Statistics, namely the Census Wing and the Statistics Wing. Population, Agriculture, other census and surveys are the responsibilities of the Census Wing. On the other hand, Agriculture (Land Records), Transport, Industries, Employment, Economic & Social Surveys, Finance, Social Statistics, Trade Statistics, Cost of Living and Price Indices, Mathematical Statistics and Miscellaneous are the subjects being looked after by the Statistics Wing.

6.3 Egypt—Egypt has a centralised statistics system under a Statistical Department which is divided into two main branches—General Statistical Division and the Economic and Agricultural Division. Officials have been placed in every Government Department and in every province to facilitate the regular collection of the statistical data needed by the Department.

6.4 Thailand—At present, most of the statistical activities are highly centralized and carried out by the new Central Statistical Office of the National Economic Council through the recent enactment of the 1952 Statistics Act. By virtue of this Act, the Director of the Government Statistical Service has been appointed to be the head of the

Central Statistical Office. The National Economic Council has established a Statistical Commission consisting of the Chairman and Vice-Chairman appointed by the Council from its own members and of other members who are representative of other Ministries together with the Director of Central Statistical Office to supervise statistical affairs in accordance with the recommendations of the Council.

6.5 **Israel**—In 1948 the Central Bureau of Statistics was created. Although a central system of statistics has been set up, responsibility for statistics, needed mainly for internal administration and collection of material, obtained by their own agencies, is left to the Ministries and agencies concerned with collaboration from the Bureau. In addition to the above, the Economic Research Unit, formerly of the Prime Minister's Office, has

been temporarily, at least, merged with the Central Bureau.

6.6 Thus, it is seen from the above discussion that as in India, in most of the developing countries the statistical planning and policy making is almost universally centralized. But for execution of policies, the responsibility is decentralised and is accomplished through subordinate state level offices in collaboration with Central Organisation, which is the principal co-ordinating agent. It is also discernible that much importance has been laid upon co-ordination between the Central and the State Organisations but little attention is given to the problem of co-ordination of statistical activities within the State jurisdiction. Until and unless this aspect of the problem is carefully reviewed by the National Governments, the success of the statistical system is bound to remain only partial.

APPENDIX

Name of Publication and Periodicity (Annual -A, Quarterly-Q, Monthly-M and Weekly-W)	Agency responsible for bringing out the publication.
(a) Statistical Abstract of India (A); Statistical Hand Book of the Indian Union (A); Estimates of National Income (A); Basic Statistics relating to Indian Economy (A); Sample Survey of Current Interest (A); Report of the Meeting of the Technical Advisory Council on Statistics (A); Monthly Abstract of Statistics (M); Weekly Supplement to the Monthly Abstract of Statistics (W).	Central Statistical Organisation, Delhi.
(b) Annual Survey of Industries (A); Monthly Statistics of the Production of Selected Industries in India (M); Index of Industrial Production (M).	Industrial Statistics Wing of the Central Statistical Organisation, Calcutta.
(c) National Sample Survey Reports (Roundwise)	National Sample Survey, Delhi.
(d) Monthly Statistics of the Foreign Trade of India Vol. I (Exports and Re-exports) and Vol. II (Imports) (M); Accounts relating to the Inland (Rail and River Borne) Trade of India (Q).	Department of Commercial Intelligence and Statistics, Calcutta.
(e) Index Number of Wholesale Prices in India (W)	Office of the Economic Adviser, Delhi.
(f) Quarterly and Annual Blue Book on Joint Stock Companies in India	Research and Statistics Division, Deptt. of Company Law Administration, Delhi.
(g) Annual Statistical Bulletin (A); Indian Textile Bulletin (M)	Textile Commissioner, Bombay.
(h) Education in India Vol. I & II (A); Education in the States (A); Education in Universities in India (A).	Ministry of Education.
(i) University Development in India (A)	University Grants Commission.
(k) Monthly Statistical Bulletin (i) on Central Excise (A) (ii) on Customs (A); Central Govt. Revenue Statistics (M); Central Excise Statistics (Q); Statistical Year Book (A); Review of Customs Administration in India (A).	Ministry of Finance.
(l) All-India Income Tax Revenue Statistics (A)	Statistical Branch Directorate of Inspection, Delhi.
(m) Reserve Bank of India Bulletin (M); Review of Co-operative Movement in India (A); Report of Currency and Finance (A); Statistical Tables relating to Banks in India (A).	Reserve Bank of India.
(n) Estimates of Area and Production of Principal Crops in India (A); Indian Agriculture in Brief (A); Indian Livestock Statistics (A); Indian Livestock Census Vol. I+II Quinquennial; Agricultural Prices in India (A); Agricultural Situation in India (M); Agricultural Wages in India (A); Abstract of Agricultural Statistics, India (A); Economic Survey of India, Agriculture (A); Bulletin of Agricultural Prices (W).	Directorate of Economics & Statistics, Ministry of Food & Agriculture.
(p) Health Statistics of India (A)	Statistical Bureau, Directorate General of Health Services.
(q) Vital Statistics of India (A); Indian Population Bulletin (Half Yearly); Census Reports (Decennial).	Registrar General, India.

- (r) Public Electricity Supply—All-India Statistics (A); Electricity General & Sales Data on All-India Basis (A). Statistical Wing, Central Water and Power Commission, Simla.
- (s) Indian Labour Year Book (A); Trade Union in India (A); Indian Labour Statistics (A); List of Trade Unions in India (A); Indian Labour Journal (M). Labour Bureau, Simla.
- (t) Census of Central Government Employees (A) Directorate General, Employment and Training.
- (u) Annual Report of the Chief Inspector of Mines (A); Indian Coal Statistics (A); Monthly Coal Bulletin (M). Office of the Chief Inspector of Mines, Dhanbad.
- (v) Minerals Year Book (A); Statistical Summary of Mineral Production (M) Indian Bureau of Mines, Nagpur.
- (w) Indian Railways (A); Monthly Railway Statistics (A) Ministry of Railways.
- (x) Basic Road Statistics of India (A). Ministry of Transport & Communications.
- (y) Indian Daily, Weekly and Monthly Weather Report; Indian Weather Review (A); Daily and Monthly Rainfall of India (A). Indian Meteorological Deptt, Poona.
- (z) Indian Tourist Statistics (A) Department of Tourism.
- (a1) Hand Book of Civil Aviation Statistics (A); Basic Statistics of Civil Aviation in India (A). Directorate of Air Transport, Office of the Director General, Civil Aviation.
- (b1) Annual Report of the Activities of the Posts & Telegraphs Department (A). Directorate General of Posts & Telegraphs.
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Statistics Required for the Formulation of Housing Programmes — Gaps in Them and the Suggestions for Filling the Gaps***

by

Shri S. N. Narang†

1. SCOPE OF HOUSING STATISTICS

1.1 Integration of housing programmes with the social and economic development plans is now a well-recognised programming technique. In the process, firstly, the *volume of housing need* and *effective demand* are determined through a complex of various measurable and non-measurable socio-economic variables; secondly, a large number of materials are required to be assembled to build houses and therefore production and demand statistics in respect of these materials are also required; thirdly, a sizeable manpower and its distribution, both on-site and off-site, takes a dynamic shape and on this aspect also, data are required. Hence, for the formulation, preparation and execution of housing programmes a large amount of data and statistical series depicting various aspects of housing are needed. A summary account of data required is given in Appendix.

1.2 Basic data for development of these series might relate to various fields, such as, demography, economics, finance, investment, etc. Though all these statistics cannot be always classified as housing statistics; nevertheless, a large number of them are essential for housing programming. As such, when gaps in housing statistics are considered, gaps in the allied statistics have also to be taken account of and steps are required to be taken to fill such gaps simultaneously with those statistics directly belonging to the field of housing. Principal heads of data which are usually classified under housing and building statistics are: (a) Statistics of housing stock and its quantitative, qualitative and locational characteristics; (b) Statistics of current building activity—additions to housing stock in physical and financial terms, changes in housing stock by conversions, alterations, etc.; investments made therein. (c) Statistics of production, consumption and trade of different building materials; (d) Statistics of employment in housing and building industry; (e) Statistics of Wages of different categories of building labour; (f) Statistics of prices of building materials; (g) Statistics relating to housing finance and investments—various terms of financing of housing, amortisation periods for housing loans, rates of interest, rent-levels, etc.; and (h) Consumer preferences.

1.3 Besides the main heads of statistical data, which are not usually classified as housing statistics but are very closely related to it may be included (a) Data relating to the economic significance of housing and buildings and their assessment in macro-terms (*i.e.* in terms of national income

data); (b) Data in respect of geographical aspects of housing and building programmes in relation to processes of industrialisation and urbanisation; (c) Demographic data required in relation to residential and non-residential building constructions; (d) Evaluation of housing needs based on size and composition of households, rate of family formation, rural-urban migrations, vacancy reserve, rates of obsolescence and depreciation, etc. Distribution of household by size and income and their rent-paying capacity; (f) Estimation of the capacity of the construction sector, depending upon the supply of building labour, contracting firms and their financial resources, supply of building machinery, pre-fabrication and building materials industries capacities, etc. (g) Sources and methods of housing and building finance and the presence or absence of institutional agencies and the volume and terms of their financing.

2. AVAILABILITY AND GAPS TO DETERMINE HOUSING SITUATION

2.1 **Housing Stock**—The data regarding quantity and quality of available housing accommodation in a country, at a point of time, are referred to as statistics of 'housing stock'. Information on housing stock essential for evaluating the present housing conditions and for assessing the present and future requirements of housing relate to the geographical distribution of housing units, their classification by type and size, facilities available therein for living (*e.g.* water supply, toilet installations, etc.), overcrowding as measured by the number of rooms per household or floor space per household, etc. In addition, it is essential to know the structural characteristics and condition of housing (*e.g.* whether dilapidated or not), age distribution, life expectancy of the housing stock, neighbourhood environments, etc.

2.2 In India, the surveys conducted by the National Sample Survey about housing conditions provide useful though limited information as regards various living facilities to households. The NSS data, however, do not provide sufficient information about the distribution of housing units by the characters mentioned in the foregoing para. In some measure the data collected in '1960 house-listing' on the eve of 1961 Population Census would throw out data on housing. The All India Tables proposed to be prepared out of the '1960 house-listing' will still leave many gaps in our information on Housing.

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2.3 Suggestions for Filling up the Gaps—A complete count about the housing stock can be had by a full-fledged housing census conducted independently or alongwith population census. It could be possible to limit housing census only to certain basic items and get detailed information about housing units by some large scale survey/surveys on housing. The decision to employ housing census or surveys or both, can, however be taken after taking into consideration budgetary and manpower limitations. This primarily concerns about the collection of information at national level or at state level. However, when a micro-plan is to be formulated for execution, say, for a slum clearance or for a town plan, more detailed information about the existing housing stock is necessarily called for.

2.4 Statistics of Current Building Activity

2.4.1 The main purpose of current housing statistics is the provision of data for measuring the changes in housing stock as evaluated by housing census and surveys. At the same time these statistics are also vital for evaluating future housing requirements, the status of building industry, the inputs in housing in the shape of money, labour and materials, change taking place in housing levels of living and for purposes of determining the economic significance of housing. The main heads of data under this head can, therefore, be : (i) new dwellings constructed during different periods of time, (ii) addition or subtraction in number of dwellings as a result of conversions, alterations and additions, (iii) distribution of the new units by size and type, (iv) availability of living facilities in their units, (v) value of work done, etc.

2.4.2 All statistics of the above variety have been conspicuous by their non-availability, though some data in respect of dwellings constructed under housing schemes, such as subsidised Industrial Housing Scheme, Low and Middle Income Group Housing Schemes, etc. are available. The later data also, at present provide data only about total number which has come up and the expenditure incurred etc.; there is no reliable information about the houses coming up under these schemes both in public and private sectors. Again, in spite of the fact that in the public sector data in respect of housing and other building construction exist as a part of administrative records, these are usually not processed or coordinated as statistics amenable to statistical treatment and significance.

2.4.3 Suggestions for filling up the gaps in current statistics—A very important development has recently taken place in this direction with the issue of the Circular letter by the Ministry of W.H.& R. to State Governments, Central Construction Agencies, Union Administrations about arrangements to be made for the collection of housing and building statistics. When the data start flowing through the Statistical machinery set in motion, it will be possible to get information regarding additions in housing and building stock in both public and private sectors with the limitations that data of public sector in the beginning will be limited to constructions of Rs. 20,000/- and above and in the case of private sector to constructions in urban areas of population with 1,00,000 or more. In case of public sector, information about value of work done will also be gathered and attempt

will be made to do so for the private sector also. In case of private sector, however, it might perhaps be necessary to conduct follow up sample surveys to estimate the value of construction 'put-in-place' in a period of time and also to determine the time-lag in authorisation of building projects and its start. The latter information will be useful for studying the capacity of building sector in respect of its potential to bear additional burden of housing construction and the volume of demand generated as a chain reaction for building materials and labour.

2.4.4 These arrangements, however, do not envisage the collection of data about various services and other facilities provided within the newly built constructions. Since the building bye-laws usually make it incumbent on the builders to provide such facilities, it is not difficult to collect such data regarding new constructions regularly on the existing proforma after working-out necessary modifications. Till such time it is not put in the proforma, it would be desirable to conduct regular periodic sample surveys of housing in respect of such services. Also housing surveys can be carried out to watch the changes that take place in respect of over-crowding and consequent shortage of accommodation which add to doubling up families causing pressures on living facilities creating conditions much below the accepted standards. In addition, there might also be gaps in the data pertaining to losses in housing inventory due to obsolescence, slum clearance, etc. and these can be estimated by undertaking special studies/surveys.

2.5 Statistics of Production, Consumption and Trade of Different Building Materials

2.5.1 Statistics of production of building materials duly adjusted for imports and exports signify the total availability of those materials in a country. Whether or not availability of materials at a particular point of time shows disequilibria and to find answers to such questions a possible way is to determine various norms of consumption of building materials in relation to investment placed or space-area so created and these can be arrived by collecting various types of statistical data and by analysing them.

2.5.2 In India, statistics of production of building materials are available for materials produced through organised sector of industry, e.g., cement, steel, sanitarywares, sheet glass, etc., but statistics pertaining to unorganised sector, e.g., bricks, lime, sawn timber, etc., are not available. There is however no organised information available about various materials used in building industry and their breakdowns for the residential and non-residential building sectors. The statistics of import and export of a few building materials are available but it is difficult to determine the breakdowns of the portions of the imported material going into various types of residential and non-residential building constructions. The statistics of movements of materials in the country by road are neither available nor are they organised. No norms of consumption of building materials—even that for key building materials are available or can be worked out with satisfactory results in the absence of regular flow of accurate data for different types and structures of building complexes both residential and non-residential.

2.5.3 Suggestions for filling the gaps in the Statistics of production, consumption and trade of building materials: The gaps in the statistical information relating to production and availability of building materials (as adjusted after taking account of imports and exports) as well as norms of demand for building materials prove baneful for proper materials budgeting. Large distances involved in a country of the size of India, call for advance planning for the production of building materials not only on national levels but also on regional levels and perhaps still at lower levels. With the present stage of the unorganized building materials the only course open for estimation of production is to conduct sample survey and to this end, the scheme for the survey of production of building materials like bricks, lime and sawn timber included in the Third Plan. Statistical Schemes need to be given highest priority. In order to know correct and up-to-date position over future, survey at regular intervals will therefore be necessary.

2.5.4 The estimation of consumption of building materials, particularly, in house construction is a complex phenomenon and is also no less so as regards other buildings as well. It is not feasible to collect actual consumption figures in case of each and every house constructed in the country and from them to build the global figure. Reliance has, therefore, to be placed on the consumption norms of building materials in relating to investment volume in housing or a complex of building and to build, therefrom, the total demand volume. However, the variables involved are too many. The building practices vary from region to region depending on various factors, such as, climate, availability of materials, etc. There is, therefore, an urgent need for initiating studies in this direction at different levels. It is a field where the engineers, economists, and statisticians should put their heads together. Some work has no doubt been done in this direction but this has to be broadened and more emphasis laid on this type of work. Such special studies, however, will not, in any case, be substitutes for sample surveys to be undertaken by National Sample Survey and those currently being undertaken by the Reserve Bank of India to estimate value of construction undertaken and materials consumed in rural areas and in some cases in urban areas.

Special studies have to continue, in any case, and they should be supplements to those done by the NSS and Reserve Bank of India. Special surveys and studies are also essential to set up statistical series about the transport of building materials by road and rail.

2.6 Statistics of Employment in Housing and Building Industry

2.6.1 Data are essential for proper planning of workers of different categories who are to construct the houses and other buildings and to ensure that the housing and building programmes are not handicapped because bottlenecks in the supply of skilled and unskilled labour especially the former. The data are not available for assessing these requirements.

2.6.2 Suggestions to Fill in Gaps:

In the first instance, there is immediate need to undertake studies for establishing norms of employment of different categories in relation to the

investments made in a complex of buildings. The present position of the building industry does not permit the collection of direct data of employment from the builders. The State Statistical Bureaus could play an important role in the development of these norms by initiating some type-studies.

2.7 Prices of Building Materials and Wage of Building Labour

2.7.1 The important components of building cost are the costs of building materials and the building labour. Therefore, the study of the prices of the former and the wages of the latter is necessary for purposes of planning of distribution and marketing of building materials and for fixing the wages of the building labour because they, in turn, determine the levels of economic and social rent and the volume of subsidies and the need for their revisions with respective variations.

2.7.2 Data about whole-sale prices of selected building materials are available from important markets in the country on a weekly basis. But the data about retail prices of these materials from these centres are not well-organised though these are very essential for studying regional variations in the building costs. Regular data about wages of building labour are also not available.

2.7.3 Suggestion for filling the gaps in Statistics of building prices and wages of building labour:

- (i) The scheme recently put in motion for collection of current statistics referred to earlier in paras 2.4.1 to 2.4.4 also envisages collection of statistics of wages and prices in the building sector.
- (ii) The study of building costs is, however, conveniently and best made by preparing building cost indices. Frequent variations in building cost from place to place and over time following changes in specifications of buildings, necessitate preparation of building cost indices for different categories of buildings and for different regions. To build up these indices, it is essential to develop weighting diagrams and to that effect in different regions for various types of buildings. Special type studies have to be undertaken for this purpose. The State Statistical Bureaus can play an important role in this field. Some are known to have already initiated some action in this regard and such studies when undertaken with scrutiny and care can prove useful.

2.8 Housing Finance and Investment, etc.

2.8.1 The statistics of financing of housing have been collected on sample basis by the National Sample Survey and the Reserve Bank of India (in the Rural Credit Survey and its follow up surveys). However, it is not certain if the data collected by the NSS have been tabulated. For the development of new methods of real estate financing and developing of a sound mortgage market in the real estate market it is desirable to have detailed information on this aspect of housing. It is equally important to gather data as regards terms, conditions, duration of loans, rate of interest at which loan finance is obtained by the house-builders to finance house construction and also the extent to

which down payments are to be mobilised for ownership housing. Various institutional systems of financing, that are slowly developing in the country through Life Insurance Corporation, Government loans, Housing Co-operative Societies and their Central Financing Institutions also need to be qualified in an organised way on a regular basis. Information about rent paid by selected households has been collected as part of housing conditions surveys of new consumer price indices for urban working class and middle class population; the Government of India has recently initiated half-yearly surveys on house rent. With these surveys, there will perhaps be lesser gap in data relating to house rents.

2.8.2 Suggestions to fill up the gap—The NSS survey should give greater emphasis to get data about financing of house construction and rates of interest and assign priority to its tabulation. In this direction capital market units—specially, joint stock banks, co-operative banks, Life Insurance Corporation and the Central and State Governments may be asked to regularly supply the data.

2.9 Data about Consumer Preferences

2.9.1 With the passage of time changes in the consumption pattern are bound to take place as a result of rise in incomes, educational levels and the impact of industrialisation and urbanisation. These factors materially affect the likes or dislikes of the households with respect to the designs of the dwellings which have their bearings on the cost factor. But at present the data on this aspect of housing are lacking. A survey on the dwelling habits of the occupancy of two-roomed residences in the Government sector in New Delhi by the National Sample Survey at the instance of the N.B.O. is an illustration of a study of this nature. The final tabulations are, however, still awaited from the Indian Statistical Institute.

2.9.2 Suggestions to fill in the gaps—The data on consumer preferences can be collected by specially designed sample surveys. It would be proper to give highest priority to the conducting of dwelling habit surveys by the NSS similar to the one mentioned above which have also been included as one of the Third Five Year Plan Statistical Schemes.

3.1 Economic Significance of Housing

3.1.1 Assessment of the significance of the housing sector in the economy as a whole is essential to get an idea of the repercussions which expended housing construction are likely to have on the economy and to evaluate the economic feasibility of the housing plans in relation to global economic plans. The data required to obtain a picture of the economic consequences of housing programmes are mainly macro-economic in nature and hence a considerable amount of relevant information could be obtained from data of national income accounts. The data relevant to the study of economic significance of housing programmes are: (a) gross domestic product by industrial origin, (b) fixed capital formation and its volume and proportions in construction, building and dwellings, (c) gross domestic expenditure; (d) expenditure on dwelling constructions; (e) consumer expenditure on rent; and (f) economic aspects of ownership of dwellings. As mentioned in earlier paras the basic data on housing statistics are not available in

India and as such the information on macro-economic relationship in terms of national income data are also practically not available and whatever preliminary studies that might have been attempted earlier, are of limited value.

3.1.2 Suggestions for Filling the Gaps

Improvement in the national accounts is linked with the general improvement in housing and building statistics. As such, the suggestions made under different heads apply equally for these also.

3.2 Data in Respect of Geographical Aspects of Housing and Building Programmes

3.2.1 Calculation on the housing needs must not only be on the national level on the basis of macro-data but their assessment should also be according to certain geographical areas. For example, the knowledge about the urbanisation rates can help in estimating housing requirements for urban and rural areas separately. Also, it is necessary to have data separately for major cities as the demographic growth rates, location of investment projects, economic activity, etc. differ in these cities as compared to the over-all urban variables. To meet the needs of 'Town Planning' within the cities itself, it is useful to have data in respect of different city wards and districts. Geographically, classification about such data can be made as: (a) urban and rural distribution of population; (b) regional distribution of population; (c) in respect of major cities and wards in them.

3.3 Demographic data Required for Housing Programming

3.3.1 It is widely accepted that demographic data and analysis are among the essential materials needed for policy making and planning in the social and economic fields. It is especially true in case of planning for housing because it is ultimately the population as constituted into households, which has to be provided with adequate shelter. Thus, the growth and structure of population, the size and composition of households, the rate of family formations, the life cycle of families, vital statistics and internal migration, especially rural, urban are influential factors in determining housing needs and future housing requirements. Basic data (for examining these factors) are no doubt available to some extent from the census records, and other records relating to vital statistics. However, there exists, scope for improvement in reporting statistics of birth, death, migrations, the rate of family formation, etc. for estimating the housing requirements.

3.3.2 Suggestions for filling the gap—Perhaps the greatest need in this field is to realise the importance of the various demographic data for programming of housing and for that it is incumbent to institute special studies and surveys for developing the necessary statistical series. Some such studies may be listed as: (1) examining the trends in the number and composition of the households and their relation to the growth and structure of population; and (2) studying the data which population census may provide on the classification of existing households by the size and composition. Such data may be used for estimating the frequency of doubling up of families in shared living quarters; (3) projection of number of households; (4) life cycle of families, etc.

3.4 Evaluation of Housing Needs

3.4.1 Estimation of housing needs at a future date is first determined by assessing the present requirements and the deficits in present housing supply and afterwards to take cognizance of the number of households which will be formed. Necessary account is also to be taken of housing needs caused by: (1) replacement (2) depreciation and obsolescence (3) vacancy reserve of dwelling which should be normally provided. The potential of household formation is determined on the basis of the likely future annual rate of growth of population and households, the probable changes in the size and composition of households, changes in the proportions of the 'ever-married' female population and also due to the population shifts caused by internal migrations. The provision of a vacancy reserve enables normal functioning of the real estate market according to the life time of the houses and also in accordance with the rising standards of living of the population.

3.5 Rent Paying Capacity of Households

3.5.1 The success of housing programme ultimately depends on the ability of the population either to purchase or rent the dwellings constructed. Hence the financial aspects of housing are determined not only on the investment required for the construction of dwellings but also on the ability of the population to pay for the occupancy of new dwellings. It seems essential, therefore, that statistics be obtained to estimate as accurately as possible; (a) the distribution of households by income groups; and (b) the proportion of income that can be devoted to housing by different income-groups and for that as far as possible data should be obtained on income and consumption patterns of the important sections of the population. These may include population groups, distinguished by income classes, social and economic characteristics, national groups, urban and rural sectors, household or family types and geographical areas. These data have got to be analysed in the context of interest rates, rent levels, cost of dwellings by type of dwellings, indices of consumer prices and salaries and consumer preferences in regard to housing. Basic data in relation to the above factors are available as a result of rent surveys and other surveys mentioned earlier in para 2.8.1.

3.5.2 *Suggestion for filling up gaps*—Besides the surveys about interest rates, rent levels, income distribution, mentioned above and studies and surveys about consumer preference, some special studies have to be undertaken to determine the rent paying ability in relation to the cost of dwellings. A study* of this nature is at present being done by the Tata Institute of Social Sciences, Bombay, at the instance of the N.B.O. There is wide scope for many more studies of this nature.

3.6 Capacity of the Construction Sector

3.6.1 The satisfaction of the future housing requirements (and for that matter present requirements) is dependent primarily on the resources needed to meet such requirements. Essential resources may be (1) the capacity of building

sector, (2) the supply of materials, labour and financial funds, and (3) to build up administrative machinery and evolve policies which would influence the implementation of the housing programmes. Proper assessment and future capacity of the house building industry requires a detailed analysis of the trends of production and the factors affecting these trends. The data required for this should relate to (a) output by size of dwelling; (b) output by investor and (c) output by type of materials used. Data are also wanted in respect of employment and unemployment of the building materials, etc. Hence to fill in these requirements the data are required in respect of: (a) authorisation, commencement, under construction and completion of the dwellings and buildings; (b) building operations, such as, reconstruction, repairs, conversions, extensions, demolitions, changes, new constructions, size of dwellings; etc. (c) building operations by type of materials, investor; and (d) projections for the building labour force and the training programme to augment supply of skilled labour force.

3.7 Evaluation, Sources and Methods of Housing and Building Finances

The building sector is distinguished by the chief characteristics of its dependence on long-term credit and the long life of the asset formed. To formulate and implement the programmes in this sector, specialized type of (1) credit; (2) institutions; and (3) the methods and technique are called for. The real estate market is one of the very important capital market in any economy and mechanics of its operations requires special knowledge. Such a knowledge in an organised way and historical perspective can be obtained by collecting data on housing finance and investment and other data relating to adjustment and readjustment of various long-term monetary policies in a country, either through fiscal and financial measures by the Government or the monetary measures of the Central Banking institutions.

4. CONCLUSIONS

From the foregoing it is clear that the data available about housing are meagre to meet the requirements of various aspects of housing programming. The serious gaps relate to housing inventory, current statistics of building activity, consumption of building materials, employment of building labour and data relating to study of building costs, methods of financing of housing, consumer preferences and economic significance of housing. Of equal importance is the need for the number of studies mentioned under various heads above. To identify the statistical schemes which should receive high priority in the Fourth Plan, the following may be mentioned:

1. Conducting of a full-fledged Housing Census independently or alongwith the Population Census.
2. Extension of the collection of housing statistics to the urban areas having population of 10,000 and above from the Third Plan limitation of towns having a population of 1 lakh and above.

*A study to determine the gap between 'economic' and 'social rent' for important income groups in the country and hence to determine the degree of Social Cost to State for society as a corollary.

3. Widening the scope of the 'proforma' already put into operation for collecting current statistics so as to include data about various services and other facilities.
4. Housing surveys in respect of over-crowding caused by doubling up of families, and slum clearance.
5. Repetitive type of Sample Surveys of production of building materials like bricks, lime, sawn timber, etc.
6. Special studies in respect of demand volume of building materials in relation to investment volume in housing.
7. Surveys and studies in respect of transport of building materials by road and rail.
8. Special studies for establishing norms of employment of different categories of building labour relations to investments made in the complex of buildings. (This might perhaps be undertaken by the State Statistical Bureaus by initiating some type studies).
9. Collection of retail prices of various buildings as well as wages of the building labour.
10. Preparation of building cost indices at the State levels.
11. Sample Surveys for estimating capacity of the building sector in respect of its potential to bear additional burden of housing construction, supply of building materials and the building labour.
12. Collection of data as regards terms and conditions of loans, duration of loans, rates of interests and the extent of the down payments in relation to the loans advanced by Government, Semi-Government and various institutional agencies.
13. NSS surveys to expand its scope for collecting data about financing housing constructions and according priority to the tabulation of these data.
14. Conducting of Consumer Preference Surveys for the residents in different types of houses.
15. Collection of data which will help in improving the National Accounts Systems and its linking with the data of Gross domestic expenditure, Consumer expenditure on rent, etc.
16. Collection of data which would help in calculating the housing needs at the urban and rural levels, and particularly in the major cities. Such data are urban and rural distribution of population, rate of family formation, size and composition of households, life cycle of families, vital statistics and statistics of internal migration.
17. Statistics relating to replacement demand, depreciation and obsolescence and vacancy reserve.
18. Studies relating to income and expenditure, distribution of different households and their capacities to pay rents and interests on loans, etc.
19. Studies to determine the characteristics of real estate market and the long-term credit in relation to long life of the assets formed and their reorientation in relation to fiscal and financial measures of the Government or the monetary measures of the Central Bank.

APPENDIX

Statistics Required for Formulation and Execution of Housing Programmes and the Method of Their Collection

Aspect of programming and statistical series required	Methods of collection of data
(1)	(2)
1. Appraisal of present housing inventory and conditions	
(a) Number of housing units by type of unit.	1. Census of housing.
(b) Number of private households by size, cross-classified by type of housing unit occupied.	2. Census of population.
(c) Population by type of housing unit occupied.	3. Surveys of housing conditions.
(d) Occupied dwellings by number of rooms.	4. Current housing statistics.
(e) Number of occupants of dwellings by number of rooms.	5. Administrative statistics, such as list of applicants for housing.
(f) Occupied dwellings by type of water supply installation.	6. Permanent housing registers.
(g) Occupied dwellings by type of toilet facilities, urban and rural.	7. Special Studies.
(h) Estimated value of housing inventory.	
2. Evaluation of present housing requirements	
(a) Number of new dwellings constructed in a specified period.	1. Current housing statistics (including permits for building operations).
(b) Number of new households produced in a specified period.	2. Financial statistics (real estate tax, etc).
(c) Number of dwellings lost by demolition, conversion and other reasons.	3. Census of population.
(d) Number of dwellings needed for vacancy reserve.	4. Census of housing.
(e) Number of private households living in unacceptable type of housing unit or without shelter.	5. Survey of housing conditions.
(f) Number of inadequate housing units and number of occupants by type of unit.	6. Permanent housing registers.
(g) Number of doubled-up households.	
(h) Number of sub-standard housing units.	
(i) Over-crowded and under-occupied dwellings by number of occupants.	
3. Building materials	
(a) Statistics on production and price of materials.	1. Statistics of production and trade in building materials.
(b) Statistics on imports and exports of materials.	2. Statistics of prices.
(c) Statistics on construction enterprises.	3. Special studies on imported inputs for dwelling construction.
(d) Statistics on materials and techniques used in past.	4. Economic censuses.
(e) Trade statistics on building materials.	5. Transport Statistics.
(f) Statistics of transport facilities.	

(1)	(2)
4. Evaluation of the capacity of the construction sector	
(a) New dwelling construction (1) authorised (2) begun, (3) in process, and (4) completed.	1. Current housing statistics (including permits for building operations and output of the building industry, etc.)
(b) Building operations by type of operation (reconstruction, repairs, conversions, extensions, demolitions, changes, new construction) and size of dwelling.	2. Census of population.
(c) Building operations by type of operation and type of investor.	3. Economic censuses.
(d) Building operations by type of operation and type of material used.	4. Labour force sample surveys.
(e) Projection of economically active population in construction industry.	
(f) Projection of economically active population in dwelling construction trades, by level of training.	
(g) Use of manpower per unit of production in main construction activities.	
(h) Future balance of labour.	
5. Evaluation of financial resources required	
(a) Estimates of the amount and composition of credit by source.	1. Financial Statistics (current and historical)
(b) Historical series on methods of financing dwelling construction.	2. Systems of national accounts.
(c) Statistics on mortgage loans (including terms, costs, etc.)	3. Banking statistics.
(d) Statistics on flow of funds in relation to investment for dwellings.	
6. Assessment of the economic significance of housing	
(a) Gross domestic products by industrial origin.	1. Systems of national accounts and related tables, and basic statistics for these estimates.
(b) Fixed capital formation (in dwellings).	2. Household surveys of income and expenditure.
(c) Gross domestic expenditure.	3. Statistics of employment (sample household survey and other).
(d) Expenditure on dwelling construction.	
(e) Investment in dwellings.	
(f) Consumer expenditure on rent.	
(g) Economic aspects of ownership of dwellings.	
7. Geographical aspects of the housing programme	
(a) Urban and rural distribution.	1. Special tabulations of results of (i) housing censuses (ii) population censuses, (iii) housing sample surveys and (iv) demographic sample surveys of households.
(b) Regions.	
(c) Major cities (for town planning).	
(d) Districts within cities for town planning.	
(e) Local administrative units.	

(1)

(2)

8. Evaluation of future housing requirements.

- (a) Estimate of the future number of private households by size and composition.
- (b) Estimate of future population by age, sex and marital status.
- (c) Population in private households by structural type and size.
- (d) Estimate of future rates of demolition and conversion and life expectancy of existing housing units.
- (e) Projection of future level of housing conditions.
- (f) Estimate of maintenance and repairs which will be required by the increasing stock.
- (g) Estimated vacancy reserve.

- 1. Census of population.
- 2. Vital Statistics (birth, death, marriage, divorce).
- 3. Life tables.
- 4. Current housing Statistics (including permits for building operations).
- 5. Internal migration statistics.
- 6. Housing inventories and registers.
- 7. Census of housing.
- 8. Surveys of housing conditions.
- 9. Demographic surveys.
- 10. Financial statistics (including real estate tax).

Cost of dwellings (including land, material and labour)

- (a) Estimates and projections of composition of costs of dwellings (input) by type of dwelling.
- (b) Statistics on price of land.
- (c) Statistics on price of building materials.
- (d) Statistics on wages and salaries.

- 1. Statistics of prices.
- 2. Statistics of wages and salaries.
- 3. Statistics on production and trade in building materials.
- 4. Special studies.

Paying capacity of households

- (a) Estimates of distribution of urban and rural households by level of income.
- (b) Composition of household expenditure by characteristics of households.
- (c) Interest rates.
- (d) Levels of rent.
- (e) Cost of dwellings by type of dwellings.
- (f) Indexes of consumer prices and salaries.
- (g) Consumer preference in regard to housing.

- 1. Household surveys of income and expenditure.
- 2. Statistics of prices.
- 3. Statistics of wages and salaries.
- 4. Surveys of housing conditions.
- 5. Census of housing.
- 6. National accounts (for per capita national income).
- 7. Special studies.

Implementation of housing programmes

- (a) Number of new dwellings built by size and type.
- (b) Number of new dwellings built by method of financing.
- (c) Number of new dwellings built by constructor.
- (d) Comparison of programme targets and actual dwellings constructed.

- 1. Current housing statistics (including permit for building operations).
- 2. Permanent housing registers.
- 3. Current financial statistics.

Sociological and Economic Problems in the Field of Housing

"Statistics in the Rural Sector of Housing—the Role of the Reserve Bank of India, National Sample Survey, Ministry of Food and Agriculture, Programme Evaluation Organisation, etc."

By

Dr K. S. Rao†

1. INTRODUCTION

Housing constitutes a primary necessity along with food, clothing and education. It should, therefore, enjoy a high priority in any scheme of economic planning. Housing is also related to health, education and efficiency in general. Therefore, investment on housing should get considerable priority in view of its contribution to economic welfare in general and of material development in particular. Since more than 80 per cent of people in India live in villages, need for rural housing is increasing with the increase in rural population and the average expectation of their lives. The problem is enormous. However, it should be possible to organise local resources and effort with a minimum of supplies like cement and iron from outside, wherever necessary. But before accurate planning can be done, accurate data and comprehensive surveys are necessary.

2. PAUCITY OF HOUSING STATISTICS

In spite of the high priority that housing should deserve in economic planning, statistics relating to housing are, unfortunately, very meagre in the country. Some data are available through the decennial census giving the total number of houses, households, etc. Data relating to current building activity, additions to houses made each year, quantity and cost of materials used, production, consumption and prices of building materials are not available on a country-wide basis.

3. NATURE OF EXISTING DATA ON RURAL HOUSING

3.1 1961 Population Census.—Information on housing conditions collected by the 1961 Population Census may facilitate compilation of an inventory of housing in the country and would throw some useful light on structural, functional, size and tenure characteristics. Thus, it is hoped would fill the gap in the field of housing statistics to some extent.

3.2 The Bench-Mark Surveys of the P. E. O.—These surveys, by and large, bring out information on the types of structures rather than living conditions or amenities as such. The percentage of (1) distribution of residential houses by type of structures—type of plinth, type of walls, type of roofs, etc, (2) average value per household by type of structure and by sections, (3) residential structures, new residential structures to total (4) construction and repair of residential houses and other buildings, (5) purchase and construction of huts, buildings and cattlesheds.

3.3 Reserve Bank of India.—The All-India Rural Credit Survey, 1951-52, and the three follow-up surveys give information on the nature of expenditure on construction and repairs of residential houses, farm houses and cattle-sheds. Information about sales and purchase and source of finance on these items are also collected.

3.4 The National Sample Survey.—Some essential data on housing conditions and facilities have been collected in the 7th, 10th and 11th rounds respectively of the rural as well as urban sector, from a stipulated number of sample households, which was perhaps the first venture of its kind on an all-India basis. These surveys provide information about the housing accommodation, household amenities, structure and type of houses, household size of rooms occupied, number of rooms according to households, number of persons per room, per capita expenditure and number of rooms, floor space occupied, per capita floor-space, etc. Some of the important findings of these surveys are: (i) more than 60% of the households surveyed, lived in 'kaccha' structures, (ii) crowding in one room accommodation was acute in lower expenditure class, (iii) the average floor space per person progressively deteriorated as the per capita expenditure of the household decreased or as the size of the household increased.

3.5 Agro-Economic Research Centres' Village Survey Reports.—Villages are purposively selected by these Centres for repeat surveys at intervals of five years to study the dynamics of the changes induced by certain forces of change. The first point surveys give information relating to (i) availability per household, (ii) types of structures (per capita roofed area and enclosed area), (iii) expenditure incurred for the last five years in respect of new construction, residential and non-residential (cattle-sheds, cattle-sheds-cum-residential etc.). Houses are classified into five categories: (a) purely residential, (b) residential-cum-cattleshed, (c) cattle-shed, (d) shop establishment, (e) sheds for keeping bullock carts, etc. In most of the villages the second type, namely residential-cum-cattleshed is the predominant type indicating largely the living conditions of the villagers are not in a satisfactory state. The structures are described under (i) pucca houses,

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(ii) kaccha houses, (iii) thatched houses, (iv) mixed variety. However, the Agro-Economic Research Centre located in the Gokhale Institute of Politics & Economics, Poona, distinguishes four types of structures: (i) cottages (associated with poor people), (ii) mud houses (numerically the largest number of buildings occupied by the wealthy as well as the poor people), (iii) Wadas (old mansions or ancestral buildings), (iv) brick houses (wealthy traders). The reasons for regional differences in classification of structures are partly due to the differences in sociological and climatic factors. One example of a sociological factor is that the local population "fights shy" in constructing brick houses as it is likely to throw the owner into greater prominence in the eyes of the burglars and other bad characters in the locality.

4. FACTORS UNDERLYING DEMAND FOR PUCCA HOUSES.

An analysis of the data of the Agro-Economic Research Centres' surveys reveals some interesting features. There is a very high association between the percentage of pucca houses to the total number of houses and indicators of growth potential like (1) the percentage of irrigated area to total cultivated area, (2) the proportion of working population to total population. This is largely because of the fact that these factors enhance the capacity to save, resulting in a higher level of building activity. The nature of association between the percentage of pucca houses and indicators of growth potential is indicated by the following table based on data from four village survey reports prepared by the Agro-Economic Research Centre at the University of Delhi:

TABLE 1

Indicators of Growth Potential and Percentage of Pucca Houses

Name of the village	%age of irrigated area to total cultivated area	Proportion of working population to total population	Proportion of pucca structures to total houses
(1)	(2)	(3)	(4)
1. Mohammad Pur Gazmal Pur	51	62	57
2. Delawar Garh	65	59	47
3. Ratta Khera	20	33	13
4. Ratal Rohi	51	31	3

It may be seen from the table that when the proportion of working population to total population changes, proportion of pucca structures increases, the percentage of irrigated area to total cultivated area remaining the same. A similar association between the proportion of working population to total population increases and the proportion of pucca structures is noticed. The land-man ratio is also a factor contributing to the percentage of pucca houses. An increase in the dependents in the village population as a whole tends to decrease the saving potential of the village.

5. NEW CONSTRUCTIONS

From a reference to the expenditure pattern of the first village in the above table it is seen that new construction accounted for 77% of the total expenditure between 1951-56 on housing maintenance, repairs and new constructions).

These few observations indicate the urgent need for systematic studies into the demand factors for

rural housing. Expenditure surveys—physical and monetary—on new construction, renewals and maintenance are urgently called for.

6. ORGANISATION OF SUPPLY OF RURAL HOUSING

The statistics relating to supply of rural housing are to be collected in relation to the method of organisation of supply of cheap housing material, local or otherwise. There is considerable idle manpower. The Second Agricultural Labour Inquiry estimates an average level of 110 days of employment in the year. Housing Plans suitable to various occupational and income groups with mostly local materials can be evolved. The components can be simplified, standardized and produced at times which do not compete with agricultural production needs. A comprehensive system of rural housing statistics can, therefore, be based on a pre-determined programme of development of rural housing.

Housing Census in India during 1970-71***

By

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&

S. N. Narang‡

1. HOUSING IN NATIONAL ECONOMY

1.1 Housing stock by itself is one of the largest assets a country has, ranging between 10 and 25 percent of the 'national capital stock'. Again, maintenance of 'housing capital stock' absorbs every year an expenditure equivalent to about 2 per cent of the 'total national product'; and this proportion plus the new net annual investment in housing—at about 4 per cent of national product after allowing for 'depreciation and obsolescence' of existing housing stock, normally, amounts to about 6 per cent of the total national income. To illustrate these aggregates in terms of investments made in India in housing (both in the Public and Private Sectors) it may be stated that during the Second Plan, investment in housing was about Rs. 1,300 crores, and this perhaps rose to about Rs. 1,550 crores during the Third Plan; and it is expected to rise further to about Rs. 3,000 crores during the Fourth Plan and Rs. 4,000 crores during the Fifth Plan.

TABLE 1

Investment on Housing in India in relation to total investment in the economy

Plan	Total investment in the economy (in crores)	Investment in Housing (in crores)	Percentage of investment in Housing to total investment
(1)	(2)	(3)	(4)
First	3,360	1,150	34
Second	6,750	1,300	19
Third	10,400	1,550	15
Fourth@	23,750	3,000	13

@ Figures for Fourth Plan are highly tentative.

1.2 The foregoing figures speak of the increasing volume of investments being made in housing, during successive Five Year Plans of the country, irrespective of their falling proportions to the total investments. But in spite of large investments no appreciable effect has been made in arresting the deteriorating housing conditions. As a result there is a growing realisation that housing should be accorded a 'high-priority' in the strategy of allocating developmental outlays. Investments in housing have come to be regarded as 'productive investments' since they raise the quantum and quality of 'Human Capital'. This orientation in economic classification of expenditure on housing raises the need for improving and enlarging housing conditions because investment in housing operates as a catalytic factor in the social well-being of the population and, therefore, proves an essential emblem in the scheme of socio-economic upliftment of the country. This change in the climate of economic thinking is partly influenced by the United Nations as well as international opinion in favour of channelling international assistance to developing countries for augmenting home building activity. This means that larger investments need to be or will have to be made in this sector.

1.3 Housing and building sector derives its importance from its many-sided effects direct and indirect on consumer spending and employment volume. The construction industry is not well organised in India and so also the statistics of employment in this sector. Therefore, estimating of employment potential through indirect approach of applying 'norms of employment' to the proposed investment in this sector has been resorted to. Table 2 gives estimates of employment potential in the construction and building sector for the years 1960-61, 1970-71 and 1975-76.

TABLE 2

Employment Potential in the Construction and Building Sector

(in Millions)

Year	Construction Sector			Building Sector		
	Direct*	Indirect	Total	Direct **	Indirect	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1960-61	2.00	3.20	5.20	1.34	2.14	3.48
1970-71	5.50	8.80	14.30	3.69	5.90	9.59
1975-76	6.80	10.88	17.68	4.56	7.30	11.86

* Perspective Planning Division of the Planning Commission.

** On the assumption that employment in building sector might bear a 2/3 ratio to total employment in construction. This ratio is 3/4 in U.K.

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‡ Deputy Director NBO, New Delhi.

The figures shown under 'indirect' employment are of special significance because they relate to the multiplier effect which the building sector has towards generating employment in building materials industry. It has been estimated that the ratio of off-site employment to 'on-site' employment is 1.6 in the U.S.A. and Canada. The value of employment multiplier in India may be higher than 1.6 but on the analogy of the U.S. norms and for convenience, for India, in the case of building programmes the 'off-site' employment is assumed as 1.6 times of the 'on-site' employment.

2. NEED FOR A HOUSING CENSUS

2.1 In view of the large volume of investment that goes into housing and building and high employment-potential of housing and building programmes along with the dependence of housing demand and volume of production on a host of socio-economic complex of variables, it is necessary that the characteristics of the existing housing stock are studied in detail and information gathered about the housing condition of the people in relation to their demographic and economic particulars. This would help in making more purposeful housing programmes. Conducting of 'Housing Census' is one of the basic tools which provides a statistical description of housing inventory on broad lines at a particular point of time. The information can be collected and categorised into 'basic' and 'supplementary' items so that it may (i) serve as a general framework for various types of sample studies on a host of socio-economic problems as well as, (ii) constitute a bench-mark reference for current housing statistics.

2.2 The importance of 'housing census' has been stressed by various national and international organisations; and as a result of interest particularly evinced by the United Nations and their Statistical Office, a large number of ECAFE countries* took 'Housing Census' in or around 1960.

2.3 In India, the need for conducting a 'Housing Census' was realised while finalising the details of 1961—Population Census but due to various reasons chiefly of economy and organisation only some limited data on housing were collected through the 'houselisting' schedule on the eve of the population Census.

2.4 The question of conducting 'Housing Census' has been considered by the Registrar General of India and the National Buildings Organisation since 1961. The urgency of conducting a Housing Census in 1970-71 was further reinforced by the Report of the Working Group on 'Housing and Urban and Rural Planning' set up by the Planning Commission for the Fourth Plan. This recommendation of the Working Group has been endorsed as a 'top-priority' Fourth Plan Statistical project by the meeting of Central and State statisticians convened by the Planning Commission in July, 1965.

2.5. Organisation of a 'Housing Census' involves a good deal of preparatory work more or less similar to the population census and a lot of spade work in the form of finalisation of procedures, concepts, definition etc, *in advance*. In this note an attempt is made to enlighten on the desirability

of including or excluding various items in the schedule that can be canvassed for 'the housing census'. Therefore, this note may be considered the first preliminary for undertaking further work in respect of the organisation of 'housing census' to be conducted during 1970-71.

3. TOPICS FOR A HOUSING CENSUS—INTERNATIONAL RECOMMENDATIONS

3.1 It has been conceded by various international forums and documents that the topics to be included in a 'Housing Census' should conform to the objectives of a housing census. The U.N. Document: "General Principles of a Housing Census" (1958) discussed the aims and objectives of 'housing census' and suggested a list of topics which could be included in a 'Housing Census' (Ref. Col. 1 of Annex). This document perhaps usefully served as a guide-line to the countries which conducted the 'Housing Census' around 1960.

3.2 The experiences of different countries which conducted population and housing censuses during 1954-64, have been examined by the United Nations Statistical Office; the results of investigations have been examined for revising and re-orienting the "General Principles of a Housing Census" and a document containing the required changes has been brought out under the caption: "Principles and Recommendations for a Housing Census: Draft recommendation for 1970 censuses (E/CN/3/343)". According to the revised document the objectives of a 'Housing Census' are :

- (i) to make an inventory of all the various kinds of premises in which people live and which together constitute the existing housing accommodation at a given time;
- (ii) to classify these places according to their structural characteristics, geographic locations, and available facilities, installations and services; and
- (iii) to obtain indicators of the housing condition in which these population live—living space per inhabitant and per household, the equipment provided and the services laid, i.e., the kind of lighting, supply of gas, water, cooking equipment, etc.
- (iv) to obtain data (which are essentially demographic) on household in addition to living quarters themselves in case the housing census is taken separately from the population census.

3.3 The topics suggested for 1970 housing programmes in the revised document are listed in Col. 3 of Annex. The topics listed include "recommended" topics and "other useful" topics. For convenience they are grouped into topics concerned with (1) the building in which living quarters are located (2) living quarters and (3) the occupants of living quarters. The 'recommended topics' are those required for measurement and evaluation of housing conditions and for the formulation of housing programmes. 'Other topics', it is indicated, are those which are also important for formulation of housing programmes but comparatively their need is less pressing.

* Brunei, Japan, the Republic of Korea, North Borneo, the Philippines, Sarawak and Thailand conducted the census in 1960; Hongkong, India, Indonesia, Nepal and Pakistan conducted it in 1961 and Cambodia in 1962.

3.4 The U.N. Working Group on 'Census of Population and Housing' in its meeting held in Bangkok in December, 1964 also examined the experiences of the different countries with regard to the inclusion or exclusion of various topics on which data were collected in or around 1960 in various countries at the time of housing census. For example, the reactions of the respondents and the ability shown by them in giving accurate information, the difficulties encountered in the collection and usefulness of the data, etc. were compiled and examined. As a result the Working Group recommended a list of topics for 1970 housing census in Asian countries. These recommendations are listed in column 2 of the Annexure.* A second meeting of this Working Group was held in March, 1966, to decide mainly the tabulation programme of 1970 censuses and some revised recommendations have emerged. It will be noticed that since the publication of the 'General Principles' in 1958, there has been a considerable shift on the emphasis of the items recommended for a 'Housing Census' and many of the items relating to (a) characteristics of building in which housing unit is located, such as the material of building construction, year or period of construction and (b) characteristics and facilities of housing unit, e.g. electricity, has moved into greater importance from the group of additional items to the group of basic items and demographic and economic characteristics of occupants and households have been detailed out further. This makes an advance step towards satisfying in a larger way the objectives of a 'housing census'.

4. TOPICS THAT COULD BE COVERED IN AN INDIAN HOUSING CENSUS

4.1 'Housing Census' is a costly operation. Therefore in selecting topics for inclusion in a Housing Census, the utility aspect of data collected should always be borne in mind. The foremost use of 'housing census' is to provide basic data to enable preparation of housing programmes in which the first requisite is to know or estimate the present housing stock and conditions and to derive out of it the future requirements and the future needs after assuming certain values of some relevant dynamic factors.

4.2 In this connection it would be useful to recall the recommendations of a Joint Committee of Experts sponsored by the United Nations, I.L.O., UNESCO, WHO and F.A.O. that housing be taken into consideration as one of the 12 components in the measurement of levels of living. The question of the 'components of the measurement of levels of living' was further considered in various Commissions, Working parties, etc. of the United Nations and their views and comments have been suitably incorporated in the United Nations Statistical Papers, Series 37 (1962); Statistical Indicators of Housing Level of Living. This document lists indicators in two categories; *basic indicators* meant for general applicability and *supplementary indicators*, for limited use, on a country or regional basis, with the modifications or additions. It is pointed out that interpretation and under-

standing of these indicators have to be based on other pertinent information on climate, culture, degree of urbanization, demographic structure, economic structure, social structure and rates of change in housing situation over time. The document also recommends that these indicators should be applied separately to rural and urban areas. The *four basic indicators* (B-1 through B-4) (i) proportion of population living in permanent dwelling (ii) per cent of dwellings with density of three or more persons per room, (iii) occupied dwellings served by piped water supply, and (iv) provision of essential facilities of toilets are designed to reflect the basic requirements of adequate shelter, privacy, protected water supply and sanitation facilities, and the *five supplementary indicators* (S-1 through S-5) i.e. (i) per cent of the population living in 'rustic' or 'improvised' houses, or those 'not intended for habitation', or without shelter of any kind; (ii) average number of persons per room for occupied dwellings only; (iii) per cent of occupied dwellings with flush toilets (in urban areas); (iv) per cent of occupied dwellings with toilets other than flush; and (v) dwelling construction in relation to estimated requirements are designed to indicate housing deficiencies and to distinguish countries with low levels of housing from those with high levels, rather than between countries which have already attained high satisfactory levels. The data required for the compilation of the indicators have to be obtained through housing censuses and sample surveys and, therefore any programme of housing census and sample surveys needs to be organised in such a way as to make available the necessary statistics which would enable measuring the qualitative and quantitative levels of housing conditions.

4.3 However, on an examination of the indicators suggested by the above document of the U.N., it is felt that in the ECAFE Region, certain modifications are called for in the methods laid down in the General Principles, in the light of the experience and coverage of last censuses and that the following are of significance to the countries of the ECAFE region, (for that matter to India as well), as regards coverage of items necessary to measure and judge the housing conditions. These could be measures for (a) number of rooms and floor space (b) water supply (and its source rather than information on piped water supply with tap inside the housing unit) distinguishing between drinking water and general water supply (c) information on toilet (by various types rather than by flush only) preferably as to whether latrine exists, (d) bathing facilities (presence or absence and whether shared with other households) (e) cooking facility (separate kitchen and with sink or drainage facility†), and (f) drainage system for clearance of filth and used water (whether exists and is provided by local government as a part of broad drainage system).

4.4 It is in this context that the scope for a housing census in India during 1970 should be examined keeping in view data collected in 1960 at houslisting stage prior to 1961 census and the experiences gathered thereat. The Indian Census

* The Annex presents a consolidated comparative picture of the U.N. recommendations on the inclusion or exclusion of various topics in a 'Housing Census' and can serve as a handy guide.

† Modern kitchen ranges with gas or electrical installations are a luxury in most of Asian houses at present.

of March, 1961 listed in the first instance all buildings and, within each building, what were called 'census houses', a term wider in concept than the housing unit. Census houses included besides residential houses, buildings or parts thereof used as factories, workshops, or other establishments but they were distinguished on the basis of information on use to which the house was put. For the census houses used for residential purposes information was collected on materials used in walls and roof, number of rooms, tenure, number of households living and the number of persons who were members of the households. Demographic and economic particulars of occupants are otherwise available from the census schedule. Classification of housing units of the type suggested in the *General Principles* has not been attempted. Information is not available on water supply and toilet facilities as per the basic list. The census, however, provides for data on materials used in construction, an item considered important in many other censuses of ECAFE region. An examination of the items covered by India therefore reveals that data collected were deficient in respect of (1) basic facilities available in housing units, e.g. water supply, toilet, bath room, electricity (2) year or period of construction of the building of which housing unit forms a part (3) Demographic and economic characteristics of the household.

4.5 In view of what has been stated in the foregoing paragraphs it is suggested that in addition to the items canvassed in 1960-61 house-listing, the following additional items should be canvassed in 1970-71 programmes because of their importance :—

- (i) *Water supply* : Availability of safe, i.e., clear water is the first requisite of any programme meant for the health of the community. As such it is also engrained in the Plan Schemes. Therefore, it is of crucial value to know the type and nature of water supply to the community. In this connection, proximity or distance of the source of water supply to the household has an important bearing. All these facts warrant that this item may be elevated in the group of basic list.
- (ii) *Electricity* : There is still a vast leeway to be made up in India in the matter of providing electricity to the people for lighting purposes and its provision is a measure of the levels of living of the people and the progress achieved through the processes of planning. Housing Census could conveniently help us in studying the detailed distribution of need and help in formulating the programmes for electrification, etc.
- (iii) *Floor space* : Density of occupation has been measured generally by the number of persons per room. However, because of the wide variation in the size of rooms, it could be a misleading indicator. It would be desirable to build up another indicator, i.e. availability of floor space per person/household which is more meaningful for regional, national and international comparisons. Therefore, information on floor space in housing units should be collected in a housing census.

(iv) During the era of planning as well as for the strategy of planning, technique of capital coefficient is often used for making future investment estimates and programmes. Use of this technique has been made while preparing the four quinquennial plans of economic development of India. It is a little odd that this technique was employed in the absence of any knowledge about the existing capital stock in the country. It does not require any arguing that in the early stages of development the capital stock usually consists in a major proportion in the form of 'houses and buildings' rather than in 'machines and plants' or even on 'roads, dams and other construction works'. It can be broadly stated that 'housing and buildings' represent about 35-40% of the capital stock in a country. Therefore, it is necessary that while conducting the Housing Censuses one item on which information should be collected in the 'house-listing schedule' could be "Approximate market value of the Census Houses". Collection of this information would yield the overall "value of the capital stock in housing and buildings" as well as according to the value of capital stock according to types of census houses (such as dwellings, factory buildings, school buildings, hospital buildings, etc.). This information will relate to the year of census (or value in terms of current prices). By integrating the information of item (iv) regarding the year of construction and of (iv) (a) regarding the 'value' and by using the building cost indices, it would be possible to arrive at some reliable estimate of the 'value of capital stock in constant prices'. Thereafter it would also be easy to derive the 'rate of depreciation' of different types of 'census houses'.

- (v) *Age of structure/year of construction* : Information on this topic relating to a recent year could provide a useful guide for estimating volume of construction in the absence of current construction statistics. It could also be used to compute the probable life expectancy of the housing unit according to the type of materials, etc. and also reflect on replacement needs. The information that could be revealed by this item has a high potential value, such as the using of these data in the estimation of national income and capital formation.
- (vi) There are three more items (i.e. (1) toilet facilities; (2) bathing facilities; and (3) cooking facilities) on which the collection of information could help towards determining the degree of privacy of a family in performing their daily routine and satisfying the needs that arise out of such routines. However, considering the general housing situation in our country we might restrict ourselves to collecting information about existence and absence of these facilities as a first step rather than going into niceties of details as regards type, size, etc.

- (vii) *Drainage* : It is an important item which seems to have been ignored generally in the housing censuses. It is necessary to know whether suitable arrangements exist for clearance of filth and used water which might otherwise form cess pools and create unhygienic conditions in the neighbourhood.
- (viii) *Rent paid* : The item is of an immense socio-economic value in the formulation of social and economic contents of a housing policy and also in the measurement of national income generated from this sector. Information on this item can be a useful tool and a medium for stratification purposes specially in respect of post censal sampling in detailed enquiries.
- (ix) *State of repair* : Information on this item is important because even if a house is having certain basic amenities, it may be in a bad condition unfit for habitation in the absence of suitable repairs. Knowledge about the state of repair can be purposive indicator towards categorising the houses either as dilapidated units or a 'good' ones. It is no denying that there is an element of subjective judgment in this process but that should not deflect from 'including' this as an item of inquiry. For example when one is studying the question of vacancy, one has to study the various relevant cases underlying the phenomenon. One cause might perhaps be the bad state of repairs and if this fact is not taken into account an inflated picture of 'vacancy ratio' would be available leading to disputable conclusions.
- (x) *Demographic and Economic Indicators* : Ultimately, it is the population which is to be housed and its characteristics are to be judged based on a number of demographic and economic factors. Such factors to a great extent influence the housing requirements and effective volume of demand. Some such characteristics can be (i) the number of married couples in a housing unit; (ii) the number of persons above and below the age of puberty. Informations on these elements not only indicate the degree of density or congestion but it also shows the prevailing condition or privacy obtaining in such a house. It is often agreed that a housing census should not be loaded with 'Demo-

graphic and economic characteristics' and advantage should be taken of the availability of such data from the population census. This in fact could be achieved by integration of the population census and Housing Census and this needs to be borne in mind.

- (xi) Apart from the very minimum of additional items that should be canvassed in a Housing Census in 1970, there are other important details, e.g. mortgage status about housing units and building of which they are part, on which information should be collected in a housing census on a compulsory basis. Many of the countries have collected other additional data on fixtures of Telephones, Television, etc. through a housing census. But as India has not reached this stage of economic and social development at present to warrant collection of these data as a census basis, these may, therefore, be left to 'Sample Surveys'.

5. ORGANISATION OF HOUSING CENSUS IN INDIA AND MACHINERY

5.1 Because of very close relationship between housing census and population it is but natural that the office of Registrar General of India may be responsible for conducting the housing census 1970. It is desirable that action may be initiated urgently to draw out the detailed programmes. It would be necessary to set up a committee which may go into greater details about the finalising of concepts and definitions indicated above for inclusion in the census. This committee may include the representatives from the office of the Registrar General, National Buildings Organisation, Planning Commission, Central Statistical Organisation and States so that there is a fair representation of statisticians, programmers and administrators and users of these statistics. Particular attention may be paid to the close integration and matching of 'housing census' with 'population census'.

5.2 The above suggestion for organisation and machinery for conducting housing census in India is more or less in conformity with the recommendations of the ECAFE Second Working Group on 'Census Population and Housing'. In its report the Working Group has referred to the proposal of a seminar on 'organisation and conduct of Population and Housing Censuses' which is a welcome move. However, India can derive maximum benefit from the seminar, if the preparations are started right now for conducting a Housing Census in India during 1970-71 so that preliminary problems can be thrashed out well in advance.

ANNEXURE

List of Items Recommended for Inclusion in Housing Censuses

(i) As given in "General Principles" ¹	(ii) As recommended by the ECAFE Working Group ²	As recommended by U.N. Document Principles and Recommendations for a Housing Census : Draft Recommendation for the 1970 Census (E/CN.3/343)
(1)	(2)	(3)
I. BASIC ITEMS :		
A. Data to be obtained from each housing unit.	A. Data to be obtained from each housing unit.	Buildings in which living quarters are located—characteristics of:
(i) Location (address). ;	(i) Location (address).	*1. Building-type of.
(ii) Class or type of housing unit.	(ii) Class or type of housing unit.	*2. Construction material of out walls.
(iii) Number of occupants.	(iii) Number of occupants.	3. Year or period of construction.
(iv) Selected demographic and economic characteristics of occupants and household and family relationships.	(iv) Water supply system (if state of safety, availability and distance from source).	Living quarters—characteristics and facilities of.
(v) Water supply system.	(v) Electricity.	4. Bathing facilities.
B. Data to be obtained from each conventional (permanent) dwelling and rustic (Semi-permanent) housing unit :—	B. Data to be obtained from each dwelling and rustic housing unit :—	5. Bedrooms—number of.
(a) <i>Characteristics, installations and facilities.</i>	(a) <i>Characteristics, installations and facilities.</i> §	6. Cooking facilities.
(i) Type of dwelling or rustic housing unit.	(i) Type of dwelling or rustic housing unit.	*7. Lighting—type of.
(ii) Number of rooms.	(ii) Number of rooms.	*8. Living quarters—type of.
(iii) Toilet installations.	(iii) Floor space of dwelling.	*9. Location.
	(iv) Toilet installations.	*10. Occupancy status.
	(v) Year of construction or substantial extension or reconstruction.	11. Ownership—type of.
	(vi) Predominant material of wall roof.	12. Rooms—number of.
(b) <i>Occupancy :</i>	(b) <i>Occupancy :</i>	*13. Toilet facilities.
(i) Occupied or vacant.	(i) Occupied or vacant	*14. Water supply system.
(ii) Tenure (if occupied only).	(ii) Tenure (if occupied), with type of ownership.	Occupants of living quarters—number and characteristics of :
		*15. Conjugal Family nuclear. §
		16. Demographic and economic characteristics of household head
		*Age.
		Industry.
		Marital Status.
		National and/or ethnic group.
II. ADDITIONAL ITEMS :	II. ADDITIONAL ITEMS :	*17. Household.
A. Data for private housing units :	A. Data for private housing units :	*18. Occupants—number of.
(a) <i>Installations :</i>	(a) <i>Installations :</i>	19. Rental.
(i) Cooking facilities.	(i) Cooking facilities—existence of room for preparing meals; kind of equipment used; and cooking fuel.	*20. Tenure.
(ii) Bathing facilities.	(ii) Bathing facilities	
(iii) Electricity.	(iii) Gas installations.	
(iv) Gas installations.	(iv) Heating.	
(v) Heating—Central heating system, hot water, etc., other types; and source of energy (electricity, gas, oil, coal, etc.)	(v) Installation for cottage industries.	
(vi) Installations for cottage industries.		

* Recommended Topics. With the exception of "Tenure" these Topics are included as basic in the World recommendations and in each of the regional programmes for 1970 housing census. "Tenure" included as basic in all programmes except the regional programmes of Africa where it is included as an "Other useful to pic".

ANNEXURE—Contd.

(1)	(2)	(3)
<p>(b) <i>Household conveniences :</i></p> <p>(i) Refrigeration. (ii) Telephone. (iii) Radio receiver. (iv) Television receiver. (v) Washing machine. (vi) Vacuum cleaner.</p> <p>(c) <i>Characteristics of building :</i></p> <p>(i) Type of building in which dwelling located (residential, non-residential, single or multi-dwelling, number of floors, etc.) (ii) Year of construction. (iii) Materials of walls/roof/floors. (iv) State of repair or dilapidation. (v) Floor space of the dwelling. (vi) Outdoor space—courtyards, gardens, terrances, platforms, etc.</p> <p>(d) <i>Occupancy :</i></p> <p>(i) Rent paid in case of units rented. (ii) Total capacity of occupation.</p> <p>(e) <i>Ownership :</i></p> <p>(i) Owner. (ii) Economic activity of owner (if privately owned).</p>	<p>(b) <i>Household conveniences :</i></p> <p>(i) Radio receiver. (ii) Telephone (iii) Television receiver.</p> <p>(c) <i>Characteristics of building :</i></p> <p>(i) State of repair or dilapidation. (ii) Outdoor spaces.</p> <p>(d) <i>Occupancy :</i></p> <p>(i) Rent paid in case of units rented.</p> <p>(e) <i>Ownership :</i></p> <p>(i) Land tenure.</p> <p>(f) <i>Selected Demographic and economic characteristics of occupants and household and family relationships :</i></p>	

¹ "General Principles for a Housing Census" U. N. Statistical Papers, Series M, No. 28.

² Report of the ECAFE Working Group on Censuses of Population and Housing (E/CN.11/ASTAT/Conf. 6/L.10).

V

HOUSING ECONOMICS & FINNACE

Genesis, Characteristics and Importance of Construction and Building Sector***

By

Dr. C. M. Palvia†

1. IMPORTANCE OF CONSTRUCTION INDUSTRY

1.1 Construction sector*—comprises of two broad categories, viz. (1) building sector, and (2) non-building sector, i.e., roads, bridges, dams, ports, etc. This sector or industry, it can be said, represents an important branch of the national industrial system. Importance of construction industry is derived from its many-sided effects, both national and international and from its indirect effects on consumer spending and, therefore, employment volume. As regards its economic ramifications, it is a truism that when building industry flourishes, all goes well as this industry employs‡ an important proportion of nation's working population, contribute a major share in the value of goods produced and also absorbs a large proportion of public and private capital investment. It is natural, therefore, that public intervention, if any, in this sphere of economic activity may have an appreciable fruitful effect on stabilising or de-stabilising general economic conditions particularly as regards employment, investment, savings and national income generation.

1.2 Construction industry is not very much dissimilar to manufacturing industry. Besides its importance as regards investment and employment,

it is as complex, or possibly more, as a manufacturing industry. It uses a large multiplicity of parts and it has been estimated that in developed economies the number of parts going into an average sized detached house are about 30,000. By comparison, an automobile, with its 5,000 parts is a simpler product; so also a military tank which can be produced from 17,000 parts (exclusive of rivets). These figures bear out the intimate relation of construction industry to the manufacturing industries.

1.3 Whether a country is agricultural or industrial, hardly without exception, the industrial sector to a considerable extent comprises of construction activity. Almost in all industrially advanced countries, construction sector normally employs a labour force which is about 1/3 of the labour force employed in the manufacturing industries; in the U.S.A., Germany and Czechoslovakia, the proportion is even larger. On the other hand, the employment in construction sector equals the employment in manufacturing sector or even moves upwards specially in agricultural countries, such as, Algeria, Tunisia, Kenya and French West Africa. Table 1 signifies the importance of employment pattern of the construction segment within the Industrial sector.

TABLE 1

Ratios of the Working Force Employed in Construction Sector to the Working Force Employed in Manufacturing Sector for Various Countries

0.2 and 0.3	0.3 to 0.5	Above 0.5
1 Belgium 0.2	1 Denmark 0.31	1 Algeria 0.85
2 Italy 0.2	2 Ireland 0.33	2 Tunisia 1.1
3. U.K. 0.2	3. Newzealand 0.34	3. Kenya 1.2
4. Austria 0.2	4. Germany 0.36	
5. Switzerland 0.2	5. U.S.A. 0.42	4. French West Africa 2.1
6. Norway 0.2	6. Czechoslovakia 0.42	
7. Netherlands 0.2	7. Brazil 0.45	
8. Yugoslavia 0.3		
9. Finland 0.3		
10. Sweden 0.3		
11. Canada 0.3		

* Also referred as "construction industry" or "building, civil engineering and public works industry".

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‡Buildings' alone employ 75% of total construction employment in the U.K.

1.4 Though data about the employment volume in construction sector are not available in India it will not be wrong if the ratio of employment in construction sector in relation to manufacturing sector is assumed between 0.3 and 0.4. This may tell us the magnitude of proportions as a consequence of providing more and more of infrastructure under the initial Five-Year Plans arising out of the corollary embedded in the policy of economic welfare aimed at raising the standard of living of the masses.

1.5 In the less developed countries increasing the capacity of the building industry can be expected to go a long way relieving the general pattern of unemployment or under-employment, specially through a housing programme emphasizing the use of locally available short-life building materials and unskilled labour, production of building tools and equipment and training of skilled and unskilled labour. An increase in building activity does not only augment secondary and tertiary effect on employment, but it has far-reaching other effects. For example, ratio* of off-site employment to on-site employment is 1.6 in the U.S. and Canada.

1.6 Besides the importance of employment potential in the construction sector, by and large, this sector absorbs more than half of the fixed capital in an economy. In Argentina, Austria, Belgium, France, Germany, Luxemburg, Morocco, the Netherlands, Norway, the Philippines, the U.K. and Yugoslavia the construction sector's share in fixed capital is about half; in Burma, Greece, Ireland, Italy, Kenya, Nigeria, Puerto Rico, Sweden, Switzerland, Union of South Africa, the fixed capital in construction sector is about 0.6 of the total fixed capital or about one and a half times the size of the fixed capital in the plants and machinery. Probably, the latter proportionality or relationship may hold good for India. In Canada, Ceylon, Ghana, Panama, the U.S.A. the ratio of the fixed capital in construction sector is 0.75 of the total fixed capital or as much as 2 to 3 times of the fixed capital in 'plants and machinery'. Thus, besides employment potential, the degree of the fixed capital absorption in the construction sector is of even greater significance. The consideration of these proportionalities in a co-related form is relevant and of vital importance for allocating the capital resources in a balanced way, particularly, in planned economies.

1.7 In the manufacturing sector as well, about 1/3 (in some cases even 1/2) of the fixed capital is absorbed by 'land and buildings'. In any programme of economic development, acceleration of the tempo of industrial development is an essential concomitant. Hence, there is and there will be a continuous rise in the level of investment in the manufacturing sector in India and to that extent a larger and larger absolute size of investment will be consequently put in 'land and buildings'. To evaluate investment in the latter segment of the manufacturing sector, a complete and detailed inquiry of the components involved is essential, so that ways and means may be evolved for effecting economies to conserve capital expenditure for a directly productive investment, ultimately aimed at augmenting the capital productive efficiency in the manufacturing and construction sectors. Certain results culled out from the socio-economic survey

of Bhilai Region, show that the ratio of capital investment in land and buildings for small scale and cottage industries ranges between 38 per cent and 80 per cent; and on an average it is at about 56 per cent. Thus even in proverbially labour intensive industries the share of total investment in 'land and buildings' has a high proportion.

1.8 The construction sector which envelops about 1/2 to 2/3 of the total fixed capital stock or investment of an economy, if divided into two parts, would assign nearly two or three parts of the investment to the 'buildings—residential and non-residential'. Out of this, a sizable portion, it will be found, is comprised of residential buildings. It is of prime importance that while examining the building components of an industry, which is important by itself, an analyst has to keep himself alive about the sizable investment absorbed in residential buildings. It further enlivens interest because of large increases in world population and the mass movement of people as a result of two world wars and growing industrialization. All this is making 'housing' a world-wide project and an essential industry in every country.

1.9 In addition to the importance of the building and construction sector as regards employment and investment it also has a respectable place in the pattern of consumption expenditure. The consumption expenditure of people in economically advanced countries, next in importance to food is on 'housing and housing services'. Again, the size of the expenditure incurred on 'housing and housing services' is usually double the size of the expenditure incurred on 'clothing'. In some of the highly developed countries the size of the consumption expenditure on 'housing and housing services' is even treble the size of the expenditure incurred on 'clothing'. The examples of the latter pattern are Belgium, Denmark and the U.S.A. This picture about the pattern of consumption expenditure is available from Table 2. According to NSS the proportion of expenditure on "housing and housing services"*** in urban India is about 10% as against clothing expenditure at about 8%.

TABLE 2

Expenditure on housing (rent, water, fuel, light household) as a multiple of expenditure on clothing in some countries

Country	% Housing Expenditure
	% of Clothing Expenditure
Denmark	1.58
France	1.58
Jamaica	1.67
Netherlands	1.80
Australia	1.83
Sweden	1.85
Ireland	2.08
U.K.	2.27
Puerto Rico	2.30
U.S.A.	2.80
Canada	3.00
Belgium	3.10
Panama	4.00
Peru	5.00

* Such ratios can also be arrived at for the Indian economy. An attempt in this direction has been made by the Labour & Employment Division of the Planning Commission, in its paper submitted to the Ninth Conference of Central and State Statisticians held at Jaipur in December, 1960.

** Including 'fuel and light', 'bedding', 'furniture' and 'utensils'.

1.10 Notwithstanding the importance of employment heavy capital formation, sizeable share in consumption of the building sector, its capital/output ratio is high. The latter point is explicable in the long-life that this type of capitalised stock has along with the low rate of depreciation and the low rent from such stocks and the paying capacity of the tenants, in general, which is generally below the level of economic rent. All this signifies that the productivity of capital in the building sector is low but it yields fruits over a long period. The relevant data given in Table 3 show the co-efficients between the percentage of the income generated to the percentage of the capital stock in the construc-

tion sector in some of the economies. In some economies, the income generated in the construction sector is 10% of the national income generated by the manufacturing sector though by and large it is about 20% to 30%. In view of this and in the background of high share of construction and housing investments in total investment the capital/output ratio is about double or even treble of what is found in the manufacturing sector. The underlying mechanics of this low capital productivity in the construction sector is also traceable to traditionally low productivity of labour in the construction sector.

TABLE 3

Co-efficient of Capital Income in Construction & Manufacture Sectors

Sl. No.	Country	Percentage of fixed Capital in Bldg. Const. Sector	Percentage of Gross Domestic Product in Bldg. Const.	Percentage of fixed Capital in Transport & Manufacture	Percentage of Domestic Product in Manufacture	Co-efficient of Capital/Income in Const. Sector Col. iii/iv	Co-efficient of Capital/Income in Manufacture Col. v/vi
(i)	(ii)	(iii)	(iv)	(v)	(vi)	(vii)	(viii)
1	Argentina . . . (1958)	51	6	49	21	8.50	2.33
2	Belgium . . . (1958)	53	7	47	34	7.57	1.38
3	Burma . . . (1958)	57	3	43	11	19.00	3.99
4	Canada . . . (1958)	70	7	30	26	10.00	1.15
5	Ceylon . . . (1958)	74	9	26	75	8.22	5.20
6	Denmark . . . (1958)	42	7	58	29	6.00	2.00
7	Germany . . . (1958)	49	6	51	41	8.16	1.24
8	Italy . . . (1958)	60	7	40	31	8.57	1.29
9	Kenya . . . (1958)	61	4	39	10	15.25	3.90
10	Luxemburg . . . (1957)	51	7	49	43	7.28	1.14
11	New Zealand . . . (1958)	41	7 (1954)	59	22 (1954)	5.86	2.68
12	Norway . . . (1957)	46	8 (1958)	54	31 (1958)	5.75	1.74
13	Panama . . . (1956)	65	4	35	8	16.25	4.37
14	Philippines . . . (1958)	49	3	51	16	16.33	3.18
15	Puerto Rico . . . (1958)	64	5	36	21	12.80	1.71
16	United Kingdom . . . (1958)	47	6	53	35	7.83	1.51
17	United States . . . (1958)	68	5	32	29	13.60	1.10
18	Yugoslavia . . . (1958)	45	5	55	49*	9.00	1.12

* Includes mining.

N.B.—Figures in brackets show the respective years of the concerned data.

(Source : U. N. Statistical Year Book, 1959).

1.11 Construction sector in a planned economy signifies vital importance as regards absorbing substantial size of foreign exchange. The critical shortages of building materials which exist are of widespread occurrence in many countries and can be remedied only by concerted international action. It is of great significance to know the size of the building materials' imports. To illustrate, it may be stated that in Denmark, the foreign exchange component of the building sector ranges between 12 and 18 percent for various houses, and in Argentina its composition is 28.6 percent.

1.12 From what has been stated so far it is abundantly clear that the 'construction and building sector' is important in many ways as regards employment, investment, consumption, capital/output ratio, foreign exchange absorption, productivity, sociological aspects, etc. It enables the economy worth habitation, injecting with elements in activating the economy. In an under-developed country, with vast unemployed and under-employed manpower, this sector can work as an employment multiplier, income generator and the elevator of the standard of living.

2. CONSTRUCTION AND BUILDING STATISTICS

2.1 Continued ignorance about the size and vital characteristics of this sector and overlooking its important potential contribution during planning period, is strewn with incalculable perils. We pay so much attention to statistics of manufacturing sector that our efforts look rather disjointed, so far as it relates to our supreme ignorance about statistics of the construction and building sector. Further, in India, we have an array of statistical sources for agricultural as well as industrial sectors. In addition, our colossal machinery of N.S.S., C.S.O. and State Statistical Bureaus is well-directed to collect, collate, disseminate and analyse the agricultural and industrial data. But the vital sector of 'construction and building' has, so far gone unattended. Hence, there is need to rise and face the problem squarely, irrespective of difficulties involved.

2.2 Realizing this, the collection, compilation and collation of these statistics, have been recommended by various conferences and meeting of the I.L.O. and its various conventions. India, as a member country, has to take appropriate action in this regard for their implementation/ratifications. Some of these conventions and recommendations are listed below :—

- (a) Conventions No. 63 concerning Statistics of Wages and Hours of Work, 1938. Conventions and recommendations, 1919-1949 pp. 461-470. Under this the Governments ratifying the conventions undertook to compile statistics relating to wages and hours of work, *inter alia*, in building and construction as provided for in the text of the 1938-Convention to publish the data as promptly as possible, and to communicate the data to the international Labour Office at the earliest date.
- (b) General Resolution, Fourth International Conference of Labour Statisticians 1931. The conference suggested the desirability of I.L.O. establishing one or more standard units of housing for purposes of in-

viting each country to furnish regular information on average rents of the predominant types of working class dwellings together with a description of the accommodation provided and of the general character of dwellings covered.

- (c) Report II of the International Labour Organisation—Asian Regional Conference (Tokyo, Sept., 1953) realised that "Little detailed information is available concerning quantity and quality of existing housing accommodation in most Asian Countries."
- (d) Report of the Second Five Year Plan emphasized that "The precise extent of the housing shortage in urban areas has not been determined. This is because systematic housing statistics do not exist and there are few reliable surveys of housing conditions. Information in respect of the progress of private construction is also lacking. Special efforts should now be made to organise the flow of accurate statistics so that co-ordination in policy and assessment of progress are effectively ensured".
- (e) Report of the Working Group of Housing & Urban Development in the Third Five Year Plan emphasized "There is a woeful lack, at present, of statistical information in the field of housing and building materials. For organizing housing programmes on any scale, it is essential that accurate statistics should become available at regular intervals. For this purpose, Housing Cells should be set up in the State Statistical Bureaus, as recommended by the National Building-Council in their second and third meetings", (*vide* part IV page 34). It further stressed that "..... in order to obtain more detailed statistics, it is suggested that the National Sample Survey should in one of their next rounds conduct intensive, large scale sample surveys on housing. A regular Housing Census in the urban areas may also be undertaken at a later date towards the end of the Third Plan".
- (f) U.N. General Assembly, felt that "Housing Censuses, if taken in accordance with principles which permit accurate measurement of housing supply in its qualitative as well as quantitative aspects, can furnish the major and basic information required for the formulation and execution of the housing policies of national and local governments".*

2.3 Whatever be the imperfections, we should be prepared to realize the limitations of our data but at the same time we should in no way blunt the edge of our attempts to collect the data in this field. In many of the Western European countries "housing policy" has become the main plank of 'election manifestoes' many political parties have lost or gained the majority in the Parliament on this issue. In democratic set-ups ignorance or knowledge about housing may mar or improve chances of success for progressive and radical policies.

* "General Principles for a Housing Census" Page I (U.N. Statistical Office : ST/STAT/SER.M/28).

2.4 As regards 1963 World Programme of Basic Industrial Enquiries, in which India is co-operating, it is desirable for India to prepare ground so that the construction and building sector may be included as a part of the enquiry. Also concerned efforts should be made from now to prepare a proper machinery, well in advance.

2.5 It may be repeated that the Manufacturing Sector in India (as elsewhere) also has a construc-

tion sector (essentially Building Sector) which covers about 1/4 to 1/3 of the fixed capital investment of the industries concerned. In the Manufacturing Sector the "Building Materials Industry"* also covers nearly 20 to 25 percent of the total as well as fixed capital employed. Those facts signify the importance of 'Building Sector' even in Manufacturing Sector, which in itself is a sufficient pointer regarding the vital and crucial character of the building and construction industry.

* The total productive capital in Paints & Varnishes, Cement, Glass & Glassware, Ceramics, Plywood, Iron & Steel Electric Lamp & Fans is Rs. 205 crores out of the total productive capital of Rs. 1144 crores, and the fixed capital in these industries is Rs. 132 crores out of the total fixed capital of Rs. 544 crores.

Problems of Housing Finance and Investment with Special Reference to India **

By

J. P. Sah†

1. THE HOUSING PROBLEM

1.1 Housing as a problem is not unique to India. There is hardly any country—whether developed or under-developed—in the world today which could justly claim to have 'solved' its housing problem. The world as a whole is estimated to have a housing deficit of about 180 million dwelling units of which 150 million constitute the share of the relatively under-developed countries.⁽¹⁾ In our own country housing deficit in 1961 was estimated at about 7.8 million dwelling units. According to a rough estimate made by the Working Group on Housing Cooperatives a provision of at least 18.0 million houses in the urban areas is necessary to meet the full housing deficit during 1961-76. In rural areas 22.0 million additional houses will be required during the same period, apart from the substantial improvements needed by the sub-standard houses.⁽²⁾

1.2 It is true that the intensity of the housing problem varies from country to country. It is quantitatively and qualitatively much more intense in the under-developed countries than in those which have moved high up in the economic ladder. But the very fact that housing persists as a major problem even in countries like U.S.A., U.S.S.R. and Japan only goes to show how colossal, difficult and complex the problem really is.

1.3 Housing cannot be conceived merely in terms of houses or dwellings. It has to be conceived together with the physical and techno-economic environment in which houses exist. It comprises roads, public utilities like water supply, drainage, sewerage, and community facilities like schools, parks, play-grounds and dispensaries etc. As such, investment in housing in the sense of dwellings alone is incomplete.

1.4 While a dwelling unit satisfies the needs of an individual and his family, the services and facilities—which create the proper environment for the house—satisfy the needs of the community as a whole. In other words, while a house is an item of private consumption, the environment satisfies social-consumption needs. It is important to bear this distinction in mind as it has certain policy implications.

1.5 The problem of housing in the poor or economically less developed countries, particularly those of Asia, Far East and Africa, assumes a more painful complexion because such countries do not only have serious housing shortages, growing additional housing needs and poor housing stocks but are woefully deficient in essential services and community facilities also. A large number out of over

2690 urban, nothing to say of rural, areas do not even now have protected water supply services, drainage and sewerage and adequate roads.

1.6 It has been estimated that in the capital cost of a township for 80,000 inhabitants, housing investment represents only 45% of the total cost. Of the remaining, roads and public utilities alone represent 20 per cent.⁽³⁾ According to estimates made in the Delhi Master Plan, expenditure on community facilities alone amounts to about 25 per cent of the cost of housing.⁽⁴⁾ Thus for every Rs. 1,000/- spent on houses, another Rs. 500/- or so are needed to make houses functionally and socially livable of which Rs. 250/- or so will be needed for community facilities alone.

1.7 Housing is not a static but a growing problem. Rapid urbanisation, particularly in those countries which have just begun to move or make efforts to move along the path of economic and industrial development, implies structural changes in the economy and a drift of population from the rural to the urban areas. As this urban-ward drift of population gets accelerated, it creates the immediate problem of housing the migrants in the receiving urban areas. These migrants come without any money or means in search of jobs which do not exist or exist for a minute fraction of the total number. They cannot afford any rent at all, at least in the initial stages of their settlement in the urban areas. Besides migration, the high natural growth of urban population (2% during 1951-61 in India), the rate of family formation due to increased geographical and economic mobility and perhaps partly due to gradual breaking up of the traditional joint family system add to the magnitude of the housing problem. Exorbitant rents, overcrowding, congestion, slums and squatting are the eloquent manifestation of the worsening housing situation.

1.8 In the economically advanced countries like U.S.A., U.K. and Japan, the problem of housing does not emanate from explosive changes in the volume and structure of population, as is the case in developing countries; for them the problem mainly is one of keeping pace with replacement demands. Due to fast growth in per capita income stress is on better quality and modern style housing accommodation. In this sense the problem may be considered a growing one there too.

2. INVESTMENT IN HOUSING

2.1 Notwithstanding the complexities involved in its rational classification, housing may be said to fall, by and large, in the category of both 'consumption and investment'. This duality in its character

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as an economic category has an element of inherent contradiction. As one of the items of consumers' expenditure it is governed by the levels of personal or household incomes, employment, and the pattern of income distribution and savings in a given economy. Within the limited family budgets expenditure on housing for most of the families has to compete with more essential needs like food and clothing, childrens' education and health.

2.2 In the affluent countries, where peoples' plight is not that miserable, expenditure on housing has to compete with other durable goods the demand for which seems to be rising fast. Housing designs to keep pace with changes in consumption pattern are tending to be costlier while the keenness of people in real estate seems ambivalent. The limitation of housing as an item of consumption or consumer expenditure is thus quite obvious, more so in the case of persons in the middle and lowest income brackets especially in countries with low per capita income.

2.3 Considering housing as an 'investment', two principal agencies making investments in housing may be distinguished, viz.: (1) private entrepreneur/or private owner and (2) public authorities of all descriptions. Private investments, no doubt, contribute the major share of the total housing investment in all countries excepting in few centrally planned ones. In 1962 out of every 1000 dwelling units, privately constructed units ranged from 540 in Austria to 98 in U.S.A. The corresponding figure was over 700 in Switzerland and West Germany and 580 to 690 in many others. In India also private constructions predominate.

2.4 But as regards private investments, it is normal to expect that these investment decisions will be governed by the rate of return on the money invested. And this decision will be greatly influenced by comparative rates of return in other investment channels in the different sectors of the economy like industrial, commercial, banking and financial. If, for example, industrial shares fetch 13 to 17 per cent or more return as estimated by a foreign expert⁽⁵⁾ on the basis of the Reserve Bank Survey of 1001 Indian Public Limited Companies, investment in rental housing will not be made unless income from rents compares favourably with returns from other possible avenues of investment.

2.5 Against the normal expectations of the average private investor may be set the rent paying capacity of the people. The rent paying capacity is determined by the level of personal/family income in the case of individuals and by the pattern of income distribution in the community at large. These two aspects are like two sides of the same medal. Even in a country like U.S.A. having a per capita income of over \$2286 the rent paying ability of families with less than \$3000 annual income is considered a 'serious problem'. Such families form over 28% of the total families in U.S.A. (6).

2.6 India's per capita income for 1960 was estimated at \$68 as against \$1085 of U.K., \$509 of Italy and \$341 of Japan.⁽⁷⁾ The range of variation in income distribution is not precisely known. From 13 of the socio-economic surveys sponsored by the Research Programmes Committee in selected cities of India it is, however, found that about 80 to 96 per cent of the families in these cities (with the exception of Bombay) had a monthly income of

less than Rs. 250/-. Families with less than Rs. 100/- p.m. were over 50 per cent of the families in most of the cities. Families with over Rs. 500/- p.m. income ranged from less than 0.5 to less than 5.0 per cent except in Calcutta and Bombay where the respective percentage was 6.8 to 9.6.⁽⁸⁾ Assuming 10 to 15 per cent of income as the reasonable rent paying capacity, over 50 per cent of the families in India's cities and towns cannot afford more than Rs. 10 to 15 per month rent for their houses. For this mass of needy humanity even the economic rent of a minimum one room dwelling, estimated at Rs. 28 per month by the Ministry of Works, Housing and Supply, is an almost impossible proposition. In as prosperous a metropolis as Delhi households paying less than Rs. 10 per month rent account for 38% of all households.⁽⁹⁾

2.7 Under these circumstances it is logical to infer that no private entrepreneur will feel altruistic enough to sink money in rental housing for the people in the low and middle income groups who constitute the bulk of our population. This perhaps explains why luxurious flats, apartments and bungalows which amortise from exorbitant rental-incomes the total investment within 7 to 10 years are available in plenty in all big metropolitan cities like Bombay, Calcutta and Delhi whereas modest dwellings are nowhere found constructed except by a few owner occupiers, public bodies and industrial concerns. It also follows that it will be futile and chimerical to look at private investment in housing with any measure of hope so far as the housing problem of the masses is concerned.

2.8 Turning to the role of the public sector in the field of housing, the ability of the public authorities to make investment in housing, or for that matter any investment, is in the ultimate analysis dependent upon the level of a country's economic development itself. In countries with low per capita incomes, low saving margins and low rates of growth the public revenues are grossly inadequate in relation to the multifarious pressing needs awaiting fulfilment. The Working Group on Housing Cooperatives has estimated that Rs. 15,500 crores are needed only to take care of the urban housing deficit of 180 lakh units. Against this not more than Rs. 3,000 crores is expected to be available during 1966-76. This magnitude of financial requirement may be about three fourths of the total anticipated fourth plan outlay of about Rs. 20,000 crores.

2.9 On the meagre public revenues there are numerous competing demands which include defence, essential projects and programmes including developmental ones. In an anxiety to strengthen the economy at the grass roots allocations for houses from within the limited public resources are bound not only to be small but also relegated to a very low priority. This is more true of countries which have adopted developmental planning as a means to tackle their diverse problems. In the case of India the outlay for housing in the three five year plans has increased from Rs. 33.5 to Rs. 80.3 to Rs. 142.0 crores⁽¹⁰⁾ but its ratio to total Plan outlay has remained 1.7 in each of the three Plans.

2.10 This happens because housing investment is characterised by high capital-output ratio, lacks 'spread effect' or growth potential in the sense of its direct contribution to further economic growth

and is unable to contribute to foreign exchange earnings. When the option is, say, between an investment of Rs. 5,000 for creating a job in a small scale industry or for constructing a house the choice of a country keen on increasing its national income is quite obvious.

2.11 The limitations of the public sector thus rule out the only salvation of the problem for the teeming millions, namely, construction of millions of dwelling units within the short-term and subsidizing their cost of construction or rents to bring them within the reach of the masses. Both these propositions would, *prima facie*, appear somewhat fantastic because neither construction of houses on a scale commensurate with needs nor the amount of subsidies involved therein are in any way feasible. They are inadvisable too because they will be tantamount to a misallocation of resources in the larger perspective.

3. POLICIES AND PRIORITIES

3.1 The preceding points should have made it obvious that the problems of housing and housing finance and investment reflect the state of a country's economy and are inextricably bound up with deeper fundamental problems of capital formation and economic development itself. By its nature housing investment is inconsistent with low level of per capita income and its inequitable distribution. Any serious and substantial improvement in housing investments will therefore be a realistic proposition only after the economy of the country has achieved a certain level and rate of economic growth and a measure of equity in income distribution. Before that any formidable boost to housing investments may be quite premature and create a rather anomalous situation. It will amount to buttressing artificially high standards of private consumption which the individuals' and society's intrinsic economic ability is unable to support.

3.2 In this context the experience of the centrally planned economies has some good lessons to tell. In the initial stages of planned development the accent in their Plans was on heavy industries and overheads to accelerate the rate of growth. Even the limited allocations made for housing were geared to the objective of economic growth by directing them to areas and industrial units holding key position in the schemes of development. It was only in the latter Plans that housing along with other consumer good industries began to receive adequate attention. There certainly is good logic in this arrangement of Plan-priorities.

3.3 Viewing the problem of housing finance and investment in the above perspective one is sorry to have to reconcile himself to the fact that housing finance will continue to suffer from inadequacy in a country like India for a long time to come. Finance for housing will begin to be available in the required measure only when India's economy has achieved a much better level of development than the one it has today. It will not, therefore, be useful now to lament that the outlays for housing are small.

3.4 Even assuming that finances are available in plenty, these in themselves do no miracle. Finance though an essential pre-requisite for housing is not a sufficient condition for it. The feasibility of constructing houses is seriously limited by the availability of building materials like cement,

bricks, pipes and steel etc. A few figures to illustrate this point may be found instructive. A materials budget drawn up by the Town & Country Planning Organisation for the Delhi Master Plan estimates that for implementing the master plan programme for housing for the period 1961-66 about 325 crores of bricks, 12.2 lakh M. tonnes (12 lakh tons) of cement, 1.42 lakh M. tonnes (1.4 lakh tons) of steel etc. will be required. (14) To manufacture this quantity of bricks about 7.1 lakh M. tonnes (7 lakh tons) of coal will be needed during the period for which (21.4 wagons per day will have to run from coal mines to Delhi. As against the requirement of 12.2 lakh M. tonnes (12 lakh tons) of cement and 1.42 lakh M. tonnes (1.4 lakh tons) of steel for housing alone, the total available supply of the same during 1961-66 for all purposes is expected to be 8.12 lakh M. tonnes (8 lakh tons) and .406 lakh M. tonnes (0.4 lakh tons) respectively. There does not seem to be any immediate practical solution of this materials problem. The limitations in the matter of building materials themselves reflect the backward state of the economy characterised by insufficiency and low levels of production.

3.5 The more serious question, therefore, is: how to make the best of whatever limited resources exist for housing or can reasonably be expected. It is, perhaps, true that even within all our limitations we could do better in mobilizing resources for housing and making every rupee yield, in physical terms, more benefits to greater numbers than are available presently. It is this aspect of the problem on which some points are submitted below:

3.6 Since the concept of 'housing' embraces, or should embrace, public utilities and community facilities, priority in investment should be given to these elements of the techno-economic environment rather than to 'dwellings'. This higher priority for the former is justified because the utility services and facilities do not only meet 'social consumption' needs but also constitute some of the 'economic overheads' whose existence is a *sine qua non* for economic development of any particular area. Investment in these will thus satisfy the criterion of 'the greatest good of the greatest number' and be fully consistent with economic development considerations. Carrying the argument to its logical conclusion one could even hazard an unpleasant observation that in the initial stages of economic development public policy should concentrate on these overheads rather than worry about the provision of houses which could be left to individuals to deal with subject, of course, to land use being determined by the Master Plans.

3.7 Even by conservative standards the houses presently being provided either by private investors or by public authorities (including houses for Govt. servants, industrial labourers and slum dwellers) would seem to be somewhat extravagant in relation to our *intrinsic* economic capacity. It is, therefore, necessary that housing standards are brought down to a scale consistent with what the people and country can really afford. This point would suggest that the public authorities reconsider their present housing standards and policies especially in regard to slum clearance and low income group housing. The excessive emphasis on subsidised housing should be replaced by evolving composite public housing programmes where houses for different income groups are so provided as to make the housing schemes not only self-financing but even yield some surplus.

3.8 The obligation to lower standards has to be cast on the private investors also. Private constructions should not as a matter of principle be permitted to exceed certain maximum standard space per dwelling. The tendency on the part of affluent persons to construct dwellings on lavish space standards must be curbed. Such constructions are wasteful of scarce building materials and have demonstration effect. Perhaps by introducing a system of rationing of building materials, at least in the bigger cities and metropolitan areas, wasteful constructions would be checked. Introduction of a steeply graduated slab system in municipal property taxes may also be considered one of the measures to discourage construction of space and capital wasting-dwelling units.

3.9 Lowering of the housing standards would necessitate relaxation in the existing building bye-laws of the local bodies. Since the housing situation and the quality of houses is bound to improve as economy grows from strength to strength the present housing construction may be permitted on the basis of what may be called 'interim' or 'transitional standards'. Some properly delineated areas within or contiguous to cities and towns may be zoned as 'areas of transition' and especially relaxed building bye-laws may be permitted there for 15 to 20 years. At the end of this period of transition, new constructions should adhere to the normal bye-laws prevailing at that time. It is important to caution that the proposed relaxation will be in regard to dwelling and not with reference to the use of land (e.g., set backs, plot coverage, road-widths and parks etc.) which will have to be as prescribed in the Master Plans. No relaxation in these should be made though even these standards should be evolved realistically.

3.10 Any solution of the problem of housing will be found extremely difficult and costly so long as the land values in the urban areas continue to be high and speculative. To the extent the high land values eat into the allocations for housing, to that extent the number of dwellings per unit of money will get reduced. It is, therefore, imperative that public authorities exercise sufficient control over land and its prices and have a proper land policy. Large scale advance acquisition of land by the public authorities, a reasonable compensation formula which rules out speculative values and plays down the effect of past unearned increases in case of public acquisition of land, a good land disposal and discriminating price policy should be some of the important elements of the land policy to be pursued by the public authorities. Wherever any public authority enters into large scale land transactions, as is being done by Delhi Administration, the surpluses from land disposal could be ploughed back to further land transactions and diverted to financing of housing later on.

3.11 Due to the operation of the social forces unearned increments have been accruing in the land and property values. By mopping up a significant part of the unearned increases and by ploughing them back into housing field may provide good source of finance for housing. Suitable taxation measures for mopping up unearned increases need serious consideration.

3.12 To reduce the per unit cost of houses, the use of local materials must be encouraged. In those areas or regions where local building materials like,

say, stone and laterite blocks, are easily available the use of scarce building materials like cement should be discouraged. This would, of course, be subject to comparative cost considerations. This has been suggested quite often by U.N. experts groups etc. but achievements are hardly significant. Standardisation and mass manufacture of building components should be undertaken as this will lead to reduction in the cost of building components through economies of scale. Besides these measures the expansion of building material industries should be given priority in the Five Year Plans so also research in building designs.

3.13 There is also need to mobilise to the maximum extent possible the resources of the people so that savings begin to trickle in from right-now to form, over a reasonable period, a pool of investible surpluses which could be channelised in housing. In a low income economy savings would entail some restraints on consumption on the part of the people. To the extent consumption is restrained and savings are institutionalised, the mobilisation of resources with the avowed intention of making houses available at some future date when conditions are propitious will relieve inflationary pressures during the period the savings stay-out in the financial institutions. The small bits of savings will, no doubt, make a large number of persons who would not otherwise have been able to possess a house, financially house worthy.

3.14 For the people to save for housing a wide, variegated net-work of financial institutions is necessary. It is observed that the relatively under-developed countries like those of Far and Middle East and Africa suffer from an absence or inadequacy of such institutions while the advanced countries like the U.S. abound in them. Even where a few institutions exist they lack strength and vitality. The cooperative housing societies in India are an illustration in point. Reviewing the progress of housing cooperatives in India, the Working Group found that "it had not been encouraging. Housing cooperatives numbering 6458 formed less than 2% of the total number of cooperatives in India and their membership at 3.8 lakh was just about 1% of the total membership of cooperative societies at the end of 1960-61.⁽¹³⁾" In our country we do not even have an organisation at apex which might have assumed leadership in the field. Only five of our States have State Housing Boards so far established. The fostering and strengthening of the institutional and organisational arrangements is necessary to promote savings for housing investments. The Life Insurance Corporation could definitely play a very significant role in promoting housing investment. Linking up of life policies with housing investment may produce good results. It may, however, be submitted that the basic issue is not how to mobilise finances for housing but one of creating resources—financial and material for which there, unfortunately, is no short-cut.

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Role of Housing and Building Investment in the Present Recession***

By

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1. The presence of recession in certain sectors of the economy, amidst general inflationary pressures, adversely affecting the envisaged growth pattern is a common experience of many developing countries. In India, for instance, recession is witnessed for sometime past, in certain vital industries, such as, cement, engineering and steel which have a direct bearing on housing and building activity. The objective of this paper is to point up the effective role housing and building investment can play in combating recession if more prominence is assigned to it in the strategy of overall economic development.

2. It will be no euphemism if we say that in many developing countries housing and building activity is viewed more as a social welfare compulsion than as an economic activity by the Governments; housing finance is considered as an unavoidable social expenditure. Consequently, economic plans in these countries are content with mere allocation of resources, more in sympathy than on any scientific basis, for a targeted number of houses/buildings to be constructed in a planned period. Owing to lack of proper coordination between the Central and federal units and due to the lack of any coordination between investment in construction sector and investment in other mutually inter-related sectors, housing and building activity plan remains mere a paper plan.

3. Defective institutional frame-work for housing investment is, to a large extent responsible for not only the lop-sided development of construction activity as between urban and rural areas but also for aggravating the housing problem when once the constraints on building activity slacken in the economy. In many developing countries building activity has been, by and large, the domain of the private enterprise. Compared to its role, measured both by the size of actual investment and number of units constructed the role of the State appears to be marginal if not symbolic. Large investments are made in urban areas, especially in metropolitan towns, with a view to earning substantial profits. With the increasing rate of urbanization and rise in population, pressure on dwelling units increases while stimulus given to industrialization by economic planning leads to greater demand for office and factory buildings. Besides, urban real estate has become a convenient venue in many developing countries to conceal, at least in part, ill-gotten money through speculation, hoarding, black marketing and tax-dodging. Private enterprise being "profit-oriented" naturally concentrates in urban areas ignoring the rural needs.

4. The role of the State in the developing countries is not significant in this regard. The increased emphasis focussed on industrialization, exports and to a lesser extent on agriculture has resulted in pushing the construction sector into the dark. It is not surprising that in a society where man is made subservient to machine, industrialization takes precedence over the human aspect of life! For instance, in India, total number of housing units constructed and investment made during the three Plans were only 4 lakhs and Rs. 262 crores respectively.⁽¹⁾ Though the Third Plan made a provision of Rs. 122 crores for housing, actual expenditure on this account amounted to Rs. 87 crores or 72 per cent only.⁽²⁾ The main reason given for this short fall in utilization is that the State Governments did not give high priority to housing. Shortage of building materials, scarcity of land especially in urban areas, high wages and rising constructional costs also contributed to the slackness in building activity.

5. The difficulties in assessing and in solving the housing and building problems are manifold. There are no agencies or organisations which systematically collect reliable data in this regard; we have to depend on official estimates which are very few and on "guesstimates" which being unreliable are in plenty! Studies relating to the pattern and quantum of investment in housing and building in urban and rural areas and their impact on mutually inter-related sectors of the economy have not been made so far. For instance, the problem of housing in India staggers one's imagination. Even on the modest assumption that a housing unit in urban and rural areas will cost Rs. 10,000 and Rs. 3,000 respectively, it requires at least an investment of Rs. 30,000 crores to wipe out the present shortage in housing which is estimated at 114 lakhs in urban areas and 627 lakhs in rural areas.⁽³⁾ With the rise in population at the rate of 5.4 per cent in urban areas and 2.5 per cent in the country as a whole and fast spreading urbanisation, the demand for investment in housing units will be much larger than this estimated amount. What has been done so far in this regard has not touched even the fringe of the problem. During the last fifteen years (1951-1966) both private and public sector agencies had constructed only 60 lakh housing units involving an investment of Rs. 2,500 crores. During the Third Plan period alone we find that only 60-65 per cent of the amount provided in the Plan could be utilised; as against 4 lakh houses envisaged only 2 lakh units were constructed. Though the allocation of funds for housing in the Fourth Plan has not yet been finalised the original figure of Rs. 530 crores suggested is likely to be slashed; the latest

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(1) The Annual Report of the Ministry of Works, Housing and Supply; 1966-67, p. 53.

(2) *Ibid*; p. 52.

(3) *Vide* speech of Shri Jaganath Rao, Union Minister for Works, Housing and Supply at the State Housing Ministers Conference, Madras, November 8, 1967.

annual report of the Ministry of Housing and Supply refers to Rs. 313 crores as the likely amount for housing in the Fourth Plan.⁽⁴⁾ From this it is evident that housing and building activity has not been given sufficient economic significance in the Five Year Plans. Mere financial budgeting cannot be a substitute for physical planning of housing and building construction.

6. It is imperative to recognise that housing and building investment should not be viewed in its isolation, different from the strategy of overall economic development but should be seen as an integral part of planning, affecting and being affected by developments in other sectors of the economy. The predicament that developing economies under planning face during recession is mainly due to ignoring this simple economic truism. So long as the demand—pull and cost push phenomenon is prevailing all the sectors of the economy, the State could afford to have complacent attitude towards construction sector. But with the recession hitting the vital sectors, construction activity compels greater attention.

In India, the present recession is due to demand resistance. Costs have not declined owing to overall inflationary pressures in the economy. Hence, the solution is not that simple as to cut the costs and thereby the prices to fight the recession. Stocks are piling up with rapidity in many recession hit sectors. For instance, cement, which ranks next in importance to iron and steel as a developmental commodity has at present manufacturing capacity of about 12 million tonnes. Vast expansion programme was recently undertaken after its decontrol in January 1966 with a view to attaining capacity of 20 million tonnes for the industry as a whole by 1970-71. At this juncture the industry is faced with recession. The off-take has been very low. Stocks of cement stood at 208 thousand metric tonnes in May 1967 as compared with 142 thousand metric tonnes in May 1966. Though cement manufacturers agreed to earmark 50 per cent of their production for the Government under a rate contract, the off-take on Government account has gone down substantially to about 30-35 per cent due to the slow-down in implementation of public sector projects. Because of recession, construction activity in the private sector has slackened. Similar is the position in other sectors facing recession. Stocks of pig iron and finished steel (producers) were 210 thousand M. tonnes (207 thousand tons) and 240 thousand M. tonnes (237 thousand tons) in April 1967 as compared with 179 thousand M. tonnes (176 thousand tons) and 171 thousand M. tonnes (168 thousand tons) respectively in the corresponding period of last year. In the engineering sector, the position is equally bad. Stocks of diesel engines and motor vehicles were 4,885 and 3,854 in May 1967 as compared with 3,834 and 1,943 in May 1966. While production showed significant increase in coal (including lignite) from 4,385 thousand metric tons in 1960 to 6,127 thousand metric tons in 1967 (May), huge stocks accumulated at pit heads; stocks at the pit heads were 6,156 thousand metric tons in May 1967 as compared with 5,000 thousand metric tons in May last year. Consequently expansion plans have to be curtailed. This in turn feeds the intensity of

recession. The present phenomenon cannot be combated with isolated measures in individual sectors which are experiencing recession.

7. By a judicious choice of investment in housing and building on a massive scale in urban and rural areas, we can achieve the twin objectives of accelerating construction activity and also give fillip to sectors which are hit by recession. Private capital being profit-oriented is likely to show resistance during the recession period. Therefore the State can neither remain a distant spectator nor a dormant partner in the construction sector. It has to intervene in building activity and it has to do so effectively both in terms of volume of investment and functional efficacy. While by offering incentives and concessions it can give stimulus to private investment in building activity, it should provide leadership and direction by directly involving itself in constructional activity.

7.1 Measures for stepping-up Private Investment

Rent control legislations, soaring urban land prices, high cost of building materials and rising wages dampen the enthusiasm and initiative of the private entrepreneur. The tight money conditions in the money market and the high rates of interest for borrowing do not lure him into construction business, especially during recession period. The following suggestions are made with a view to stimulating demand for houses/buildings and facilitating larger flow of private investment into construction sector.

(1) In developing economies, owing to high degree of illiteracy, ignorance of even the meagre resources available for construction purposes is to a large extent responsible for low demand especially in rural areas. Therefore it is necessary to establish housing advisory boards or councils both in urban and rural areas which will disseminate and furnish all information regarding facilities (such as finance, building material, etc.) made available by different agencies to individuals for housing and building purposes. These boards/councils should also be able to advise on constructional procedure and provide information regarding architects/contractors whom the prospective house builder can approach.

(2) Housing is an integral part of rural and agricultural development. Therefore housing finance should be integrated with co-operative finance. The co-operative banks in developing economies should consider housing finance as one of their main functions. Further, at present fertilizers, ploughs, implements, iron railings for cards, etc. are distributed through co-operatives for agricultural operations. Similarly, cement and bricks which are vital for construction can be channelled through these institutions at subsidised or cost-price for genuine constructions in rural areas.

(3) In urban areas, commercial banks can break fresh grounds by extending credit for housing activity. In almost all the developing countries banks find no inhibition in rolling over credit and extending medium term loans. With a little liberalization of the definition of "medium-term loan" banks can extend credit to housing sector, where unlike in agricultural sector, cent-per cent security is offered against the loan extended. When once housing is recognised as a "priority sector" on par with ex-

(4) According to the Reserve Bank of India's estimates the likely investment of private sector in housing and building in the Fourth Plan will be Rs. 1,870 crores, of this Rs. 1,070 crores; and Rs. 800 crores will be in urban and rural areas respectively.

ports, all objections of central banks in these countries can be adjusted through legislative amendments.

(4) Unlike in U.K. and U.S.A., there are specialised private sector institutions in developing countries to finance housing. This is mainly due to the absence of mortgage market for real estate. Steps may be taken, as has been done in the case of bill market in India, to develop a mortgage market for real estate.

(5) The growing industrialization and the consequent rise in employment in developing countries are accentuating the gravity of housing problem. If not by legislative compulsion at least through evolving a code of conduct, employers should be made to provide housing for their employees, especially in urban areas. A certain percentage of gross profits should be earmarked for this purpose every year for a specified proportion of the permanent employees. Thus, over a few years, the employers will be able to solve the housing problem of their employees. After all the houses so constructed being as much an asset as say the factory buildings of the employers, they cannot be considered as an unproductive expenditure. Cement, engineering structures, and other constructional materials sold to and purchased by such employers, may be given tax concessions. This suggestion not only will give a fillip to construction activity and solve the employees' housing problem but also will increase labour productivity and efficiency.

(6) Provisions regarding the use of provident funds of employees may be liberalised so as to include facilitating their investment in housing.

(7) Tax concessions may be given to products of recession hit industries which have gone into actual housing activity, such as cement, steel, etc.

(8) In some developing countries income-tax rebates are given on commodities like motor vehicles, etc. Similar rebates may be extended to houses constructed during the recession period. This will be an incentive to attract private savings in construction sector.

8. MEASURES FOR STEPPING-UP PUBLIC INVESTMENT

Massive intervention by the State is imperative in developing countries if the staggering housing shortage is to be wiped-out within 5-10 years. The present attitude of leaving the lion's share to private enterprise, especially under recessionary conditions, needs a radical change. In addition to substantial allocation of funds for housing and building construction, machinery should be set up by the State to evaluate the progress of the activity in this regard in different regions of the country. It is essential to identify the bottlenecks and the factors that hamper the progress from time to time. For instance, in India, the absence of such a machinery has led the centre to blame the States for not utilizing fully the resources allocated to them. Secondly, housing and building should be an integral part of project-planning either in private or in public sector. This is however being done in India by some public sector projects like Hindustan Machine Tools. Thirdly, planning strategy in developing economies has to be shifted substantially from urban to rural areas. Given the same economic advantages in urban and rural areas, industrial units should be located in the latter. Concomitant to this will be higher employment and increase in rural incomes which would release greater purchasing power to facilitate housing construction. Last but

not the least in importance is the effective role the financial institutions in the public sector can play in giving a fillip to housing and building activity and thereby in activating the sectors facing recession. Construction industry should be recognised as a priority sector by these institutions and adequate financial assistance at a relatively low rate of interest should be made available for housing and building purposes. In case of such borrowers, besides giving rebate on interest for prompt payment, rebate may be given also on the basis of number of housing units built and the magnitude of investment involved. This will stimulate construction activity.

The need for increased participation of insurance companies, either private or nationalised, in housing and building activity is very great in developing countries. With initiative, imagination and dynamism, these institutions can play an effective role in construction sector.

Housing is an effective medium for channelling savings into investment activity in many developed countries. In developing economies it appears that not much emphasis is laid on this aspect in mobilising larger savings for attaining a higher growth rate. As compared with many developed countries, the proportion of investment in "dwellings" to gross domestic capital formation is very low in developing economies. For instance, in 1964, it was as high as 27 per cent in France, 26 per cent in U.S.A. and Belgium and about 20 per cent in U.K. and in Canada, whereas it was as low as 6 per cent in Thailand, about 10 per cent in Malaysia and a little less than 10 per cent in India.

The absence of specialised institutional framework for financing housing and the indifference or "periphery" participation of existing financial institutions in housing investment are largely responsible for the present state of affairs in these countries. If institutional investors like insurance companies enter construction sector by employing significant proportion of their investment in building activity (for dwelling and office purposes), the savings rate in the economy can be considerably raised. In India, the Life Insurance Corporation at present is participating in housing activity in a limited way by providing housing finance directly to policy holders under its "Own Your House Scheme" and by lending funds to State Governments and to co-operative societies for housing and building purposes. However, the amounts so granted are very meagre as compared to the magnitude of the problem.

Rough estimates indicate how small is the role of insurance companies in the total savings mobilised in the country. For instance, life funds in India constituted 5.6 per cent of total savings in the economy and 7.4 per cent of savings in the household sector in 1965-66. This clearly indicates the need for insurance companies to widen their activities with a view to mobilising larger savings of the community in developing economies. Construction sector offers great scope for insurance companies for this purpose. With their greater access to individuals through their large net work of agents, officers, etc., the insurance companies can literally take houses to prospective buyers. The following scheme, which was successfully experimented in Madras by a life insurance company before nationalisation, is worthy of consideration in this connection.

Insurance companies, whether nationalized or private, in developing countries should embark on building housing units, especially for middle and lower middle income groups, in selected urban and rural centres which experience housing shortage. The selling of these housing units in order to realise the investment made should be coupled with the sale of life policies. Thus, they can launch a scheme of "Own Your House" by taking a policy under which a person who takes a policy of a specified minimum amount will be entitled to occupy immediately a housing unit. The value of the house can be amortized over a specified period of time by including it in the premium. The double attrac-

tion of immediately finding a roof over the head and coverage of risk of life would boost life insurance business and at the same time would contribute to the solution of housing problem, especially in urban areas.

It is doubtful whether prize bonds, raffles, etc, for activizing constructional activity will be successful, especially in rural areas, in developing countries. The not so successful prize bond scheme witnessed a few years ago in India is a pointer to this. What is called for are concrete measures which pave way for realizing houses with bricks and concrete.

Public Housing as a Tool for Investment and Welfare*

By

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1. WHAT IS PUBLIC HOUSING

Broadly speaking, all housing is public housing in the sense that quantitative and qualitative aspects of the existing housing stock as well as the new residential construction are matters of nation-wide concern. However, in specific terms, 'Public Housing' implies dwellings that are owned by the Central, State and Local Governments or a governmental agency or a public body. In common usage, the distinction between the public and private housing is drawn on the basis of ownership. Public housing has also been defined in terms of the source of finance. It will, therefore, consist of dwellings whose capital cost is financed by a governmental agency or a public body. It does not include dwellings which are owned by private investors or private profit-making organisations.

2. ROLE OF PUBLIC HOUSING IN THE NATIONAL ECONOMY

2.1 Public Housing plays a very important and multiple role in the economic and social growth of a nation. It is a very vital component of investment in the national economy. Public housing is an industry which has very great employment potentials. Further, it is one of the important items that go to make up the 'Social Overheads', necessary for economic growth.

2.2 The housing industry is so large that its condition substantially affects the level of employment and income in the whole economy. Therefore, action to stabilise public housing activity is vital to any policy directed towards the stabilising of the level of employment. It is a well known fact that housing standards are very low in India and their improvement is essential. The allocation of finances to housing is too great relatively to its output. The housing policy which succeeds in improving the standards should secure the production of more dwellings with the same amount or of the same number of dwellings with a substantially smaller outlay. This will have its impact on the level of employment also.

3. HOUSING SHORTAGE

3.1 Investment in Housing has to be considered in its varied aspects, in the context of the housing shortage which prevails at present in India. In spite of the fact that housing plays such a dominant role in the field of social life and economic growth of a nation, it is sad to reflect that India today suffers from an acute housing shortage. The present Housing deficit is estimated at about 21 million of which 10.7 million is in the urban areas and 10.3 million in the rural areas.

3.2 In discussing the shortage of housing, we should consider quantitative as well as qualitative aspects of the problem. Perhaps, the most important aspect of the housing shortage is that it relates, by and large, to the housing for the low-income groups, who constitute the bulk of the population. In a way, the housing problem of India is a problem of providing adequate residential accommodation to the masses, at a rent which they can afford. Because, the few people at the top of the income-ladder are in a position to provide themselves with housing and often have very luxurious and spacious dwellings, which symbolize their social status and wealth, such dwellings are often wasteful of land and building materials and are unwise as an item of investment from the point of view of the national economy. On the other hand, there is a very large section of the population—both in urban as well as rural areas—which is under-privileged and which needs housing of a modest type with at least the minimum requirements. Their per capita income is so low and employment so inadequate and insecure that they cannot pay the 'economic rent'. The gap between the economic rent and the social rent is so wide that the only effective solution seems to be to bridge the gap by governmental subsidies, either in the form of capital subsidy or rental subsidy. However, neither the Central Government nor the State Governments have adequate resources to subsidise housing on such a vast scale. It is, therefore, necessary to explore other means of bridging the gap.

4. THE INVESTIBLE RESOURCES

4.1 The present, over-increasing shortage of housing, in the face of the colossal need, is due to the fact that the physical and financial resources which our country can afford to divert to investment in housing is far too inadequate, compared with the magnitude and complexity of the problem. In those countries which have advanced and highly developed economies, the high 'capital-output ratio', which characterises the housing industry, sets a discount on investment in housing. But in a country like India, where economies are not fully developed, investment in real estate is no doubt possible and attractive, in the absence of other forms of more remunerative investment. However, the quantum of total investment in housing—particularly in the low-income group housing—is too meagre to have any significant impact on the national housing stock. Further, whatever little investment is made in housing, it is in the housing for high-income groups, which pays rich dividends. Private enterprise is shy to investment in the low income-group housing as it is not as remunerative as high-income group housing.

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4.2 In a developing country like India, which is striving to break through the colonial pattern of economy and age-old inertia, there is not only a chronic shortage of investible resources but also investment in housing has to compete with other fields of investment which are more remunerative and hence more attractive. In this competition, housing gets relegated to a low priority. Further, investment on housing has a high 'capital-output ratio'. Moreover, it does not have much 'growth-potential'. No doubt, housing satisfies the basic human need for shelter and indirectly affects the efficiency of labour and reduces many social costs, but it will not create further investible surplus. It will not 're-produce' or 'multiply' itself economically, in the sense that a steel plant or a cement factory or a hydro-electric project may do.

4.3 To overcome these intrinsic difficulties in investment of capital, we have to devise short-term as well as long-term methods. The problem of making adequate provision for housing in urban areas is so stupendous in its magnitude and complex in nature that short-term measures and short-range policies alone cannot solve the problem entirely and satisfactorily. The real solution lies in procuring adequate finances by long-range policies and long-term measures, both in the urban as well as the rural areas, and also in the public as well as the private sectors.

5. PUBLIC CAPITAL INVESTMENT

5.1 Public capital investment in housing is a measure, in the first place, of the extent to which public bodies construct dwellings. Public construction is undertaken so as to ensure that the most urgent social needs are satisfied at a proper order of priority, and that the public interest is safeguarded in the expenditure of capital and of subsidies. Frequently, house construction is also a natural corollary of the provision of other services by public bodies.

5.2 Public investment in housing is a measure of the extent to which the volume of savings available for long-term lending is inadequate and has to be supplemented by public borrowing or by taxation. The encouragement of a higher level of saving is mainly a question of general economic policy, but specific measures adopted in the housing sphere have included the improvement of security of private mortgage loans by public insurance or guarantees and the granting of income-tax concessions on capital lent at long term for housing, whether directly or to mortgage institutions.

5.3 Public investment in housing also consists of funds borrowed by public authorities from private credit institutions; in this case public authorities are not augmenting the supply of capital already available, but merely redirecting it. This is not only done by public authorities themselves constructing dwellings, but they also act as lending agencies for private construction. The reason for the latter procedure is that, as a rule, the terms on which private credit is available are such that a modern dwelling cannot, without public financial aid, be provided within the means of the average working-class income, and in many countries where credit is particularly dear or earnings low. The volume of investment in public housing is governed by the national economic and social policies of the Government and is laid down in the national

economic plan, which stipulates the volume of house construction to be carried out by the State and the construction tasks to be performed by private individuals using their own resources. A good example is found in the five year plans of India which lay down the Housing Policies.

6. MOBILISATION OF RESOURCES

6.1 It is evident that the key to the problem of housing finance is to mobilise, to the maximum extent possible, the resources of the masses, so that the investible surpluses or savings may be diverted to housing. This can be achieved by creating a suitable 'environment'. The environment may be created by providing a net work of housing finance institutions, such as Housing Finance Corporations, Housing Co-operative Societies, Industrial Labour Housing, Savings Banks, Mortgage Banks, etc. In other words, the Government cannot hope to solve this complex problem by its own efforts but has to set in motion a system of 'multiple-incentives', conducive to the growth of housing finance. Thus, institutional finance have to be mobilized for housing.

6.2 In India, we have very few institutions of the type mentioned above, which continuously generate capital for investment in housing. We have not established Housing Finance Corporations even now. The few Co-operative Housing Societies which exist lack strength and vitality. It is true that these financial institutions do not create any surplus, but their existence does provide an incentive to the community to save, whatever they can, and invest it in housing. Such institutions help to mobilize the resources, however, small they may be, which otherwise might have remained dormant.

7. SOURCES OF CAPITAL IN HOUSING INVESTMENT

7.1 There are several sources of capital investment in housing. The number and variety of financial institutions, which often stand between the investors and property owners is great. The various sources of capital investment in housing may be classified into four broad categories namely (a) voluntary long-term investment (b) investment by Insurance Companies (c) Investment by Banks, which receive deposits (d) Taxation and compulsory savings (e) Contribution from the Bank of Issue.

7.2 In so far as the investment in public housing is concerned, the last four sources play a significant role in capital formation for house building. By investing their reserves in real estate, Insurance Companies have played a significant role in housing in many countries, such as the U.S.A. Sweden and Switzerland, where insurance (particularly life insurance) is highly developed. It is estimated that nearly one-quarter of the reserves of the Swedish Insurance Companies is invested in building and these companies are prominent among purchasers of mortgage bonds.

7.3 In almost all countries of Europe and America, Savings Banks are active in financing public as well as private housing. However, the terms and conditions vary from country to country; depending upon the structure of the banking system and the law of property, etc. in each country. By and large, savings banks seem to supply the bulk of the capital required for housing.

7.4 The increasing intervention, in most countries, of the Central, State and Local Governments in the financing of public housing has resulted in Taxation as one of the methods of raising finance. This method has been in practice in West Germany, France and Italy for several years now. In general, it may be said that in many countries voluntary long-term investment in house building is decreasing whereas direct or indirect investment in public housing by governmental or semi-governmental organisation or public bodies is expanding. The financing of housing by industrial undertakings as employers of labour has also been steadily increasing in many countries with highly developed economy. India also has initiated such a policy. In many countries, housing is largely financed by public funds, in which case, it is usually the general reserve of the treasury (taxes, borrowings, foreign aids, etc.) which are used to cover loans, advances and capital subsidies. In such countries public finance predominates over private finance in residential construction.

8. INSTITUTIONAL FINANCES FOR HOUSING

8.1 It is difficult to conceive of the public sector, in the present circumstances, financing in its entirety, the construction of dwellings needed to overcome the acute shortage of housing in India. It is, therefore, necessary to consider ways and means of mobilising private capital for the purpose of house building, especially for the middle and high income groups. Even this mobilization will have its limitations, as the role which private sector can play in various fields of development has already been taken into account in formulating our five year plans. The fact that the private capital is not unlimited and that there is a ceiling to private savings automatically restricts the role that private enterprise can play in relieving the housing distress. It is, therefore, necessary for the Government to promote public housing through institutional finances. For instance, in U.S.A. various institutions, such as Savings Banks, Federal Savings and Loan Associations, Insurance Companies, Building and Loan Associations, Mortgage Associations, etc. invest in Housing. The main purpose of these institutions is to protect the house builders. The Federal Government of U.S.A. assists these institutions through a system of Chartered Federal Savings and Loan Associations, Federal Savings and Loan Insurance Corporations, etc.

8.2 The basic principles involved in financing public housing through institutional finances is to under-write private risk, public credit by means of insurance, setting up credit and market reserves and indemnifying lending institutions in case of mortgage loss or default. It is only then that it will be possible to attract capital which is otherwise shy of entering housing finance.

9. NEED FOR A PUBLIC HOUSING POLICY

9.1 Public housing as a state policy has developed very well in Europe, United States, Canada, Australia and many other countries. In these countries public housing policy has been responsible for a substantial proportion of house building activity for the past few decades. In fact Public Authorities who own and build dwellings have become an important source of supply of housing. Emphasis is however, placed on the provision of dwellings for the low-income groups whose needs had hitherto been inadequately met by private enterprise.

Public housing policies depend principally on financial support from public authorities in the form of subsidies and credit facilities. In recent years, there has been a gradual shift in the attitude and thinking of the Government from one of indifference and inactivity to one of initiative and activity in the field of housing. There is a general awareness of the need for a sound housing policy. Housing is no longer considered as a field to be left exclusively to the private enterprise. It is recognised that housing must be first provided to the most needy. It is a matter of direct and active interest to the Government, as it constitutes an important social welfare activity. This has resulted in the formulation of certain housing policies over the past few years.

9.2 The first Five Year Plan of India accepted that the Central Government was directly concerned with the subject of housing in general, that housing was a social obligation, which had to be provided first to those who had the lowest income, that the private enterprise was not in a position to do the job, and therefore the Government had to intervene and provide suitable houses to the low-income group. With this object in view the industrial housing scheme and the slum clearance scheme were evolved. In the Second Five Year Plan the scope of public housing was enlarged by undertaking subsidised industrial housing scheme, low-income group housing scheme, slum clearance and sweepers housing schemes and the middle income group housing scheme, etc. In the Third Plan the scope of public housing has further been enlarged by increasing the outlay and also by taking up housing schemes which will essentially cater to the needs of the lowest income groups, viz., low-income group housing, dock-labour housing, slum clearance, plantation labour housing, etc.

10. SUGGESTION

10.1 From the foregoing discussion it is evident that there is need at present for public housing to be undertaken on a large scale by the Central, State and Local Governments, semi-governmental organisations and public bodies, to relieve the acute housing shortage. One of the first moves in this direction should be to establish 'Housing Finance Corporations' in all the States and also in the large cities and towns, with a view to mobilising funds by various means and from various sources, for public housing.

10.2 It has already been stated that a vast majority of the households in India are able to pay only the social rent and not the economic rent and that the gap between the two can be bridged only by a subsidy. The quantum of subsidy which the Government can afford to pay being limited, other avenues have to be explored. One of the methods suggested is that the Housing Finance Corporation may invest a portion of its funds in housing meant for the high-income group and the upper middle income group and charge them commercial rent and the excess profit derived may be ploughed back into housing meant for the low-income groups to serve as a rental subsidy. This will not put undue strain on the high-income and upper middle income groups; at the same time, it will enable the housing authorities to charge 'Social rent' to the low-income groups.

10.3 A scrutiny of the sample studies of investment in and return from housing in the private sector, included in the Appendix shows that private investment in housing for the high income groups is very remunerative in Delhi. The return is as high as 15% to 20% on the capital invested. In most of our large cities and metropolitan areas, there is considerable demand for housing for the

higher-income groups. Provision of such dwellings by a Public Housing Authority will, therefore, serve a dual purpose; it relieves the housing shortage to some extent and at the same time enables the Housing Authority to subsidise the low-income group housing. Though, this method has certain political and economic implications, it is well worth exploring.

APPENDIX

Comparative Statement of Investment and Return on Housing in Private Sector in New Delhi

Locality	Area of the plot in sq. m.	Cost of the land in Rs.	Floor area of the building in sq. m.	Cost of the building in Rs.	Rent per month in Rs.	Expenditure on tax and maintenance per annum in Rs.	Annual net return	Remarks
Golf Link	313.54	12000	..	63000	1100	1100	13%	..
Golf Link	313.54	12000	..	78000	1500	1500	14.5%	..
Golf Link	313.54	12000	..	68000	1000	1000	11.25%	..
Jor Bagh	313.54	14000	..	64000	1050	1000	14%	..
Defence Colony	271.73	10000	..	55000	1050	1000	14.5%	..
Diplomatic Enclave	313.54	14000	..	36000	950	1000	17%	..
Karol Bagh	344.44	8000	297.28	51200	850	900	16%	Rent fixed in the year 1953.
Karol Bagh	183.94	6600	241.54	45000	900	900	19.5%	..
East Patel Nagar	142.14	3400	167.32	28800	500	500	17.6%	Rent fixed in the year 1959
East Patel Nagar	142.14	2050	176.59	27000	520	500	19%	..
East Patel Nagar	142.14	3400	83.61	14000	280	300	17.6%	..

Mortgage Finance and Mortgage Insurance of Housing**

By

Dr. S. K. R. Bhandari†

1. CLASSIFICATION OF FUNDS

1.1 If we wish to approach the task of raising funds for housing in a sound way, then the first thing is to know something about the supply of funds; the factors affecting the flow of funds for housing have to be properly understood.

Funds may be basically classified as External and Internal depending on the source from which they are generated; the former coming from companies, financial institutions, governmental agencies, etc., that is, from outside that particular enterprise—whether an individual one or group effort, while the internal funds represent the resources of the individual or group itself. We are not at the moment concerned so much with the internal funds (though they are an important and basic source of housing finance). The basic factors affecting the supply of external funds may be grouped as (i) Savings (ii) Interest rates (iii) Price levels and (iv) Taxation. Without going into the details of the bearing of these factors on the supply of external funds, let us examine the sources of funds and the different types of funds.

1.2 The major sources of funds are : (i) Savings of private individuals (ii) Savings of individual businesses which cannot be employed profitably in their own business and (iii) Savings of the public which have been channelised through institutions like insurance companies, banks, investment companies, etc. (iv) Funds from governmental agencies.

1.3 The next thing to consider is the different types of funds and the methods of raising them. They may be considered separately for sole-owners and partnerships on the one hand and for corporate bodies on the other.

(a) Types of Funds for Sole-owners and Partnerships :

- (i) Proprietors' Capital;
- (ii) 'Mortgages'—a legal conveyance of the property to the mortgagee (or the lender);
- (iii) 'Loans on Bills of Exchange and Promissory Notes'—which provides an acceptable evidence of debt though it provides no security.
- (iv) 'Guarantees'—an undertaking given by a person to pay a debt due by another in the event of his default.
- (v) 'Hire-purchase'—Wherein the property purchased does not pass to the buyer till the full payment has been made to the seller.
- (vi) Bank finance (including financing by other financial institutions).

(b) Type of Funds specially available to Corporate bodies (including joint Stock companies and Cooperative Societies) :

- (i) 'Shares'—(equity, preference and others) representing proprietors' capital.
- (ii) 'Debentures'—(including mortgage debentures) interest on these funds being a tax deductible expense, they give a certain amount of tax advantage.

2. CHARACTERISTICS OF HOUSING FINANCE

2.1 Investment in housing, like most forms of investment, has been financed by a combination of internal and external funds. However, the capital funds that enter the residential sector differ substantially in character from the funds which finance other capital sectors. Firstly, the bulk of housing investment (excluding direct investment by Government) represents the purchase of a consumer durable, with the closest approximation to internal funds represented by down payments and external funds for the most part supplied by borrowing on mortgages. Decisions as to the type of funds or more likely, as to the relative proportions of both type of funds (internal and external) that are to be used, are not based on the same determinants as are business decisions. In the acquisition of new houses, the choice is largely determined by the liquid assets (or other holdings convertible to liquid assets) of home purchasers and by the maximum amount obtainable from mortgage lenders. The relative costs of different types of funds compared with anticipated net yields, which are so very important in business financing, are of less importance in the choice between internal and external financing for acquisition of new housing facilities. Income tax considerations, which enter significantly into business decisions on the type of funds used, also have less influence in determining the proportion of borrowed funds in the financing of new housing construction.

2.2 A more important difference is that the internal funds used for the acquisition of new residential real estate are almost entirely derived from the personal savings of individuals or groups of investors and almost never (even in the case of large rental properties), from depreciation reserves accumulated in the operating of existing property. While all residential structures are depreciable assets and while depreciation is an important tax consideration for the owners of income property, from an investment point of view depreciation funds are intentionally accumulated by the owners of residential houses with the object of providing for the replacement of worn out or obsolete assets. Demolished or deteriorated structures are replaced generally not by the current owners but by other investors.

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2.3 Any analysis of internal sources of capital funds in housing investment would require an analysis of the use of personal savings and personal holdings of liquid assets; this is subject outside the scope of present discussion. The sources of external funds, on the other hand, are limited chiefly to the mortgage market (including the Government). Unlike customary practice in most of the other industries, external funds for residential real estate are obtained only in the rarest instances through public share issues (though co-operative societies do raise some funds—a very small part of course—through ownership capital-share capital and deposits from members) and only somewhat less rarely through non-mortgage borrowing. No data is available even in the advanced countries to indicate the amount of the latter and even in those cases where it is there it is of a temporary character.

Thus it is clear that mortgage financing is one of the most important sources of housing finance. We can now examine the various types of mortgage financing, the terms on which they are taken, the agencies participating in mortgage financing and the part they play in housing finance.

3. MORTGAGE FINANCING

3.1 As stated earlier, mortgage is a legal technique whereby the borrower transfers possession (and/or hire) in his property (which may be land, buildings, plant and machinery, shares and securities, gold and jewellery or any other property) to the lender as a security against the loan agreed to be taken by him. Loans taken for the purpose of buying or building a house are generally secured through a mortgage on the land and house to be bought or built. The idea is that if the borrower defaults the lender gets a right to dispose of the property and realise the amount of principal and interest. Since the lender does not have to run the risk of losing the money lent by him he will be prepared to grant the loan at a lower rate of interest than what he would like to charge if the loan was unsecured or which he would not have granted at all. Thus mortgage is a financing technique which safeguards the interests of the lender on the one hand and on the other hand it makes it easier for the borrower to raise funds and reduces the cost of raising them.

3.2 Mortgages may be first mortgages or junior mortgages. A first mortgage involves a prior charge on the property, *i.e.*, if the mortgager defaults the first mortgagee straight off gets a right to the property mortgaged. In a junior mortgage, the mortgagee does not have the first right, he has to wait for the settlement of his claim till the prior mortgagee/s has secured his payment in full. Thus it necessarily implies that the property has been mortgaged to two or more parties each having a right before other. Junior mortgages will arise only when more than one loan has been raised on the security of the same property. But the total value of all the loans raised will still be less than the value of the property mortgaged. Since the junior mortgagee runs a greater risk than the first mortgagee, he will invariably charge a higher rate of interest than the first. A large bulk of mortgage debt is represented everywhere by first mortgages.

But when property values rise faster and rental incomes increase (as it happens in large and developing cities) there is a tendency to raise further funds through junior mortgages. For instance, during the twenties there was a large increase in junior mortgages in the United States, which resulted in over-financing and led to speculation in real estate. Instances could be found where housing corporations raised almost 100% of the value of the houses through mortgage loans. As a matter of public policy Government should discourage much junior financing. In order to make housing operations unspeculative it is absolutely necessary that the owner puts a part of the cost of the house out of his own funds, before he becomes entitled to a mortgage loan.

3.3 A leading authority on corporate finance has observed that "all things considered, there has been no field of promotion, encouraging ostensibly legitimate enterprise, so riddled with graft, deception and duplicity as the promotion of real estate corporations." (1) This has happened to a limited extent in India also. The case of Delhi is very pertinent. Many real estate companies have been floated on such bases. Mortgage loans, whether first or junior, may further be guaranteed or insured or just clean mortgages. In order to encourage housing operations Governments have started insurance and guarantee schemes under which the security of the lender is further increased. In accepting housing property as mortgage security the lender runs a lot of legal hazard due to likely defects in the title of the borrower. Banks, life insurance companies, co-operative societies, savings and loan associations and other agencies are not prepared to assume the legal hazards involved in real-estate mortgage financing. But if some Governmental agency or an insurance company guarantees the repayment of loan by the borrower the hazards disappear. A guarantee and an insurance scheme are not very much different except in form. An insurance would enable the borrower to get payment immediately he gives notice to the insurer of default on the part of the borrower, whereas under guarantee schemes there are some more formalities. In the United States insurance and guarantee schemes were sponsored by the Federal Government during the thirties as a part of the 'Rooseveltian New Deal Programme'. Special agencies have been set up for the purpose and the Federal Housing Administration ensures that the loans granted by financial institutions were repaid to them on time. The veterans Administration also guarantees the loans granted to Veterans. This has resulted in increasing mortgage financing appreciably. The total mortgage debt in the United States, which stood at little over one billion dollars in 1890, went up to 6 billion dollars in 1920, increasing at an annual rate of \$165 million. But from 1920 to 1940 the period during which insurance and guarantee schemes were introduced, the growth was much faster, *viz.* \$250 million a year, the outstanding debt having gone up to about \$11 billion. It should also not be forgotten that during this period property values had been very low, the total market value of mortgaged properties had gone up by 50% only, *i.e.* an annual growth rate of 2.5%, compared to a growth rate of more than 4% in the case of mortgage debt.

The figures presented by a survey of residential finance conducted in the United States by the

1. Arthur S. Deuring, 'Corporate Financial Policy', Vol. 1, p. 502.

National Bureau of Economic Research in 1950, (*) revealed the part mortgages are playing in the financing of housing projects in that country. The

following table gives the market value of property and outstanding mortgage debt from 1890 to 1950 in respect of one to four dwelling properties :

	1950	1940	1920	1890
Total No. of Properties	8,287,999	4,804,778	2,855,117	807,93
Number Reporting	8,251,815	4,474,361	2,735,668	N.A
Total Value-mil.	80,185	21,043	14,099	2,639
Total Debt. mil.	33,754	10,999	6,000	1,040
Average Value	9,675	4,703	4,938	3,250
Average Debt	4,073	2,458	2,103	1,283
% Total Debt to Total Value	42.1	52.3	42.6	39

We find that even in 1890, when the number of small houses was about 8 lakhs, 39.8% of their total value was represented by mortgages debt. During the next six decades there was a substantial increase in housing activity. The growth in the number of houses was no doubt due to the increase in the national income of the country and the general increase in economic prosperity, but the fact that the debt-value ratio went up to 52.3% in 1940, clearly reveals the increase in the importance of mortgages as a method of financing. The figure of 1950 (42.1%) is really not comparable because during this period there was an abnormal increase in property values (10.6% annually over 10 years). The average mortgage debt per unit has been constantly increasing—it has outstripped the increase in property values in the U.S.—whereas there was an increase of 214% (1890 to 1950) in average debt; the average value per unit has increased by 197% only.

The survey also revealed that the loans granted by the Governmental agencies bore a much higher percentage of the purchase price of the property than those granted by financial institutions or individuals. Similarly, the loans which were subject to federal insurance, or guarantee were larger than the clean loans. Not only has average size of mortgage increased, but it now bears a larger proportion of the value of the property, because the risks have been considerably reduced.

3.4 Classification of Mortgages.—There are different ways of distinguishing mortgage debts, depending upon the tenure of loan, the rate of interest it carries, the debt-value ratio, its amortisation and other practices.

3.4.1 Term of Loan—Mortgages may be for small periods of 1 to 5 years, or they may be medium-term loans of 5 to 15 years or long-term loans. The trend has been to shift gradually from

smaller to longer term loans. The tenure under government programmes is invariably longer than in others. In 1950, average term for all mortgage loans in the United States was about 12 years, whereas that under federal programmes was 20-25 years. The commercial banks (which it would be observed later have become an important source of mortgage finance under the impact of Government guarantee schemes), lend for smaller terms, and so do individuals. The Life Insurance Companies also lend for fair & long terms. The medium term of mortgage loans in 1934 was 5 to 14 years, which went up by 7 years by 1950. In the U.K. too, because Governmental agencies grant long-terms mortgages the average tenure has gone up. In India, the average tenure of mortgages has gone up. It varies from 20 to 30 years under Government schemes and in most cases it is 25 years. The Life Insurance Corporation of India, which has entered this field recently, grants loans for 25 to 30 years. There is no data available to show the average tenure of other mortgages. It has also been found that the tenure of loans on rental properties is longer than on owner-occupied properties.

3.4.2 Rate of Interest—Then mortgages may be high interest mortgages or low interest mortgages. In Germany the rates on mortgage loans are usually high, whereas they are fairly low in the United States. The National Bureau Survey of residential finance in U.S.A. revealed that the rate of interest has displayed a well-defined downward trend. Whereas in 1890, 41% of the debts carried more than 6% interest, it was 20% in 1920 and in 1950, only 3% of the debts carried an interest of 6% or more. In 1890, only 1.7% of the loans had less than 5% interest, in 1950 over 45% of all mortgages carried less than 5% interest (more than 25% were taken at less than 4% interest. Then again, for obvious reasons the rate of interest on rental housing is usually lower than on housing for owner occupation.

3.4.3 Amortisation—Mortgage loans may either be repaid in one instalment at the end of a fixed period, when it is termed as a straight or unamortised mortgage, or periodic re-payments may be made by the mortgager. The periodic payments may either be made regularly over the period of the loan, say monthly, quarterly, half-yearly or annually or they may be made at the sweet will of the mortgager. Mortgage loans may be fully amortised or partially amortised. It is common experience that the mortgages generally prefer regular payments of uniform amounts. The Governmental agencies and institutional lenders usually insist on regular re-payments and these amortisation terms are a regular feature of loan agreements. Non-payment of the instalment due may, and usually it does, involve payment of penal rates of interest. The inclusion of amortisation terms makes the loan more attractive to the mortgagee and it imposes lesser burden of interest charges on the mortgager because the interest is generally charged only on the balance due. In those places where house rents are high, the instalment (which includes repayment of interest and part of the principal) may be equal to or even less than the rent that may be payable for the house if it was not owned. This results in the building up of property at the end of the loan period, without much burden on the owner. The realisation of the advantages of fully amortised loans has led to an increase in the proportion of amortised loans. In the United States, for instance, in 1950, 85% of the loans were fully amortised, 8% partially amortised and only 7% unamortised, whereas in 1940 the unamortised loans were about 18%. Special surveys carried out in different cities in the U.S. revealed that in 1934 the unamortised loans were a minimum of 20% in Providence and as high as 41% in Minneapolis. By 1950 in most of the large cities the percentage had dropped below 5% (being as low as 0.2% in Seattle). This move away from straight mortgages got underway in the 1930's on the initiative of Governmental agencies. For instance, the House Owners' Loan Corporation converted all delinquent mortgages into fully amortised ones and in 1934 the Federal Housing Administration made full amortisation compulsory. In India, all the housing loans granted by the Central and State Governments, the L.I.C. and the Co-operative institutions are fully amortised and usually carry penal rates of interest for delinquents. The administrative arrangements for the collection of instalments on loans granted to Government employees are very simple, viz. monthly deduction from salary in India. But those for others are not so satisfactory. The loanees have to undergo considerable trouble and harassment in depositing the instalments due from them. The procedure for the collection of instalments could be very much simplified if the receiving agencies open special bank accounts and accept cheques or drafts from the loanees, instead of insisting on cash deposits in Treasuries through the inconvenient method of pre-authenticated treasury-challans.

The chief advantage in having fully amortised loans lies in the fact that they provide a revolving fund in the hands of lending agencies so that they can continuously increase lending operations without putting in additional capital funds, which are in any case so scarce in developing countries. In course of time the schemes can become self-financing because the entire revenue, capital repayments and interest, can after meeting expenses, be utilised for granting more loans.

3.4.4 Debt-Value Ratio—There is no uniform practice as far as the proportion of the loan to the value of the house is concerned. There may be very large variations in such debt-value ratios ranging from 20%, in the case of several large rental buildings constructed in large cities to 40% in the case of loans granted by some individuals. The ratio is directly related to the amount of risk the lender has to take. Generally, high debt-value ratio loans will be those which are (a) fully amortised (b) guaranteed or insured and (c) which carry a higher rate of interest. Then again, it will depend upon the agency or institution granting it. Since Governmental agencies grant such loans for encouraging house building and they also have immense powers of recovering their dues, they grant a fairly high portion of the cost of construction as loans. In India, the ratio on Governmental and Government-sponsored loans is 80%, though in actual practice it may only be 60 to 70% because cost of construction usually increases after the grant of loans. Since real estate values are subject to large fluctuations, it would not be a very sound policy to have a very high debt-value ratio. The present ratio of 80% should be considered to be the maximum. This is also necessary to ensure the maximum amount of house-building. Public funds should not be a substitute for private funds but they must be a method of drawing out private funds for productive purposes. In no other field of private activity, can public funds play a more important role in attracting private investment than in house-building. The Government funds should not be utilised for loan operations only but also for guaranteeing loans that may be granted by other agencies.

3.5 Sources of Mortgage Finance—Broadly speaking the sources of mortgage finance for house-building may be classified into individual, institutional and Governmental sources. Till the beginning of the present century the major source of housing finance all over the world was that of individuals only, though some institutions like insurance companies and mortgage banks were sometimes lending small amounts for the purchase or construction of houses. The real impact of institutional sources was felt after the first world war when certain new types of financial institutions came into being and the existing institutions also felt the need of diversifying their activities. The establishment of a Communist Government in Russia and other totalitarian regimes elsewhere in Europe also led to the stepping in of Government as an agency of housing finance. But the major impact on housing mortgages was made by the policies adopted by the U.S. and other Governments during the 1920's and 1930's to meet the situation created by economic depression. Many Governmental agencies were specially set up for grant of direct mortgage loans and also for guaranteeing loans granted by financial institutions. Mutual savings banks, commercial banks, and trust companies, insurance companies, savings and loan associations and mortgage companies emerged in the United States as the principal institutional agencies, spurred by the Government guarantee and insurance schemes. As more and more institutional finance started flowing into this field, the Governmental agencies started concentrating their efforts on guarantee and insurance only. The following table indicates the degree to which commercial banks, insurance companies and savings and loan associations have become important mortgage holders in the United States and how little have Governmental

agencies been lending in 1950, as compared to 1940 :

Table showing types of Mortgage Holders of 1 to 4 Dwelling Units

(Percentage Distribution)

	1950		1940	
	Number of Mortgages	Amount of loan	Number of Mortgages	Amount of Loan
1. Savings and Loan Associations	28	27	20	16
2. Commercial Banks and Trust Companies	22	21	11	13
3. Mutal Savings Banks	9	10	13	16
4. Life Insurance Companies	12	18*	4	7
5. Mortgage Companies	1	1	5	6
6. Individuals	22	17	25	20
7. Others :				
(a) Federal National Mortgage Association	2	3	..	..
(b) Home Owners' Loan Corporation	4	3	14	14
(c) Miscellaneous			8	8
TOTAL	100	100	100	100

The institutional agencies operating in this field in India are, however, very few. In fact the Insurance Companies (now the L.I.C.) and Cooperative Housing Societies are the only agencies operating in the field of housing finance. Governmental agencies have become quite important of late and their activities may be classified as follows :—

- (i) Mortgage or non-mortgage loans to Govt. employees.
- (ii) Industrial housing schemes.
- (iii) Middle-income group —Low-income group, refugees and backward classes housing schemes.
- (iv) The Rehabilitation Finance Corporation.

The loan programmes for Government employees are not mortgage loans in all cases. But now many of them are fully amortised, low-interest bearing (4% or so), thirty year loans, the repayment of which is by way of deductions from monthly salary.

The industrial housing schemes will not strictly fall under mortgage financing because these loans are granted to factory owners to encourage them to build houses for workers.

The schemes under the third and fourth categories are really the schemes of mortgage-financing. These loans are fully amortised; the rates of interest vary from 4½% to 5½%; there are penal interest clauses for delinquents; period of payment varies from monthly to yearly; the tenure of loans is 25 to 30 years; the debt-value ratio is 75 to 80. Generally they can be obtained only after a good deal of waiting and running about, observance of a number of administrative and legal formalities and in some cases there are even complaints of bribery and corruption. They are advanced and collected directly by Government housing departments in some States, whereas in others they are channelled through co-operative banks. In general, the process of payment of loan instalments and collection of re-payments and interest are cumbersome and archaic.

4. CONCLUSION

4.1 Mortgage financing and mortgage insurance

have been responsible for a substantial increase in residential house-building in most countries. There have been large refinements in financing practices and the trend is towards more amortisation, lower rates of interest, longer-period loans, higher debt-value ratio, predominance of first mortgages and so on. The whole process has been considerably activated by the interest taken by Governmental agencies. The guarantee of private or institutional loans by public agencies has helped to bring in more funds into this field. In India, the use of mortgage-financing for house-building is very limited. The role of financial institutions has been practically nil (till very recently) and Government interest is also very recent. There have been practically no Government guaranteed or Government insurance schemes.

4.2 The success of Government guarantee and insurance schemes in other countries has established the usefulness of such schemes in encouraging house-building. In India, we have not yet realised their benefit. If such schemes are introduced they will reduce the total burden of housing finance which the Government now shoulders and enable the Government to tap other sources—financial institutions, charitable trusts, etc. which would otherwise not be forthcoming. There is need for liberal first mortgage arrangements at low rates of interest duly guaranteed or insured by public agencies. But it should be clearly understood that they should not become substitutes for mortgagors' equity. The owners should be made to invest 30 to 40% of the cost from out of their own funds, else the whole project may become speculative. This would also help in bringing out lot of hoarded or unproductively used wealth (such as that in ornaments). The Government has been sponsoring a number of rental housing schemes—both for its own employees and for industrial and local body employees. These schemes involve a far greater investment of funds on the part of Government than would be the case with Government guaranteed or Government refinanced non-governmental mortgage financing. So the latter should be encouraged rather than the former.

Role of L.I.C. in Financing Housing Industry in India**

By

Dr. Mohd. Mohsin †

1. Life Insurance Corporation of India mobilises individual savings under a contract whereby it agrees to pay a stipulated amount to a beneficiary upon the death of an insured person or on (completion of a certain period to the insured) in consideration of certain periodic payment. In the process of accumulating life fund under level premium L.I.C. has emerged as an important financial institution.

The investment policy of L.I.C. is, therefore, conditioned by :

- (a) Character of its liability (terms and conditions of its contracts);
- (b) legal framework; and
- (c) socio-economic environment.

Its investment in different assets or in any particular type of asset will depend upon factors (a), (b) and (c); and also upon (d) the ability of that asset to meet the above stated investment requirements of L.I.C. Let us consider each of these factors.

2. LEGAL FRAMEWORK

2.1 Legal provisions have been drawn to maintain the solvency of the Corporation in its own interest; in the interest of its policy-holders and in the larger socio-economic interests of the country. It gives due recognition to the nature of insurance business and fixes the limit in each investment according to its suitability to L.I.C. The law insists that L.I.C. should invest the major portion of its fund in Government securities not simply because the Government requires these funds for the expanding public sector, but, on account of the ability of "gilt-edged" to meet bare investment requirements of L.I.C.

2.2 The investments of L.I.C. are divided into three categories :

- (a) Government and approved securities—It must invest at least 50 per cent of its funds under this head.
- (b) Investment approved under Section 27 (A) and (C)—permitted to the extent of 35 per cent. The list, besides corporate securities includes investment in mortgages; land and building.
- (c) 'Other Investment'—permissible limit is 15 per cent.

Besides the above legal requirements, the valuation requirements under Section 26 of the L.I.C. Act, the requirements regarding presentation of accounts under Section 27 and the method of valuation of assets required under First Schedule of the Insurance Act, 1938, also influence L.I.C.'s investment policy in different forms of investments.

3. NATURE AND CHARACTERISTICS OF L.I.C.'s LIABILITIES

3.1 L.I.C. underwrites the life insurance under level premium method where it accumulates a life fund.

3.2 The accumulation of life fund at a stipulated rate is an essential and integral part of life insurance business.

3.3 Life Insurance being a long-term contract and under agreement, L.I.C. must accumulate sufficient fund to discharge its liability.

3.4 The accumulation of the fund depends upon :

- (a) Mortality rate;
- (b) Expenses incurred; and
- (c) Rate of interest earned.

The surplus on these accounts result in the accumulation of fund. The corporation has very little control over : (a) expenses that can be controlled but under inflationary conditions the corporation loses its hold. The great pressure shall, therefore, be on (c), return on investment. In case of profit, the corporation assumes additional responsibility of accumulating fund at a relatively faster rate.

3.5 Corporation's main liability is towards its policy-holders as the life fund constitutes its main liability—about 90 per cent.

3.6 It has a very small capital cushion—less than one per cent.

From this it follows that :

- (a) L.I.C. has very limited ability to absorb loss of principal.
- (b) It must at the same time aim at earning the maximum possible return.
- (c) A small proportion of the total fund should be held in readily convertible securities for the payment of current claims, and for such loan transaction as may be considered desirable.

1 and 2 seem to clash with each other as yield varies with risk. Higher the risk, higher the return. The purpose of an investment policy is to draw a fine balance between the two.

4. INTERNAL AND EXTERNAL RESTRAINTS IN L.I.C.'s INVESTMENT POLICY

4.1 Apart from safety, yield and liquidity as stated in the previous section, there are a number of other objectives of the investment policy of L.I.C. which have assumed importance in view of its nationalised status. They are :

- (a) The element of trusteeship and the expectations of policy-holders;

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- (b) the responsibilities of Broader Trusteeship due to the socio-economic status of L.I.C.
- (c) the impact of the planned economy on the portfolio structure of L.I.C.
- (d) the autonomy of L.I.C.
- (e) the quality of investment management of L.I.C.

- (f) the influence of 'Monopoly' of underwriting life insurance business on the investment policy of L.I.C.

These factors have positive and negative effects on the investment policy of L.I.C.

4.2 The Table shows how under its existing investment framework L.I.C. has invested in various categories to achieve its investment objectives.

(Amount in Rs. Crores)

Break-up of Investment

Category of Investment	As on 1-9-1956	As on 31-3-1966	Percentage Increase
1. Government Securities (Central, States & Municipals)	220.48	573.57	160.0
2. Investment in Foreign Securities	14.84	15.93	7.0
3. Shares & Debentures	71.32	183.19	157.0
4. Loans and Deposits in India	8.36	139.66	1571.0
5. Loans on Mortgages of Property	15.02	15.85	5.0
6. House Property	19.27	32.84	70.0
TOTAL	349.29	961.04	175.0

Source.—L.I.C. Annual Report & Accounts—1966 pp. 10.

5. L.I.C.'s INVESTMENT IN HOUSING

L.I.C. invests, as seen from the Table, comparatively small amount in Housing. Its direct investment in Housing (real estate) is quite insignificant; and that too in its own commercial establishment and staff residential quarters. Its indirect investment includes :

- (a) Loans through State Governments;
- (b) Loans to Co-operative Societies;

- (c) Loans to Companies;
- (d) Loans to Policy-holders; and
- (e) Loans against mortgages for the construction of buildings.

Indirect measures have their own limitations. Direct Investment in Housing is recommended for the following reasons. A simple Balance Sheet Approach is sufficient to establish the above point of view.

Balance Sheet of L. I. C.'s Direct Investment in Housing

Case Against Direct Investment in Housing	Case for Direct Investment in Housing
1. Estate management involves several problems foreign to life insurance business.	1. Housing is a Socio-Economic need of the country.
2. Lack of marketability in India.	2. Return is comparative high.
3. Return uncertain.	3. Not influenced by market variations.
4. Rent collection and eviction may dis-repute the Corporation.	4. Full control over investment.
5. Valuation Problem.	5. Provide employment opportunities in ancillary industries.
<i>Surplus</i> —being the excess of strong points for investment against weak points.	6. Will be a positive step towards socialisation of housing ownership, Quasi Rent etc.
	7. Provide alternative investment opportunity in case of non-availability of corporate securities to suit the investment requirement and investment standards of L.I.C.
	8. L.I.C. Colonies will be additional source of advertisement and public.
	9. Investment in housing will contribute in improving the saving margin of the community specially middle class by arresting increase in house rent due to urbanization and industrialisation of the country.
	10. Good Investment Management of L.I.C. can encounter the various management problems.
	11. Need for liquidity of L.I.C. is more imaginary than real.

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National Income Generation and Capital Formation in Housing Sector—Their Importance

By
Dr. S. G. Tiwari†

1. It is proposed to discuss two aspects of Housing Statistics, one relating to generation of national income and the other to capital formation. In this connection, it is desirable to consider the importance of both of them. National income generated in the dwelling sector constitutes a small proportion of the total which ranged between 3 and 7 per cent in different countries in the world in 1963 whereas capital formation in dwelling varied between 40% and 65% of total building construction and 8% and 25% of total fixed capital formation in the same year (see Tables 1 & 2). It may be mentioned in this connection that there are certain specific conceptual aspects in this connection which should be borne in mind.

2. While talking of housing it is necessary to be clear about the exact connotation of the word 'house'. In 1961 population census the word 'house' was taken to mean a residential building or a non-residential building as residential building may be used either wholly or partly for residential purposes. In the latter case it may be a workshop-cum-dwelling or a shop-cum-dwelling. In all the countries in the world residential houses have this character in common, although their extent may vary from country to country depending on the stage of economic development attained and nature of organisation in agriculture industry and services. It is a common feature in most of the developing countries that dwellings are used by and large by the farmers as farm houses. Small businessmen and cottage workers do likewise. When the house is not only to provide shelter to the household but also serves as a place of operation of enterprise its importance increases enormously.

3. A building under construction or a completed building is generally considered to form part of fixed capital formation. Residential buildings are defined as completed buildings consisting wholly or primarily of dwellings, excluding the value of land before improvement if this can be separately estimated, major alteration and improvements in residential buildings; and transfers and similar costs in respect of purchase of existing residential buildings. It includes the cost of external and internal painting of new building and all permanent fixtures, such as fixed stoves, central headings, air-conditioning and water supply installation and all equipment customarily installed before dwellings are occupied. Hotels and similar buildings operated on a purely transient basis are not treated as residential. Uncompleted buildings are defined as increases in inventories.

TABLE 1

Percentage Contribution of Dwellings to National Income in Certain Countries of the World in 1963

Name of country	National Income	Contribution of Dwellings	% of (2) to (3)
1	2	3	4
Ceylon (mil. Rs.)	6945.3	185.8	2.68
France (000' mil. francs)	431.5	15.7	3.64
India (000' mil. Rs.)	175.6	5.1	2.9
Japan (000' mil. yen)	20175	14890	7.38
Malaysia (mil. malayan \$)	5902	277	4.69
U.A.R. (mil. Egyptian £)	1516.6	81.1	5.35
U.K. (mil. £)	28505	1172	4.11
U.S.A. (000' mil. \$)	513.8	13.4	2.61

4. From the point of view of analytical studies it will be desirable to make such a distinction or else resultant capital output ratio would be meaningless. Facts are not uncommon that large multi-storied buildings have taken several years in completion. To treat uncompleted building as a part of fixed capital formation is likely to inflate the value of such residential buildings which are supposed to provide living accommodation currently and generate rent also. However on practical consideration and more so because of non-availability of separate data on completed construction in the hands of producers and the users in most of the countries of the world, it has neither been possible so far, nor is likely to be in the near future to make such clear distinction and as such the estimates of fixed capital formation in residential building would include, as it has included in the past, work in progress also.

5. Ideal approach for estimation of capital formation is to have a total stock of houses and estimate net change in them every year. This approach would also permit doing away with several assumptions in respect of estimation of depreciation, etc.

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and would establish consistency between the generation of income in the housing sector and capital formation therein.

6. Total income generated in the housing sector is known as gross rentals. The house may be either occupied by the owner himself or it may be given on rent or a part may be occupied by the owner whereas the remaining part given on rent. But the total rental income will constitute income from rented houses as well as imputed income from owner occupied houses. The most reliable sources on data from rented houses are the family budget surveys organised for different areas (urban, rural etc.) for different socio-economic groups. However, the difficulty arises in the case of owner occupied houses specially when the type of service provided by these houses happens to vary very markedly. The usual procedure recommended in these cases is that the rentals for such houses may be imputed on the basis of rented houses. However, it is common experience that the rented houses in rural areas are generally much superior to an average house and hence even if some scanty data in respect of them becomes available this would not provide satisfactory basis for estimation. Perhaps a workable solution may be to make certain adjustments to this type of average rental figure for rural

houses. Another basis for estimation of rental may be the estimates of stock of different types of houses, their values and the period of which they may last. On the basis of depreciated value of houses it is possible to work out imputed rental income on the basis of rate of return on investment in houses.

7. In this connection it is not out of place to mention that a view is gaining momentum that such houses which are made of mud or straw or bamboo whose cost is low, should not be included under houses specially because they do not provide modern amenities and more so when it is becoming avowed objective of state policy to provide healthy and adequate living accommodation to all citizens. In a country like India another important source of information for estimation of contribution of houses to national income is property tax levied by civic authorities both in urban and rural areas. In fact the estimates of national income in the urban areas are based on information collected from municipalities and in rural areas from village panchayats which are duly adjusted for under-estimation. Further while estimating rentals for residential houses it is necessary to take into account the dwelling accommodation provided with shops or workshops.

TABLE 2
Investment in Housing in Various Countries of the World 1963

Name of Country	Total fixed capital formation	Capital formation in building	Capital formation in dwellings	Proportion of 4 to 2	Proportion of 4 to 3
1	2	3	4	5	6
France (000' mil. francs)	83.4	..	20.4	84.46	..
Hungary (000' mil. points)	60.5	..	8.4	13.28	..
Japan (000' mil. yen)	8143	..	691	8.49	..
Malaysia (mil. malayan \$)	1258	332	130	10.33	39.16
U. K. (mil. £)	5094	2486	948	18.61	38.15
U.S.A. (000' mil. \$)	104.4	46.0	28.2	27.01	61.30
U.S.S.R. (000' mil. rubles)	42.2	..	7.7	18.25	..

8. Estimates of gross and net rental at constant prices are helpful in assessing the increase in the volume of living accommodation whereas the estimates at current as well as at constant prices taken together would indicate a change in the rental per unit of accommodation which has an important influence on cost of living. In order to arrive at gross rental at constant prices one generally makes use of the base year average rental both in rural and urban areas. However, because of increasing changes in the character of houses over time and more so in the urban areas it would be desirable to prepare an appropriate index of rentals for use in deflating the rentals at current prices in order to arrive at those at constant prices.

9. We may now pass on to the estimates of total capital formation which have generally been estimated in most of the countries by adopting 'commodity flow approach' which involves collection of data in regard to domestic production, imports exports and re-exports of construction material and equipment, trade and transport charges.

10. In several countries estimates of capital formation are generally worked out on the basis of data relating to start and completion of buildings used for residential purposes by different agencies from the data collected by civil authorities. Whenever such data are not available investment on houses is estimated on the basis of capitalised value of net change in annual rental. Other procedures adopted relate to collection of data on expenditure on building construction through sample enquiries.

11. In spite of the fact that repeated efforts have been made not only by the advanced countries but also by developing countries through various surveys and enquiries to collect statistics on construction, still the data are far from satisfactory. As these statistics are extremely useful not only for analytical purposes but also for several policy measures, it is necessary that maximum attention is paid not only to have complete coverage in the collection of such statistics but also to improve their order of reliability and provide requisite information to construct various types of norms which are so essential for formulation of various types of projects.

Investment in Dwelling Construction***

By

Dr. C. M. Palvia†

1. INTRODUCTION

1.1 Housing can be regarded as a type of either 'consumer goods' or 'capital goods', consisting mainly of house and land. It is marketable in a real estate market, but is an inflexible and localized commodity. The capital value of housing depreciates through usage, but due to the speculative element it also appreciates. Calculation of return on housing investment may be based on the cost or the market value. The assessment of housing investment and its components is important in dealing with problems of investment allocations in relation to economic development planning.

1.2 The assessment of housing investment and its impact on the economy helps towards evaluating the economic feasibility of housing plans in the context of overall plans. Such an assessment depends on the availability of adequate statistics some of which are to be found in the national accounts.

1.3 In the countries of the ECAFE region there has been a growing interest in building up statistics for measuring residential construction activity. Both the private sector and public authority have sought, to ensure a steady flow of data on housing, through housing and other socio-economic surveys for the purpose of formulating housing policies.

1.4 In spite of growing interest and improvements in the availability of housing and building statistics, estimation of present housing stock and future needs in physical and financial terms has its inherent difficulties, owing to the relatively lower priority accorded to "housing".

2. MACRO-ECONOMIC VARIABLES IN RELATION TO "HOUSING"

2.1 Gross capital formation in "construction" and its share in gross national product and in gross fixed capital formation

2.1.1 The percentage shares of gross fixed capital formation in "dwellings" and in other "construction" vary, although the broad pattern of past investment in some developed economies can be a purposive guide.

2.1.2 In developed and developing countries, about 10 per cent of gross national product is usually absorbed in construction. In some countries, such as, the Philippines, Chile, etc., the proportion is lower, since both total capital formation as well as capital formation in construction as proportions of gross national product are unusually low. It is clear from Table 1 that gross fixed capital formation in "construction" is relatively higher in the ECAFE region than in the ECLA region or developed countries.

TABLE 1

Gross Fixed Capital Formation in Construction as Percentage of (1) Gross National Product and (2) Total Gross Fixed Capital Formation

ECAFE region	%		ECLA region	%		Developed countries	%			
	(1)	(2)		(1)	(2)		(1)	(2)		
Burma	1960	11.9	70	Argentina	1958	10.5	50	Austria	11.0	46
Ceylon	1960	12.6	72	British Guiana	1958	11.5	51	Canada	15.3	66
China :								Denmark	8.4	44
Taiwan	1960	11.5	64	Chile	1959	4.6	41	France	9.4	52
Federation of Malaya	1959	7.8	72	Ecuador	1960	7.3	52	Greece	12.6	52
India	1955-56	7.0	71	Honduras	1958	10.0	59	Ireland	6.7	54
	1960-61	13.0	71	Panama	1958	8.4	66	Italy	12.6	57
South Korea		8.0	65	Peru	1958	11.5	51	Netherlands	11.9	49
Philippines	1960	3.7	46	Puerto Rico	1960	13.8	69	Norway	12.8	44
				Trinidad & Tobago	1959	17.6	55	Sweden	12.9	54
								Switzerland	15.0	65
								United Kingdom	7.7	48
								United States	18.6	67
								Yugoslavia	18.0	60

Sources:—(1) UN, *Statistical Year Book*, 1961.

(2) For India, *Estimates of Capital Formation in India*, 1961, page 18.

†Joint Director, National Buildings Organisation, New Delhi.

2.2 Gross Fixed Capital Formation in Dwellings, Its Share in Gross National Product, Total Gross Fixed Capital Formation and Gross Capital Formation in "Construction"

2.2.1 As shown in Table 2, in developed economies as well in countries of the ECLA region, nearly 20 per cent of the gross fixed capital formation in construction goes into dwellings; and some of them have higher proportions. By comparison, in most ECAFE countries not only does less than 20 per cent of gross capital formation in "construction" go into "dwellings" but, in some cases, the proportions are nearer 10 per cent or less than 10 per cent. It is obvious that the level of investment in "dwellings" in countries of ECAFE region has received lower priority as compared to other components of investment in "construction", for achieving faster economic development in initial stages.

2.2.2 The percentage of gross national product absorbed by gross capital formation in "dwellings" in the countries of the ECAFE region is generally lower than in countries of the ECLA region and in the developed economies (see Table 3). The proportion is 1 to 2 per cent of gross national product in countries of the ECAFE region, 2 to 4 per cent in countries of the ECLA region, and about 3 to 6 per cent in developed economies. Since national income levels and housing standards go hand in hand, it is possible that, in countries of the ECAFE region, the proportion of gross national product devoted to gross capital formation in "dwellings" may increase as development takes place and effective demand for "dwellings" increases as a result of improved income levels and of the economic and social welfare policies of the governments.

TABLE 2
Gross Capital Formation in Dwellings as Percentage of Total Gross Formation in Construction

ECAFE countries		%	ECLA countries		%	Developed countries		%
China : Taiwan	1958	11	Argentina	1955	27.1	Austria	1960	19.1
	1960	13	Chile	1954	39.1	Belgium	1960	38.6
Federation of Malaya	1955	17	Columbia ¹	1953	11.8	Denmark	1960	15.6
	1958	14						
	1959	13	Ecuador	1957-59	17.9	Finland	1960	19.7
India :			Honduras	1955-57	26.2	Greece	1960	20.8
Second Plan		19						
Third Plan		15	Mexico	1955	17.1	Ireland	1960	13.1
Japan	1953	8	Venezuela ²	1957-59	12.4	Italy	1960	24.8
	1958	9						
	1960	7	British Guiana	1954-56	17.7	Netherlands	1960	18.2
Korea, South	1958	14	Puerto Rico ³	1957-59	22.6	Norway	1960	14.0
	1960	19				Sweden	1960	22.8
Philippines	1958	13				Switzerland	1960	28.4
	1960	11				United Kingdom	1960	18.6
			Notes :					
			¹ . Based on 1950 prices.			West Germany	1960	22.4
			² . Based on market prices of 1957			Yugoslavia	1959	15.9
			³ . Fiscal year begins on 1 July.			United States	1960	30.0
						Poland ¹	1961	19.4
						U. S. S.R. ¹	1960	28.7

¹. Net investment.

Sources :
(1) UN, *Statistical Year book*, 1961
(2) *A Review of Housing Situation in India*
(Paper presented to the ECAFE Working Party on Housing and Building Materials, September 1962).

Source :
The Use of National Accounts Statistics to Assess the Economic Significance of Housing.
(ST/ECLA/CONF. 9/L.11) UN/ECOSOC

Source :
1962—*Annual Bulletin of Housing and Building Statistics for Europe.*

TABLE 3
Gross Capital Formation in Dwellings as Percentage of Total Gross National Product

ECAFE countries		%	ECLA countries		%	Developed countries		%
China : Taiwan	1958 1960	1.7 2.3	Argentina	1955	4.1	Austria	4.5	
Federation of Malaya	1958 1959	1.4	Chile	1954	3.3	Belgium	5.0	
India : 1st Plan			Columbia ^a	1953	2.7	Denmark	3.0	
2nd Plan			Ecuador	1957-59	2.2	Finland	5.7	
3rd Plan			Honduras	1955-57	3.4	France	5.2	
Japan	1958 1960	2.4 2.2	Mexico	1955	2.4	Greece	5.3	
Korea, South	1958 1960	1.8 2.3	Venezuela ^b	1957-59	3.2	Italy	5.5	
Philippines	1958 1960	1.0 0.9	British Guiana	1954-56	3.5	Netherlands	4.3	
			Jamaica	1957-59	3.0	Norway	3.9	
			Puerto Rico ^c	1957-59	5.0	Sweden	5.1	
						Switzerland	7.0	
						United Kingdom	3.0	
						West Germany	5.4	
						United States	4.5	

NOTES:—

a. based on 1950 prices.

b. Based on market prices of 1957.

c. Fiscal year begins on 1st July.

Source:
U.N., *Statistical Year Book*, 1961.

Source:
UN/ECOSOC, ST/ECLA/CONF. 9/L. 11, *The Use of national accounts statistics to assess the economic significance of housing.*

Source:
1962—*Annual Bulletin of Housing and Building Statistics for Europe.*

2.3 Whether the Gross Capital Formation in Residential Construction is Productive?

2.3.1 Dwellings produce "housing services" which form a part of the national product. The rôle of fixed investment in influencing national output is a dual one, since such investment not only generates the flow of current income, but also raises the capacity to produce goods and services over the years to come. It is true that the immediate returns from residential capital formation are not high. There is, however, a growing acceptance of the fact that expenditure on housing construction satisfies a fundamental human need and is an infrastructure for "investment in human resources" as much as the investment in transport, irrigation, etc.; also that, without it, economic development is not possible.⁽¹⁾ In a recent ECE study, it was established that, in post-war economic progress in western European countries, intangible factors—whether regarded as "techniques" or "organization" or the "human factor"—have played a more significant rôle than the inputs of labour and capital.⁽²⁾

2.3.2 In this connection it would be rewarding to look into the problem of capital/output ratios. Generally, the capital/output ratio in the manufacturing sector is lower (by almost half) than in the housing sector. Capital formation in dwellings does not produce the immediate returns as high as capital formation in the manufacturing sector; but the long life of capitalized stock in dwellings and hence the low rate of depreciation, signifies that the productivity of capital in this sector is low but that houses yield fruits over a long period.

2.3.3 The productivity of capital (or the income coefficient) is lower in the case of housing than in other sectors of the economy, such as manufacturing. An expansion of investment in housing might bring down over all income coefficient, though only slightly⁽³⁾, because of the minor share of investment in housing (at about 15 to 25 per cent) to total gross fixed capital formation. There may, however, be certain intangible beneficial effects of better housing on labour productivity in other sectors of the economy and it may very well turn out, in the long-run, that the over all income coefficient becomes higher.

1. "The requirements for investment in housing are one of the most important factors determining how effective a nation's savings can be in raising productivity. . . . housing may have an important bearing on the attitudes, health and efficiency of the labour force and therefore its provision in a sense be regarded as a form of investment in the human resources of the community. Consequently, housing and similar investment occupy a hybrid or intermediate position in regard to economic development. . . . if we include housing investment. . . . in a broader category of developmental outlays, we must recognize the fact that its direct effect in increasing output is very low per unit of investment, and must regard a high rate of housing outlay as a factor contributing to a high overall capital/output ratio for the totality of investment. . . . housing investment competes with other forms of outlay which provide much more immediate and substantial returns in the form of increased productivity" (Coale and Hoover : *Population Growth and Economic Development in Low-income Countries*, pages 190-91.)

2. United Nations, ECE, "A Study of Determinants of Growth in Europe during the Nineteen-Fifties (ECONO. Advisers/Conf./13, 2 March 1961).

3. An increase of investment in housing, say from 15 per cent to 25 per cent of gross fixed capital formation, may bring down the over all income coefficient (taken at 0.33) by about 10 per cent only (to about 0.3).

2.3.4 Illustrations about the distribution of capital investment on housing as well as manufacturing can be had from the United States, the Soviet Union, eastern European countries and from several ECAFE countries. In the United States, in the long period which has elapsed since 1890, housing and manufacturing have each accounted for about one-fourth of total investment. In the Soviet Union, during the 1930's, about 40 per cent of total investment was allocated to industry and only 10 per cent to housing, as the Soviet pattern of investment during the 1930's reflected a decision to postpone social infra-structure investment including housing investment. Since the 1950's, however, housing has been getting 20 per cent under the spur of the longer-run necessity to allocate more investment to housing and other social overheads, as in other centrally planned economies. This idea is also gaining acceptance gradually in some countries of the ECAFE region for example, Japan and Ceylon plan to increase their investment allocations on housing. In Ceylon, under the 1959-68 ten-year plan, it is proposed that 20 per cent of total investment would go to housing.

2.4 Employment Potential in Construction and House Building

2.4.1 The male labour force employed in construction in most countries varies from 20 to 50 per cent of the male labour force employed in manufacturing. In developing countries, in a number of cases, the male labour force employed in construction more or less equals the size of the labour force employed in manufacturing. (see Table 4). This fact is substantiated by the comparatively larger share that investment in construction has in total fixed investment in developing countries. House building probably accounts for about half the on-site and off-site employment in construction. These are the pointers about the employment potentiality of investment in housing through well-designed housing programmes. Investment in housing has an added significance in the densely populated countries of the ECAFE region where vast reserves of unemployed and underemployed man-power exist. Investment by the public authorities, accompanied by sound technical advice, might attract the unemployed and underemployed man-power towards housing construction for which locally available building materials can be used.

TABLE 4

Ratios of the Male Active Population Employed in Construction Sector to the Active Male Population Employed in Manufacturing Sector in Some Countries

0.2—0.3	0.3—0.5	Above 0.5
I. ECAFE Countries	I. ECAFE Countries	I. ECAFE Countries
1. Ceylon 0.25	1. Japan 0.37	1. Iran 0.61
2. China : Taiwan 0.23	II. Others	2. Philippines 0.76
3. The Federation of Malaya 0.30	1. Denmark 0.32	II. Others
4. Korea, South 0.30	2. France 0.35	1. Puerto Rico 0.60
II. Others	3. Ireland 0.33	2. Algeria 0.35
1. Austria 0.20	4. New Zealand 0.34	3. Tunisia 1.10
2. Belgium 0.20	5. West Germany 0.36	4. Kenya 1.20
3. Italy 0.20	6. The United States 0.42	5. Sudan 0.60
4. The Netherlands 0.20	7. Czechoslovakia 0.42	6. French W. Africa 2.10
5. Norway 0.20	8. Brazil 0.45	7. Ghana 0.62
6. Switzerland 0.20	9. Chile 0.47	8. Panama 0.38
7. The United Kingdom 0.20	10. Columbia 0.43	
8. Canada 0.20	11. Venezuela 0.74	
9. Finland 0.30		
10. Sweden 0.30		
11. Yugoslavia 0.30		

Source:—U.N. Compendium of Social Statistics : 1963 (Statistical Papers, Series, K. No. 2).

2.5 Valuation of National Product Generated by the "Ownership of Dwellings"—Gross Operating Surplus and Its Proportion in Gross Domestic Product

2.5.1 The contribution of "ownership of dwellings" to gross domestic product is estimated by finding gross operating surplus from the use of dwellings. Countries of the ECAFE region which estimate the gross national product, in principle, adopt the United Nations definition for value added in the housing sector, though in practice short-cut methods have often to be adopted to estimate the value because of the paucity of data and sometimes this value is included under the heading of "other services". For example, no estimate of the value added due to "ownership of dwellings" is made in China (Taiwan); whereas, in the Federation of Malaya, Japan, the Philippines and Thailand, estimates are made for inclusion, generally as part of "all others" comprised of banking, insurance, real

estate, ownership of dwellings, public administration and defence, personal and other services. Burma, Ceylon, India, Indonesia, the Republic of Korea, Pakistan, the Philippines and Thailand estimate and show the value added due to "ownership of dwellings" as a separate item in their national accounts. For developing and developed countries, the percentage share of the "Ownership of dwellings" in gross domestic product is given in Table 5.

2.5.2 The data show that, by and large, in developing countries, the share of income generated by the "ownership of housing" as a proportion of gross domestic product is higher than in the developed countries. This needs some explanation. The level of rents is relatively high in developing countries in the context of low per capita income as the supply of housing space is much less than the demand.

TABLE 5
Percentage Shares of Ownership of Dwellings in Gross Domestic Product in ECAFE, ECLA and Other Countries

ECAFE countries		% of gross domestic product	ECLA countries	1957-59	Developed countries	1957-59
1. Burma	1951	4.3	1. Argentina (1953-55)	4.8	1. Denmark	4.1
	1959	3.9	2. Brazil (1956-58)	4.3	2. Greece	6.3
2. Ceylon	1950	1.4	3. Chile	7.7	3. Italy	2.4
	1959	2.2	4. Columbia	5.3	4. Netherlands (1955-57)	2.7
3. India	1950	4.3	5. Costa Rica	4.1	5. Norway	2.9
	1959	4.1	6. Ecuador (1956-58)	7.6	6. United Kingdom	3.6
4. Indonesia	1955	5.0	7. Honduras	7.3	7. United States	2.4
5. Korea, South	1953	8.5	8. Panama	11.1		
	1960	6.9	9. Venezuela (1959-60)	12.5		
6. Pakistan ^a	1960	5.5	10. Jamaica	3.3		
7. Philippines ^a	1959	8.5				
8. Thailand ^a	1950	0.6				
	1959	2.9				

^a—As a percentage of net domestic product.

Source:—ECAFE Economic Bulletin, Dec., 1961, page 23.

Source—UN Document No. ST/ECLA/CONF.9/4.11 (1962) page 26.

2.6 Consumption Expenditure on "Housing and Household Services"

2.6.1 The consumption expenditure incurred on "housing and household services", which is comprised of rent, water and light charges, expenses on fuel, local rate and taxes, expenses on furniture, furnishings and household equipment and their operation charges, is measurable as a proportion of the total private consumption expenditure.⁴ Table 6 sets out the data in respect of countries of the ECAFE and ECLA regions as well as some of the developed countries. In developing countries, and more so in countries of the ECAFE region, by and large, houses for rent are unfurnished and often do not have water supply, fuel and light facilities, built-in kitchen equipment, etc. The rent charged is usually for the physical cubicals of

rooms or a set of rooms (in which generally neither water, light or fuel charges are included). Rent is, therefore, lower. Nonetheless, it is to be expected that, as urbanization and industrialization proceed, civic amenities and various conveniences, such as household equipment and services may be demanded by the prospective tenants even at higher rents which may be supported by some sort of recurring rent subsidies.

2.6.2 It will be seen that "housing and household services" claim a higher proportion than "clothing" in private consumption expenditure in almost all the economies whether developed or developing. Usually the expenditure on "housing and household services" is about double or even treble that on "clothing" in developed countries and also in some developing countries (see Table 6)

⁴ Private consumption expenditure is usually about two-thirds to four-fifths of the gross national product in different countries. In countries of the ECAFE region the proportion is about three-fourths, except in Japan where it is about two thirds.

TABLE 6

Relative Proportion of Private Consumption Expenditure on Various Consumer Items in ECAFE and ECLA Countries, as well as Developed Countries

(1)	(2)	(3)	(4)	
<i>ECAFE region</i>				
1. Ceylon	(1960)	62	19(3)	9
2. China : Taiwan	(1960)	57	15(7) <i>a</i>	7
3. Japan	(1960)	46	18(—)	8
4. Korea, South	(1960)	57	17(7)	12
5. Thailand	(1959)	55	16(4)	7
<i>ECLA region</i>				
1. British Guiana	(1956)	47	21(7)	12
2. Dominion Republic	(1958)	52	28(18) <i>b</i>	5
3. Ecuador	(1960)	53	18(10)	14
4. Honduras	(1958)	57	18(9)	13
5. Jamaica	(1960)	45	18(5)	12
6. Panama	(1959)	45	25(14)	13
7. Peru	(1958)	47	28(18)	8
8. Puerto Rico	(1960)	36	21(11)	10
9. Trinidad and Tobago	(1960)	47	17(5)	10
<i>Developed countries</i>				
1. Australia	(1960)	35	20(9) <i>b</i>	12
2. Austria	(1959)	47	18(4)	13
3. Belgium	(1960)	35	30(12)	10
4. Denmark	(1960)	35	21(8)	10
5. Finland	(1960)	47	19(8)	14
6. France	(1960)	41	20(5)	12
7. Netherlands	(1960)	38	27(8)	16
8. Norway	(1960)	36	23(8)	16
9. South Africa	(1959)	40	20(6)	15
10. Sweden	(1960)	37	24(10)	13
11. United Kingdom	(1960)	43	23(9)	11
12. U.S.A.	(1960)	27	28(13)	9

Source.—U.N. Statistical Year Book 1961

NOTE.—Figures in brackets in Col. (3) show the percentage of expenditure spent on "rent" and water charges.

a. Figures in bracket include fuel and light charges also.

b. Does not include water charges.

2.6.3 As shown in Table 6, in the countries of the ECAFE region, the proportions of private consumption expenditure on "housing and household services" and also on "rent and water charges" are generally lower than in the ECLA region and developed countries; because of the lower per capita income levels (being about 1/4 to 1/3 of ECLA countries and about 1/25 to 1/10 of developed countries), higher density of population⁽⁵⁾ and larger proportions of rural population⁽⁶⁾. The lower proportion of "rent and water charges" and "housing and household services" in countries of the ECAFE region may also be due to rent control as well as to the fact that accommodation is usually unfurnished.

3. NATIONAL ACCOUNTING CONCEPTS FOR DWELLING CONSTRUCTION IN ECAFE COUNTRIES

3.1 In this section, some national accounts concepts, connected with the statistics required for analysing the economic significance of residential construction with particular reference to the ECAFE region, are discussed.

3.2 "A System of National Accounts and Supporting Tables" (Studies in Methods, Series F, No. 2 Rev. 1 'Unit. Nations', 1960), while explaining the problem of gross domestic capital formation and gross fixed capital formation (land, construction, machinery and equipment), suggests that gross fixed capital formation in 'dwellings' be shown as a separate item. Fixed capital formation in dwellings, according to this document, represents 'all expenditure on new construction and major alteration to residential buildings including the value of the change in work in progress', but excludes the value of the land before improvement. The expenditure includes 'the cost of external and internal painting and all permanent fixtures, such as furnaces, fixed stoves, central heating and water supply installation and all equipment customarily installed before renting'. So legal charges are also included. But the value of furniture and household equipment is excluded from this item and is regarded as a consumption expenditure⁽⁷⁾. However, as regards transactions in existing buildings, the document realizes that, if it is impossible to separate the value of the land from that of the building, the total value of land and building should be included as capital expenditure or fixed capital formation in 'dwellings'⁽⁸⁾.

3.3 The system suggested in the United Nations document is intended to apply to the developing as well as developed countries, as it is recognised that any system should take account of the needs of the developing countries for current economic information and make due allowance for the import limitations imposed by the available statistical resources and institutional factors. The fact that the system may be simplified without impairing the basic definition and concepts on which it rests, enables countries not yet in a position to

complete the accounts to employ the system as well as the tables with suitable modification.

3.4 For understanding relations and their ramifications in respect of investment in dwellings in ECAFE countries, classification of total capital expenditure on dwelling construction by (i) urban and rural areas, (ii) public and private sectors, (iii) new construction and major alterations, (iv) dwelling and essential facilities, and (v) monetized and non-monetized forms, would be desirable.

3.4.1 *Capital Expenditure by Urban and Rural Areas*—About 10 to 25 per cent of the populations in the countries of the ECAFE region live in urban areas and about 40 to 80 per cent of the urban populations live in capital towns and cities with a population of 100,000 or more. Following the emphasis placed on programmes of industrialization as a part of economic development plans, the degree and volume of urbanization, particularly in bigger towns, would lead to an accelerated demand for urban housing both in volume and in value, absorbing building materials largely produced by organized industries. Therefore, breakdowns of capital formation in dwellings according to urban and rural areas would show the importance of the trend in residential construction and might also convey some idea of the tempo of urbanization. The surveys conducted by the Reserve Bank of India for Bombay, Madras or Calcutta throw some light on investment in 'dwellings' in urban areas; and the Rural Credit Survey and follow-up surveys offer some idea of investment in 'dwellings' in rural areas. Similar surveys may be undertaken with greater frequency in countries of the region for which regular statistics on dwelling construction are available.

3.4.2 *Capital Expenditure by Public and Private Sector*—The role of public and private sectors in providing housing depends on the various economic and social policies followed and the resources available. However, in developing countries, the public sector is likely to play a major role in helping to provide housing for the low-income sections of the community, largely by establishing (or by mobilizing the resources of) financial institutions or specialized housing finance corporations. While a small proportion of the urban population in developing countries will be in a position to provide housing, a major proportion will have to depend on 'state-aid' in one form or another. Hence breakdowns of residential capital formation into public and private sectors would be good indicators of the role which these sectors will respectively play in providing dwellings.

3.4.3 *Capital Expenditure by New Construction and Major Alterations*—The share of new dwelling construction is about 90 per cent⁽⁹⁾ of residential capital formation in the United States. The share of capital formation on account of 'additions and alterations' is thus around 10 per cent. The increases or decreases in capital formation on account of additions and alterations are associated with trends in conversions, ageing of the housing stock

5. The average density of population per sq. km. in Asia was 62 in mid-1960; 9 and 8 respectively in north America and south America.

6. Rural/urban ratio in respect of "average rental per person" for houses is roughly 1:4 in India (National Income Statistics—1961—CSO. Page 166).

7. "Durable goods other than construction acquired by households are excluded from fixed capital formation" (Op. cit. page 9, para 63).

8. *Op. cit.* page 28.

9. *Problems of Capital Formation: Concepts, Measurement, and Controlling Factors*, page 16, Vol. XIX, 1957 (Conference on National Income and Wealth).

and the size of the housing stock in relation to the volume of new dwelling construction. At present, because of the limited resources for dwelling construction, it is more justifiable to invest in "additions and alterations". Such a policy would meet the rising housing demand generated by increasing rates of rise in urbanization, industrialization and population growth. In addition, it would facilitate timely replacement of some of the fast ageing preponderantly rustic housing stock. There is possibly a more urgent need to spend more on 'additions and alterations' to housing in the densely populated countries of the ECAFE region, because of much larger absolute increases in total as well as urban population than are found in the sparsely populated developing countries of ECLA, Africa or the Middle East regions or in the developed countries of America, Europe and Oceania. In this context, division of capital formation in housing into 'new construction' and 'additions and alterations' would be helpful in understanding the investment aspects of the housing problem.

According to "A System of National Accounts and Supporting Tables" it is necessary to make provision for 'depreciation' (or capital consumption) with a view to ensuring that the value of fixed capital used up during the current period is charged as a cost against the current or operating revenue of that period; the provisions are designed to cover 'wear and tear' and unforeseen 'obsolescence' of all fixed capital as well as accidental damage wherein obsolescence is regarded as a capital loss. Usually substantial price variations (particularly in the direction of appreciation of houses in urban areas) are common. It may be therefore meaningful to make adjustments for capital value on account of price changes while estimating the depreciation of the housing stock.

3.4.4 Capital Expenditure on 'Dwellings' and 'Essential Facilities'.—In most urban areas of the ECAFE countries, only a limited amount of community services exist as yet; and the situation in rural areas is much worse. For example, in India, "household facilities, such as, tap-water are largely unknown in rural areas; households depend mostly on ponds and tanks for drinking water. In urban areas nearly 47 per cent of the households do not have tap-water, and 31 per cent depend on tanks and ponds. Built-up latrines are almost non-existent in rural areas; in urban areas, 44 per cent of the households do not have these sanitary facilities for private use but have to share them with others. The position as regards bath-rooms is scarcely better either in rural or urban areas than what it is for 'built-up latrines', but it does remain most unsatisfactory".⁽¹⁰⁾ There are, as exemplified by the Indian situation, a large number of areas in the ECAFE region where even essential facilities required for minimum housing, namely, water, sanitation and drainage, are not yet available. In programmes of industrialization and housing in industrial towns for the employees, provision of essential facilities has necessarily to be included. The ratio which provision of essential facilities would bear to total house building cost is, therefore, an important element in the total value of fixed capital formation in housing. Knowledge of this is a pre-requisite for estimating correctly the

amount of capital formation in housing. The ratio of expenditure on essential facilities to total housing cost ranges between 2.7 per cent and 31.5 per cent for some of the countries of ECAFE region, depending on the content of the facilities (25.1 per cent in India for industrial housing at Sindri; 19.1 per cent in Japan for Macbara Estate five, four and two-storeyed flats; 18.6 per cent to 31.5 per cent in the Federation of Malaya on various housing projects; 20.7 per cent to 22.2 per cent in the Philippines; and 28 per cent on double storeyed detached houses in Thailand.)

3.4.5 Capital Expenditure in Monetized and Non-monetized Forms.—In almost all countries of the ECAFE region, the rural economy has a sizeable non-monetized segment. Capital formation in 'construction' is also brought about through non-monetized efforts and activities. For instance, material inputs in construction may be self-produced or obtained in kind or produced by a mutual self-help process. Such activities may be in relation to land reclamation or acquisition and development, digging wells and canals, building approach roads, cattle-sheds, manufacturing simple construction equipment and tools and building houses. The dimension of capital assets acquired through the non-monetized activity is substantial in developing countries of the ECAFE region and it may distort the total picture if non-monetized activities, in spite of their substantial size, are not properly accounted for. Hence, close attention should be given to measuring non-monetized construction. It would be required to evaluate the construction investment at the real cost incurred, e.g. including the value of unpaid labour-input at the prevalent rate and imputing the values of all materials used, over the monetary cost. Existing statistical material on non-monetized capital formation is meagre and, due to its paucity, very few attempts have been made to estimate the magnitude of non-monetized capital formation. Preliminary attempts have been made in this direction by the National Sample Survey and Rural Credit Survey (conducted by the Reserve Bank of India) and by surveys carried out by the National Buildings Organisation in India, and by the National Sample Surveys in Pakistan and the Philippines.

4. AN APPRAISAL OF THE METHODS EMPLOYED BY ECAFE COUNTRIES FOR ESTIMATING CAPITAL FORMATION IN RESIDENTIAL CONSTRUCTION

4.1 As stated earlier, fixed capital formation in construction constitutes about half or more than half of the total fixed capital formation in ECAFE countries. But it is often difficult to assess the reliability of data, as short-cut methods are generally employed to arrive at some estimates of capital formation. The methods of estimating capital formation in construction vary considerably from country to country. Broadly, two estimation methods are used: (A) based on data compiled from building permits and (B) based on the value of production of building materials, i.e. on commodity flow basis. In addition, there are special methods discussed under (C) and (D) below.

4.1.1 Building permit method

4.1.1.1 The building permits method is widely used in the United States and quite a number of

10. PALVIA, C. M. : Socio-Economic Aspects of Public Housing in India, page 2 (Paper discussed by the United Nations Meeting of the Expert Group on Housing Management and Tenant Education—Wellington (New Zealand), March, 1963).

western European countries. However, it is not suitable for developing countries. With this method, data are often collected or compiled from building permits issued by the local authorities. Generally these local bodies have bye-laws which require every builder to seek permission of the local body to construct a building. The applicant has often to give details about the design of the house, the quantum and value of the materials to be used, area of the rooms, labour-input, etc. Some countries have machinery to compile and co-ordinate these statistics. But there are certain difficulties involved. Some countries attempt to remedy the defects in estimates by conducting follow-up studies on under-coverage, under-valuation and the time-lag factor (*i.e.*, the time-gap between the issue of the permit and the actual construction).

4.1.1.2 In this connection, it would be useful to recall the recommendation made by the ECAFE Working Group of Experts on Capital Formation⁽¹¹⁾ that the system of reporting commencement and completion of buildings with an indication of the value of such construction should be instituted, or, if already in existence, implemented by municipalities and other similar local bodies in urban areas. The Group felt that permit data normally relate to limited areas, and that some way would have to be found to cover the rest of the building and construction activity, particularly in rural areas and in the non-monetized sector, which in the aggregate is likely to be of considerable magnitude in the countries of the ECAFE region. It suggested that, for this, well-designed sample surveys might well be the answer.

4.1.1.3 The building permit method is followed in China (Taiwan), Japan, the Philippines and Thailand. It has certain serious limitations, namely, (a) lack of correspondence between actual cost and the cost indicated in the permits, (b) time lag between the issue of the permit and actual construction, (c) likelihood of permits remaining unutilized and (d) non-inclusion of 'construction areas' for which permits are not issued. Some countries make attempts to effect adjustments for these limitations by means of follow-up studies.

4.1.2 Commodity Flow Method

4.1.2.1 The 'commodity flow' method consists of estimating the value of basic materials and services that enter into the construction of dwellings and other buildings. The important materials generally used are iron and steel, cement, bricks, timber, tiles, sanitary equipment, electricity installations, etc. In order to arrive at total consumption (or availability) of the materials, data of production, import, export, etc., are compiled (partly or wholly) and adjustment is made for mark-ups, customs duties, freight, insurance and other charges. The proportion of either 'materials cost' or 'labour cost' to total costs may be used to arrive at the total value of construction. According to an unpublished study undertaken by the Regional Housing Centre at New Delhi for 920 sqm (10,000 sq ft) of covered area of a single-storeyed family dwellings, about 108 M Tonnes (106 tons) of cement and 12.2 M. Tonnes (12 tons) of steel are wanted; for double-storeyed family dwellings about 118 M. Tonnes (116 tons) of cement and 19.3 M. Tonnes (19 tons) of steel; and for multi-storeyed family

dwellings about 195 M. Tonnes (192 tons) of cement and 42.7 M. Tonnes (42 tons) of steel. For a financial investment of Rs. 100,000 the consumption of cement for three types of buildings is respectively 109.7 M. tonnes (108 tons) 117.8 M. tonnes (116 tons) and 142.2 M. tonnes (140 tons); and for steel 12.19 M. tonnes (12 tons), 17.7 M. tonnes (17 tons) and 31.44 M. tonnes (31 tons). From these, it is possible to estimate the requirements for key building materials if enough is known about the complex of buildings. These can also be used to estimate the needed investment in a housing programme.

4.1.2.2 The commodity flow method is followed in Burma, India, Pakistan and the Republic of Vietnam. It also has its limitations and the reliability of the estimates depends on the care taken to account for all the elements of cost and determining the mark-up factors. As the coverages of the statistics relating to the availability of various types of materials and labour inputs are different, it is desirable to apply the appropriate mark-up for each item rather than to apply an aggregate mark-up for all the inputs. If the data on capital formation in construction through the public sector or organized private sector could be presented in such a way that the ratio of labour costs or material cost to total costs could be established, such coefficients would be useful. Estimates of the value of the total building construction could then be based on net imports and production of building materials, combined with technological ratios determined by such studies. It would be essential to adjust production and net import data for use of the materials for purposes other than construction. It would also be necessary to make adjustment for time-lag between production or import of materials and actual construction.

4.1.2.3 Countries following the 'commodity flow' method rarely employ census data on the construction industry or sample returns from building contractors, for estimating investment in construction⁽¹²⁾ either because the industrial census programmes do not extend to this industry or because the data collected are not suited to the purpose.

4.1.3 Use of technical coefficients concerning imports of materials

4.1.3.1 A variant of the commodity flow approach for measuring investment in construction is found in some countries. This consists of tying the estimates for construction to the value of imports of some building materials. This has obvious attractions for under-developed countries which import most of their building materials. In the application of the method, the value of a small number of imports of basic materials and supplies is multiplied by a certain factor to yield a rough estimate of the total value of construction. In one case, for example, the estimate is based on imports of cement alone on the assumption that cement accounts for one-sixth of the value of construction. In another case, three times the value of imports of certain building materials is used.

4.1.3.2 Reliability of the coefficients either in the 'commodity flow' method or in 'import' relation-method obviously depends on the care taken to account for all the elements of cost entering into the final value of construction and on the quality

11. United Nations, ECAFE document E/CN.11/ASTAT/Conf.3/L.2, 1960.

12. 1963 United Nations Programme of Basic Industrial Enquiries may open vistas in this direction as regards construction industry for some of the ECAFE countries.

of the statistics available for measuring these cost elements. The simple procedure of multiplying material expenses by a single coefficient is difficult to justify. Even more doubtful may be the procedure of applying a coefficient to one or a small number of imports since other imports and locally produced building materials and labour costs taken together may form a large part of the total building cost. Further, many types of construction work in under-developed countries have no imported or industrially produced material content, or require only simple indigeneous materials (such as in huts and farm structures of bamboo or mud).

4.1.4 Capital formation on government sector : a special case

4.1.4.1 Building permits are required generally for private residential construction and construction by the government is not accounted for by permits. Most countries make separate estimates of building construction and other works in the public sector from information in the accounts of government and public enterprises. Often, the sources of data for estimates of government capital formation are the budgets and accounts of central, state and local governments, the accounts of fiscal monopolies, other government-owned enterprises and joint government-private enterprises.

4.1.4.2 The public accounts documents of capital expenditure often do not give information in construction by types—residential construction and non-residential construction. Special enquiries from contracting firms engaged in public construction can be of assistance in making the estimates for investment in governmental residential and non-residential construction.

4.1.4.3 For government construction, a difficulty often arises because expenditures on 'normal' maintenance and 'major' repairs are mixed up and, in some cases, included in Government capital formation.

4.1.4.4 Now that the types of methods used to estimate capital formation in construction and more particularly in housing have been described, it will be useful to study the practices adopted in the various countries.

4.1.4.5 In *Burma*, total availability of building materials is taken into account (i.e. building materials imported plus domestic production of building materials, such as road metal, cement, lime, brick, tile, etc.). The total value of building and construction is estimated by taking 167 per cent of the c.i.f. value of imported materials and of the ex-factory value of domestically produced materials. The estimates include military construction. No adjustment is made for time-lag. Preparations are under way to verify the validity of the mark-up percentages. Breakdowns for residential and non-residential construction are not available as yet.

4.1.4.6 In *Ceylon*, the value of building construction is estimated at 3.33 times⁽¹³⁾ the value of imported building materials, such as non-metallic

mineral manufactures, base metals, pre-fabricated materials, etc. Their retail value is estimated by adding import duties and distribution margins to the c.i.f. value. Distribution margins are estimated on the basis of the results of a sample survey conducted among the leading firms which deal in these commodities and they are added to the products value of locally produced goods as well as to the c.i.f. value of imports. No adjustment is made for the time lag between the supply of building materials and the completion of the construction. It is assumed that stocks of building materials remain constant from year to year. It is sometimes found difficult to apportion a particular item between construction and consumption, and, in such cases, the total is considered to form capital formation.⁽¹⁴⁾

4.1.4.7 In *China (Taiwan)*, building permits are the most important source for estimates of private non-farm residential construction. In general, the permits cover about 85 per cent of residential construction in urban areas. For correcting under-estimates of building costs a 10 per cent blow-up adjustment is made.

4.1.4.8 In *Hong Kong*, the estimates of capital formation in buildings are derived from the statistics supplied by the Rating and Valuation Department and are classified into governmental and non-governmental buildings.

4.1.4.9 In *India*, data on utilization of materials such as iron and steel, cement, bricks, etc. have been used in conjunction with technological ratios (worked out on the basis of data on residential and non-residential construction undertaken by public works departments over different parts of the country), which connect the cost of individual items to the total cost, to obtain the level of investment in permanent ('pucca') construction. These are, however, only very rough estimates. Data on utilization are being derived from imports, exports and indigenous production of various building materials. For 'technological ratios', information is collected about the percentage distribution of costs between building materials and wages for various types of constructions in the public and private sectors. Estimates of rustic ('kutcha') construction are based on the data collected in the various sample surveys about expenditure incurred on the construction of residential houses, farm houses, cattle-sheds, wells, tanks, bunds, etc. and on improvement of land. Use has also been made of data available from the Rural Credit Survey conducted by the Reserve Bank of India and also from the imputed value accorded to rural construction in estimating net output thus generated.

4.1.4.10 In *Japan*, estimates of the value of construction of owner dwellings are based mainly on statistics compiled at the time when building commences. This method is employed both for the dwellings used exclusively as residences and also for those which are partially used for business purposes, excluding dwellings used partially for agriculture and fishing. Small-sized dwellings with less than 10 square metres of floor area are not covered in these estimates. Due to the foregoing

13. A ratio arrived between the final value of buildings put up and the retail value of building materials in the private sector.

14. "Survey of Consumer Finance" (1953) and "A Survey of Consumer Income and Outlay" (1963) conducted by the Central Bank of Ceylon with the assistance of Department of Census and Statistics may be of value in this regard. Also the "Survey on Family Budget of Urban Households" (1958) and "Survey of Private Investment" (1954) conducted by Department of Census and Statistics may be useful.

factors and also because of the fact that the cost of construction may be underestimated when the work starts, the total estimates of expected cost of construction are raised by 30 per cent. A special feature in Japan is an annual sample survey covering construction of wooden houses in the urban areas for finding out the extent of under-valuation in the estimates of building costs, which has been estimated as 10 per cent. One reason why the underestimate may not be very large is that most houses in Japan are made of wood, and usually the period of construction is at the most two months, so that the time-lag between commencement and completion is very small.

4.1.4.11 In *Pakistan*, the 'input' approach, both in respect of the 'materials' and 'labour', was followed in estimating figures of capital formation. It was discovered that, in respect of the 'materials' approach, the figures were lower and, in respect of the 'labour' approach, higher. Ratios of material costs to total construction costs were obtained from construction engineers. Total value of materials employed in construction activity was obtained by combining the value of domestic production (from census of manufacturing industries) and value of imported materials raised further by 10 per cent for transport costs. Previously this was done by the Central Statistical Office for two years; now it is handled by the Planning Commission, which has introduced certain refinements in 'materials' approach by making deductions for materials: (a) used in the production of machinery and equipment, and (b) exports.

4.1.4.12 In the *Federation of Malaya*, annual returns submitted by architects on construction undertaken under their guidance are used for estimating the value of new buildings constructed by the private sector. In addition to this method, data from a quarterly survey of starts and completions of residential and non-residential buildings are also used.

4.1.4.13 In the *Philippines*, the Bureau of the Census and Statistics derives data from the record of building permits issued and estimates the value of private construction in Manila. For the whole country the value of private construction is arrived by assuming that private construction in Manila represents 30 per cent of the total.¹⁵ This ratio now seems to be out of date in view of the rapid growth of construction activity in the Philippines in recent years. No adjustment is made for actual construction falling short of permits issued or for time lag between the issue of permit and actual construction. The Statistical Survey of Households includes surveys of construction activity by household to improve over the limitations inherent in the statistics of private construction.

4.1.4.14 In *Thailand*, building activity forms about 35 per cent of gross fixed capital formation and the estimate is based on data on permits issued for building construction in urban areas only. However, the issue of building permits is prescribed only for urban areas. The permits give data on type, floor space and value of buildings classified into five categories. Where value figures are not available, technological data on the various components of construction mate-

rials per square metre are imputed on the basis of an inquiry referred to a selected number of construction experts. The physical quantities of construction materials used are then evaluated at current prices in order to arrive at the total cost of construction materials. Value added in construction activity and adjustments for permanent fixtures and fittings are added to the total cost of construction materials so as to obtain the total value of buildings. However, no allowance is made for time-lag and no adjustments are made for private building activity other than that covered by permits, though its volume may be quite sizeable.

4.1.4.15 In *South Viet-Nam*, information on the issue of building permits was collected for Saigon-Cholon in 1956, and was extended to other provinces also with effect from 1957. Because of insufficient coverage of the information and ignorance about the cost of construction of roads, bridges and different types of residential houses, the data were not utilized for estimating capital formation. The estimates, are, however, built up from information on materials and finished products utilized, supplemented by inquiries and fragmentary surveys¹⁶ of construction costs.

4.1.4.16 As stated in para 2.11, the non-monetized forms of construction in rural areas pose serious problems for estimating capital formation. Some attempts have been made in this direction. For example, in the Federation of Malaya, substantial imputed addition to the estimated value of capital formation was made on account of the cost of cottages and other rural dwellings omitted from the architects returns. In China (Taiwan), the value of residential construction for farmers and fishermen was calculated according to the results of the 1955 agricultural survey and 1955 survey on the economic condition of fishermen respectively. In Japan, for farmer's residential construction, basic information is derived from a farm-household economic survey conducted on a national sample basis both monthly and annually. Dwellings used partially for purposes of fishing and forestry are not included in the estimates. In the Philippines, on the basis of a study made by the Central Bank, based on the agricultural census of 1948, a flat rate of P\$ 10 million was allowed for own-account construction in the farms from 1946-1947. In India, some estimates are made on the basis of the results of Rural Credit Survey and various socio-economic surveys as well as National Sample Surveys and surveys conducted under grants given by the Research Programme Committee of Planning Commission. In South Viet-Nam, since most of the houses in rural areas have been built from local inflammable materials which do not last very long, they are generally excluded from capital formation; only substantial buildings, public as well as private, built from imported or local materials are included.

5. FLUCTUATION IN THE LEVEL OF INVESTMENT IN HOUSING

5.1 To neutralize the effect of 'depreciation' of dwellings capital formation in dwellings equivalent to about 2 per cent of gross national product is necessary. Another addition to the capital stock in

15. Based on a survey of construction distribution in the Philippines, conducted by the Central Bank in 1949 (E/C.N.11 ESTAT/Conf.2/L.1, page 11).

16. According to these surveys, materials cost works out to about 60 per cent of total construction cost. The remaining 40 per cent are divided roughly between wages (29 per cent), profits and taxes (10 per cent) and cost of services (1 per cent).

housing is required to match the growth rates in population which may be about 2 to 3 per cent in developing countries. Hence, at the minimum, roughly 4 to 5 per cent of gross national output is necessary for capital formation in residential construction in developing countries to maintain the present level of housing standards.⁽⁷⁾

5.2 The present level of investment in dwellings in developing countries is less than or about 2 per cent of the gross national product, as against about 4 to 5 per cent in developed countries—where population growth rate is around 1 to 1.5 per cent and the condition of the present housing stock is comparatively of a very high standard.

5.3 In developing countries, a higher rate of capital formation in residential construction is therefore necessary.⁽⁸⁾ In this context it may be observed that housing encourages and strengthens savings. People who would not otherwise make savings available for capital formation like to save for housing and, to this extent, house building is a healthy lever for capital formation. In its turn it determines the level of certain other forms of investment such as public utilities, consumer durables in the form of fittings and furnishings, etc. An augmented rate of investment in housing might generate inflationary pressures and conditions of boom or economic growth. If such a process sets in, the economies of developing countries might be susceptible to economic fluctuations in the early stages of development following changes in the volume of investment in housing. When economies reach the take-off stage and a slump occurs, intensifying house-building activity would dampen its consequences. Whereas if there are signs of boom conditions approaching, a timely lowering in the tempo of house-building activity would put off the possible generation of inflationary pressures. Hence bunching of or drying of investments might be avoided in various periods by adopting policy measures in which housing as an important investment sector plays an active part.

5.4 In determining the level of a long-term investment in dwellings, depreciation and interest rate plays a crucial role. For example, the capital costs of housing may be too high, and as a consequence, mortgage interest rates and terms of amortization may be affected. On the other hand, lowering the interest rates or raising of amortization terms may make it easier to acquire a house at a lower capital cost; but recurring expenses may perhaps be higher. The complex process of price formation in the housing market is largely determined by interest rate, amortization terms and depreciation rate. Price formation also depends on the ability or inability of consumers to postpone purchases of house builders to estimate future demand. Failure to adjust the volume of house-building to these factors causes a recurring phenomenon of imbalance between supply and demand involving fluctuations in building activity. Changes

in the price of 'houses' and 'housing service' and the purchasing power of the people lead to doubling-up or vacancies in houses. When the prices rise, people cling to their existing housing standards or double up or accept fewer rooms and dilapidated housing thus causing vacancies. On the other hand, when prices decline, families seek better and more commodious dwellings and in the process even absorb the vacancies. During a boom period, larger incomes and past savings induce a large number of marginal buyers (and renters) to buy houses at favourable prices as credit terms become favourable, and so the volume of investment in dwellings increases fast. During depression depletion in savings reduces the number of those able to make down payments and thus effective demand shrinks, prices decline and at the same time the demand for lower priced rental housing increases.

5.5 For lower income groups whose proportion is large in developing countries, the income to be spent for shelter is fixed and their demand for housing is sensitive to small price changes. Hence, in developing countries, the low priced houses are more sharply affected by depression and prosperity. However, for the low-income group of people, the demand factor is not crucial, and it is the supply which is important; this should be secured⁽⁹⁾ by some exogenous agencies which might effectively neutralize market forces. It is also obvious that urgency for the establishment of such agencies is greater in developing countries. They can be agencies of the state itself, or sponsored and guaranteed by the state and enjoined to construct houses at reasonably low costs to ensure larger supplies for low income groups.

5.6 Suitable credit and fiscal policies can greatly facilitate the availability of housing finance or housing services by creating housing stock. Such policies have had beneficial effects in the United States and other developed countries; they not only helped to stop foreclosures but promoted recovery from the economic stagnation and depression of 1930's and halted decline of property values. The success of these emergency measures indicates that government has a vital role to play in urban housing by arresting depressions and by taking far-reaching measures to hasten recovery.

5.7 The demand for additional housing does not taper off fast after biological needs are satisfied as happens in the case of food or clothing. The effective demand emerging into 'purchases' (or 'renting' of houses at higher rents) is low when poverty prevails but rises rapidly when incomes increase and prosperity is in sight. Houses cost very much—some of them absorb the life's (or more than the life's) savings of an individual in the form of 'down payments' and loans. This factor creates difficulty, as private individuals are left to cope, unaided, with fluctuation in housing supply and demand. The state has to intervene by

17. These figures do not take into account provision of housing on account of 'additions and alterations', 'obsolescence' and 'vacancy ratio'.

18. ".....about ten new dwellings per 1,000 inhabitants are required annually in the less industrialized areas of the world to meet requirements existing and growing.....But total investment rates in less developed countries are usually of the order of 10 to 15 per cent of gross national product. It is evident that to sustain a rate of adequate housing construction would absorb practically the entire investment resources of the developing countries". (Para 23 of the United Nations *Ad hoc* Group of Experts on Housing and Urban Development, 1962 E/CN.5/367).

19. For example, in USA, urban houses added by new construction and conversion in the decade of the thirties constituted 0.3 per cent of the housing stock for the rental group under \$ 30 per month; 0.9 per cent for the rental group \$30-\$50; and 4.8 per cent for the rental group over \$50.

making high-level decisions for the community. The post-war period has provided ample proof of this trend in government policies, both in developed and developing countries.

5.8 Not all the causes of periodic fluctuations in house-building are easy to locate, as the industry is complex and un-organised. Also new factors enter into the situations, such as the increasing role of government intervention in this field since the thirties and particularly during the post-war period. But, as brought out in the foregoing paragraphs, the cost factor is important; and in the credit market the change in the interest rate has a great significance as a factor of price-formation. On the demand side, the level of family incomes both for purchasing (through savings) and hiring the houses (through current expenditure) play a decisive role, in addition to factors, such as population changes, rural-urban migration and general economic condition. Cyclical behaviour in housing is the outcome of a combination of these forces operating with varying strengths at different times. Therefore, besides governmental intervention, development of a well-organized house-building industry is equally essential especially for providing a large quantum of low-cost housing. The government has also to play an increasingly active advisory role in this direction; it has to break the rigidity of the supply side of the market and remove the obstacles on the demand side by giving equitable 'subsidies' (in the form of capital-grant, low interest rate, tax rebate, etc.) to the economically weaker sections of the community.

6. CONCLUSION

6.1 Proper allocation of investment in residential construction in relation to total investment, helps to provide some of the important elements of economic and social welfare. In countries of ECAFE region, its importance requires further recognition so that housing programmes find a suitable place in the formulation of social and economic development plans and in the balanced allocation of sectoral investments.

6.2 National accounting concepts—such as gross or net national product, gross or net capital formation (fixed and working), distribution, redistribution and employment of manpower in various economic activities, personal consumption expenditure, etc.—are also applicable to the housing or residential sector. In the ECAFE region, data on the proportion of construction in total gross fixed capital formation are available in seven countries, with breakdowns for 'dwellings' in six countries. Distribution of manpower employed in 'construction' is given by seven countries and the share of 'housing and household services' expenditure in private consumption expenditure by six countries. For eight countries data are available separately in respect of income generated by 'ownership of dwellings'.

6.3 A correct grasp of the relationships existing between different economic magnitudes helps to focus attention on certain significant points. For example, in countries of ECAFE region, less than 2 per cent of gross national product is devoted to housing, and about 10 to 20 per cent of gross fixed capital formation goes into residential construction; whereas construction as a whole takes up about 70 per cent of total gross fixed capital

formation, a very high proportion is not found in other regions. Possibly re-allocation of capital funds between 'dwelling' and 'non-dwelling' components of investment in 'construction' is called for, because capital formation in the residential sector is also productive (though spread over a long period of time); and in this sector, the capital/output ratio in the long-run may turn out to be more favourable than in the manufacturing sector. The employment volume—direct and indirect—generated (or employment-multiplier) by the residential sector is also high. The proportion of national consumption expenditure in countries of ECAFE region on 'housing and household services', though lesser than in the ECLA or developed countries, is also quite large. Moreover, the net national product generated by the "ownership of dwellings" is perhaps more significant in countries of ECAFE region than in developed countries.

6.4 Arising out of the national accounting variables, their magnitudes and relationships, certain factors emerge which are of use in valuing and expressing breakdowns of investment data, particularly in countries of ECAFE region. Such breakdowns might usefully be expressed in respect of; (i) urban and rural areas; (ii) public and private sectors; (iii) new construction and 'additions and alterations'; (iv) depreciation and replacement; (v) land and building; (vi) dwellings and essential services; and (vii) monetized and non-monetized sectors.

6.5 The four methods presently followed for valuing investment in 'dwellings' in countries of ECAFE region—'building permit', 'commodity flow', valuation through government accounting, and use of various technical coefficients—or reviewed and evaluated with a view to enabling these countries to consider specific improvements.

6.6 The changes in the quantum of capital investment, particularly in durable goods (and therefore in 'dwellings') have long been subjects of intense study in regard to their effects on the behaviour of the economy. Free play of economic forces in the field of housing has brought about booms and depressions or cyclical fluctuations and attempts have been made to control or correct them through government policy measures. There are studies⁽²⁰⁾ to show that accelerated or decelerated residential construction has some times been both a cause and a consequence of business cycles, particularly because residential gross fixed capital formation forms a substantial part of total gross fixed capital formation. In developing countries, with increasing desire to set the developmental process at work—the percentage of capital formation in residential construction may be raised over future years—probably to about or more than 4 or 5 per cent of the gross national product. This may make the economies susceptible to alteration of peaks and troughs in activity, though there would exist a reasonably effective safety-valve, for governmental residential construction is increasing as a part of development planning which has grown in post-war years. Economic planners in countries of the ECAFE region could help to bring about proper allocation of investment resources among various sectors for achieving balanced economic and social growth.

20. Important studies are : (1) Capital Formation in Residential Real Estate: Trends and Prospects—by Leo Grebler and others (National Bureau of Economic Research, USA). (2) G.F. Warren and F. A. Pearson : World Prices and the Building Industry (1937). (3) J.B.D. Derksen : Long cycles in Residential Construction (Economic, 1940). (4) C.F.V. Leser : Building Activity and Housing Demand (1951).

National Income Generation and Capital Formation in* the Housing Sector—Their Importance

By
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1. INTRODUCTION

1.1 "Capital formation" and "income generation" are quite simple and commonplace concepts and yet they appear to be high-sounding in the same sense in which our every day speech may sound if it were called by the more sophisticated term of 'prose'. Whenever we talk of saving a little money out of our current incomes for putting a roof over our head, we are referring to nothing else but 'capital formation' in the housing sector. Similarly the rent that we pay to our landlord or what we would have paid to him if we did not have a house of our own is nothing else but the income generated in that sphere of activity which goes by the name of 'housing'.

A 'house' is a place where one spends from one-half to two-thirds of one's life. It is, therefore, one of the most important material things that concern us. The dependence of human welfare and happiness on an abode is next only to food. In the words of Professor Mackintosh, "housing is one of the four pillars of Social Medicine.... It (housing) takes a central place in the background of health because it is the material representation of the home and family. The pillars on which Social Medicine stands are 'family', the house in which it lives, the food it eats, and the occupation of its members". It occupies such a pivotal role in our everyday life that a peep into the economic aspects of this problem cannot be regarded as abstract, burdensome or unnecessary.

1.2 Some special characteristics of the house building industry—Before going into the problems related to the measurement of 'capital formation' and 'income generation', it would be useful to dilate on certain special characteristics of the house-building industry. Although ordinarily considered a branch of the construction industry, housing differs in many ways from other construction operations. It is mechanical only up to a point; personal preferences and likes and dislikes are all the same as important in the initiation of investment activity in this sector as indeed the availability or otherwise of essential building material like sand and stone. Then, again it is not the architectural embellishment which is always the deciding factor in the designing of a house. When Bacon said 'Houses are built to live in and not to look on', he was trying to bring in not merely the language of a man of letters but he was also stating a fundamental truth. House-building connotes a series of activities, such as acquisition of land, planning and levelling of land to accommodate the housing operations, financing

the building operations, purchase of materials and equipment, employment of labour, etc. A house is merely the end-product of all these multifarious activities. These special characteristics of the housing industry have to be borne in mind while assessing the contribution of this sector to national income, as also the extent of capital formation through this field of activity.

2. INCOME GENERATION IN THE HOUSING SECTOR

2.1 The importance of an industry can be measured in several ways; by the value of its product—or better the value added by the industry's processes; by the quantity produced; by the number of workers employed; amount of wages paid; or by the industry's contribution to the national income. Continuing to the question of the net product generated in the housing sector, it would be appropriate to define what one means by net income generated, and to draw clear cut a distinction between house-building industry and housing sector. House-building industry refers to the construction of houses whereas housing sector refers to the ownership of property in the shape of residential houses. The discussion here is confined to the income generated out of the housing sector and not the income generated in the house-building industry as such, *i.e.* income flowing out of that capital asset known as a 'residential building'.

2.2 Having defined what we mean by housing sector, let us now go on to the concept of net income. In simple commonsense language, net income generated out of a particular branch of economic activity refers to the surplus of receipts by way of sale proceeds of products of that industry over the expenditure incurred for producing those products, excepting the expenditure by way of wages and salaries. In the case of houses, the income accrues to the owner because of the possession of the property. The income takes the shape of rent. It is immaterial if the owner gets the rent from a tenant or if he himself lives in the house and thereby consumes the income generated out of the housing sector. Out of the gross income by way of rent, has to be deducted such current expenditure as is required to keep the capital in tact and to earn the income by way of rent.

2.3 It may be asked if for estimating the income generated in the housing sector one should not confine oneself to the rents of such houses only as are actually let out to tenants. In other words, the question may be asked; is it necessary to impute rents to houses which are owner-occupied? Following the general practice of excluding from

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estimates of national income such income as accrues from one's own activities leading to simultaneous consumption, it might appear to be logical to exclude rents of owner-occupied houses from estimates of national income. For example if one drives one's own car, we do not include in national income estimates imputed value of the service rendered by a person to himself by way of the car driver. On this basis one could well argue that rents in respect of owner-occupied houses need not be included in national income estimates. Is not the example of a person marrying his own cook and thereby bringing about a diminution in national income well known in national income literature? There is, however, a fundamental difference between the services of a cook getting transformed in the services of a housewife and the services of a house being paid for in the form of rent or being enjoyed in the form of actual occupation of the house itself. In the case of houses, an owner who himself lives in the house does not perform any service to himself. The service is performed not by the man himself but by the capital which he owns. It is, therefore, only logical to include in national income estimates the income generated by way of rent in respect of owner-occupied houses.

2.4 Method of Estimation

2.4.1 In all national income work, the method of estimation is greatly influenced by the availability of data. The same is the case with the estimation of income generated in the housing sector. The ideal method of estimation would be one by which one could get for each residential unit on the one hand the rent realised or imputed rent and on the other the expenditure incurred on repairs, maintenance and depreciation of that unit. In other words if one had the annual census of houses which could give relevant information in regard to rents and incomes the task of building up a reliable series of "value added in the housing sector" would be rendered easy. This is well-nigh impossible. In fact even in the most statistically advanced countries data do not exist in this ideal form. One has to make do with such information as becomes available as a by-product of administrative activities connected with municipal affairs and the like. Then again, the quality of the data depends upon the location of the houses. For residential houses falling within the jurisdiction of municipal bodies the available information is usually much more detailed than for houses in the rural areas.

2.4.2 First of all one has to know about the number of houses and their distribution between rural and urban areas. The census of population, which is usually, a decennial event, gives the basic data about the number of houses. This information will naturally relate to a particular point of time. This has to be kept to date. In other words one has to know the number of houses that are added annually or that get out of use over a particular period of time. How does one estimate these additions or subtractions is a matter which we will deal with a little later, but having assumed that one some how or other knows the number of units the next problem is to estimate the rental income of these units.

2.4.3 Generally municipal administrations keep a fairly good account of the residential buildings

within their jurisdiction. This is because in most cases municipal boards impose taxes on residential houses. For purposes of tax administration, information in regard to rental value, total value of the property, size of the building, etc. is collected. In most cases an attempt is made to keep this information up to date. In fact in the case of houses which are rented out, it is not very difficult to keep this information up to date, provided the administration has the necessary staff and the willingness to do so. Whether in actual practice this is a separate matter? In the case of owner-occupied houses, even if one wanted to keep the information up to date one would not succeed. For example the rent of an owner occupied house will at best be an imputed rent and will not in all cases reflect the prevailing market rates. In any case, the rental value assessed by the municipalities for the purpose of levying property tax is in most cases likely to be an under estimate.

In the case of residential houses outside the jurisdiction of municipal boards, the problem of estimating correctly either the number of units or the rental value is rendered considerably more difficult. It is quite common in rural areas for rents to be paid in forms other than cash. There are no records about the changes in rents nor is any information available about the maintenance expenditure of houses.

A possible method of estimating rental incomes could be a sample survey of consumer expenditure. On the basis of the sample one could find out what is the expenditure by way of rent. This could then be used as the starting point and for the country as a whole one could estimate the income generated in the housing sector. An important conceptual problem that one often comes across in estimating income generated in the housing sector is the treatment of houses which are used both for residential as well as business purposes. One has in such cases to make *ad-hoc* adjustments to come to the figure of income generated in residential houses.

2.5 Estimation in India—In India, estimates of urban rents are worked out with the help of data relating to the amount of tax demand and the tax rate, *i.e.* percentage relationship between the tax and the assessed rental value of the houses; these data are generally maintained on a regular basis by the municipalities/corporations levying such taxes. The data collected are tabulated and analysed for the municipalities of varying population sizes. An overall correction is applied to these estimates so that under-estimation of the rental value in the municipal records may not vitiate results. In the case of rural areas, reliance has necessarily to be placed on such data as are available from the records maintained by village panchayats.

2.6 Percentage share of income from housing Sector in gross domestic product—Having briefly discussed the general methodology involved in the process of estimating income from housing sector, we may not turn to an examination of the share that income in the housing sector bears to the total national product. In India, the estimates of national income refer to net national product and not to gross national product. Income generated in the housing property sector constitutes roughly

3.5 per cent of the aggregate net national product. The corresponding percentages for some of the developed countries like U.S.A., Norway and Netherlands are indeed lower. Table 1 which is based on the material given by Dr. Palvia in one of the papers that he presented to the Seminar on Housing Statistics and Programmes for Asia and the Far East in September 1963, bears out this point :

TABLE 1
Percentage Share of Income from Housing Sector in Gross Domestic Product

	% of gross domestic product
Argentina	4.8
Burma	3.9
Ceylon	2.2
Denmark	4.1
India	4.1
Indonesia	5.0
Italy	2.4
Norway	2.9
United Kingdom	3.6
U.S.A.	2.4

It will be seen that the share of income generated by the ownership of housing in the gross domestic product is generally higher in developing countries than in developed countries. The explanation for this phenomenon is to be found in the fact that because of shortage of houses in relation to the demand, the level of rents is comparatively higher in developing countries. This fact, coupled with rather low levels of incomes, raises the share of income generated in the housing sector in the gross national product.

3. CAPITAL FORMATION IN THE HOUSING SECTOR

3.1 In view of the complex nature of the industry and the consequent difficulties involved in the collection of suitable data, it is often difficult to compute with any degree of accuracy estimates regarding capital formation in the housing sector. Under the circumstances, short-cut methods are generally employed to arrive at some estimates of capital formation. The methods of estimating capital formation in residential construction also vary considerably from country to country. Broadly two estimational methods are commonly used :

- (a) based on data compiled from building permits; and
- (b) based on the value of production of building materials, i.e., on commodity flow basis.

3.1.1 *Building Permits Method*—The building permits method is widely used in the United States and quite a number of other advanced countries.

However, it is not as much suitable for developing countries. With this method, data are often collected and compiled from building permits issued by the local authorities. This method is also used in Japan, the Philippines and Thailand. It has, however, certain serious limitations, namely (a) lack of correspondence between actual cost and the cost indicated in the permits (b) time lag between the issue of the permit and actual construction and (c) likelihood of permits remaining unutilised. Notwithstanding these, this method could be utilised in developing countries also by conducting *ad hoc* Sample Surveys based on suitable selection of samples.

3.1.2 *Commodity Flow Method*—The commodity flow method consists of estimating the value of basic materials and services that enter into the construction of dwellings. The important materials generally used are iron and steel, cement bricks, timber, tiles, etc. In order to arrive at total consumption (or availability) of these materials data on production, imports, exports, etc. are compiled and adjustment is made for mark-ups, customs duties, etc. The proportion of either 'material cost' or 'labour cost' to total costs may be used to arrive at the total value of the construction. This method is followed in Burma, Pakistan and India.

This method has also its limitations and the reliability of the estimates depends on the care taken to account for all the elements of cost and determining the mark-up factors. It would also be necessary to make adjustment for time lag between production or import of materials and actual construction.

3.1.3 *Other Methods*—Then there are other methods, such as tying the estimates for construction to the value of imports of some building materials, such as iron and steel, cement, etc. But such methods are not suitable for under-developed countries, since many types of construction work have no imported or industrially produced material content, or require only simple indigenous materials, such as the huts, farm structures, etc.

3.2 Having dealt with some of the methods adopted in various countries in estimating capital formation in housing sector, we may briefly discuss the magnitudes of housing investment and its share in total investment in construction and the proportion it bears to national income.

3.2.1 *Investment Magnitudes*—In developed and developing countries, about 10 to 12 per cent of gross national product is usually absorbed by construction in general. However, gross investment in construction as a proportion of aggregate gross investment is relatively higher in the developing countries being about 70 per cent, with the exception of Canada and U.S.A. where the proportion of gross investment in construction to total gross investment in the economy is almost as high as in some of the developing countries.

3.2.2 *Investment in Dwelling as a Proportion of Total Investment in Construction*—In developed economies, the proportion of gross investment in dwelling to total investment in construction is generally higher than that in developing economies. This proportion is about 25 per cent in Italy, 23 per cent in Sweden, 19 per cent in the U.K., 23 per cent in West Germany and 30 per cent in

the U.S.A. as compared with about 15 per cent in India, 11 per cent in the Philippines, and 13 per cent in Malaya. In Japan, however, it is one of the lowest being about 7 per cent. The low proportion in Japan which is so highly populated is perhaps due to cheapness of building material. Broadly speaking, the low level of investment in dwelling in developing countries indicates the lower priority given to housing investment, as compared to other components of investment in "Construction", for achieving faster economic develop-

ment in initial stages.

3.2.3 *Investment in Dwellings as a Proportion of Gross National Product*—The percentage of gross national product absorbed by gross capital formation in "dwellings" in the developing countries is generally lower as compared with the advanced countries. This is borne out by Table 2 which has been culled out from Dr. Palvia's paper referred to earlier.

TABLE 2
Gross Capital Formation in Dwellings as Percentage of Total Gross National Product

ECAFE Countries	%	ECLA Countries	%	Developed Countries	%
China : Taiwan	1958 1.7 1960 2.3	Argentina	1955 4.1	Austria	4.5
Federation of Malaya	1958 1.4 1959	Chile	1954 3.3	Belgium	5.0
Japan	1958 2.4 1960 2.2	Columbia	1953 2.7	Denmark	3.0
Korea, South	1958 1.8 1960 2.3	Ecuador	1957-59 2.2	Finland	5.7
Philippines	1958 1.0 1960 0.9	Honduras	1953-57 3.4	France	5.2
		Mexico	1955 2.4	Greece	5.3
		Venezuela		Italy	5.5
		British Guiana	1954-56 3.5	Netherlands	4.3
		Jamaica	1957-59 3.0	Norway	3.9
		Puerto Rico	1957-59 5.0	Sweden	5.1
				Switzerland	7.0
				United Kingdom	3.0
				West Germany	5.4
				United States	4.5

NOTE—This Table has been taken from Dr. C. M. Palvia's paper entitled 'Investment in Dwelling Construction' presented at the Seminar on Housing Statistics and Programmes for Asia and the Far East held at Copenhagen.

In developing countries the proportion varies between 1 and 2 per cent, while in the developed countries, this proportion varies between 3 and 6 per cent. It is 4.5 per cent in U.S.A., 5.4 per cent in West Germany, 5.5 per cent in Italy and as high as 7 per cent in Switzerland. It is, however possible that with the progress of economic development, and the consequent increase in national income levels and living standards, the demand for housing may increase substantially in many developing countries which in turn might result in larger investment in houses. This would push up the proportion of gross national product devoted to gross capital formation in "dwelling".

4. NATURE AND ROLE OF HOUSING INVESTMENT

4.1. *Productivity of investment in housing*—As indicated in Table 2 the income generated in the house property sector is less than 6 per cent of the total national income of the countries discussed here. However, investment (with the exception of Japan) claims as high a percentage as 20 to 30 per cent of the aggregate investment in the economy. This would imply a very high capital

output ratio in the housing sector as compared with the capital output ratio for the economy as a whole. Generally, the capital output ratio for the manufacturing sector is lower (by almost half) than in the housing sector. In other words, the productivity of capital (or the income co-efficient) is lower in the case of housing than of other sectors of the economy, such as manufacturing.

4.2. *Social infra-structure*—However, investment in the housing sector has altogether to be viewed from a different angle. It is true that the immediate returns from residential capital formation are not high. But expenditure on housing construction satisfies a fundamental human need and is an infra-structure for 'investment in human resources' as much as the investment in transport, irrigation etc. "The requirements for investment in housing are one of the most important factors determining how effective a nation's savings can be in raising productivity—housing may have an important bearing on the attitudes, health and efficiency of the labour force and therefore its provision in a sense may be regarded as a form of investment in the human resources of the Community. Consequently housing and similar investments occupy a

hybrid or intermediate position in regard to economic development”.

4.3. What should be the minimum rate of capital formation in housing sector—As observed earlier, the present level of investment in dwellings in developing countries is less than or about 2 per cent of the gross national product, as against about 4 to 5 per cent in developed countries where population growth rate is around 1 and 1.5 per cent and the condition of the present housing stock is comparatively of a high standard. In developing countries to neutralise the effect of depreciation of residential capital formation and also to provide for additional investment in housing to match the growth rates in population, a minimum 4 to 5 per cent of gross national product is necessary for capital formation in residential construction to maintain the present level of housing standards.

4.4 Role of housing investment in developed countries—In developed economies the role of investment in residential construction is somewhat different from that in developing countries. In the former, investment in housing is often used as an economic lever to even out fluctuations of investment in the economy. This is particularly so in countries like the United States. When the phase of depression sets in the economy, an intensified house construction programme dampens its consequences. Similarly, when there are signs of inflationary pressures getting the upper hand, a timely

lowering of the tempo of house-building activity would put off the possible intensification of inflationary pressures.

4.5 Role of investment in housing in developing countries—In developing countries, housing activity has to fit in the scheme of priorities that the stage of development of that particular country justifies. On the one hand, one has no difficulty in agreeing with the view that augmentation of housing facilities is a very desirable objective in developing countries; on the other, one has also to consider the fact that investment in housing is of a low-productivity nature. What does then one do? Does one give low priority to housing with all its consequences on the conditions of living, or does one give higher priority to housing which would mean that the income generated out of the investment would turn out to be somewhat lower than what it would have been if one had given lower priority to investment in housing. There is no clear cut or simple answer to these questions. These have to be decided keeping in mind the requirements of each economy. In a way, the logic of development itself dictates the priorities. If one gives high priority to development of industries, one is inevitably committing the economy to higher rate of urbanisation. This would also mean that in case the development is not to create any distortions—social and economic—it will be incumbent on the planning authorities to undertake a fairly big housing programme.

Urban Land Policy (with special reference to ECAFE Countries)***

By

Shri J. P. Sah†

1. Land is a relatively scarce and inexpandable resource. It is capable of being put to a number of alternative uses but once it comes under a particular use, the same perpetuates itself and becomes difficult to alter. Moreover an improper use of any piece of land affects the community at large. Unlike many assets which depreciate over time, land appreciates in value. And this appreciation in its value is largely due either to public improvements or the result of social growth and progress. In most cases the individual owner does not contribute anything to earn the enhancement in his land value. A number of controls and restrictions imposed by the public authorities either under land use plans or otherwise have the effect of re-distributing land values with the result that some pieces of land may gain in value while others may come to lose it. Because of scarcity of buildable land, land-speculation in and around cities and towns is rampant. When land prices are artificially boosted to high pitch, public or private construction activity is seriously hampered and the middle and low income classes find themselves the worst sufferers. In view of these considerations a proper policy for urban land is imperative.

2. In the Indian context the need for such a policy is all the more urgent because the country has about 12 per cent of the world's population against 2 per cent of the world's land area and a colossal food problem in addition. Coming specifically to the urban areas, the existing physical environment is woefully deficient and its density distribution is irrational and inequitable. The new extensions of the cities and towns are nothing more than recklessly scattered housing constructions quite often haphazard, premature and sub-standard. Both these call for proper planned development or redevelopment. The required urban planning cannot be undertaken without a comprehensive urban land policy. What is true of India is equally true of most developing countries of Asia.

3. No policy can, however, be formulated unless there is clarity about the broad objectives it desires to achieve. The objectives of an urban land policy would naturally depend on a number of considerations like the man-land ratio, legal and constitutional framework, political and ideological backgrounds, administrative and financial resources, etc. Since these would differ from country to country, place to place and time to time, the objectives cannot be expected to be the same everywhere. Nevertheless certain broad goals and objectives of urban land policy have been

found acceptable by practically all the countries including those of the ECAFE Region. These objectives, as recommended by the U.N. Seminar on Planning for Urban and Regional Development held at Nogoya (Japan) in 1966 are :—

- (1) 'Achieve a social optimum in the use of land and planned development of the physical environment to facilitate rapid economic growth and to promote a healthier and better life for the community';
- (2) 'Eliminate conditions of scarcity of land, particularly developed or serviced land, to facilitate quick execution of housing and other public and private works';
- (3) 'Create conditions in which the poorer and under-privileged classes of society get a fair deal in the matter of housing and enjoyment of the common physical environment';
- (4) 'Curb undue rises in land values and prevent land speculation';
- (5) 'Utilize the gains of socially generated surpluses in real estate values for the common good'.

4. For achieving these broad objectives the public authorities would have to decide certain strategies and techniques and formulate concrete measures and programmes. These techniques and measures may be considered as falling under three broad spheres of state powers, namely, police powers, revenue powers and the powers of eminent domain or compulsory acquisition of expropriation of private land and property. The most effective instrument of a land policy, which derives its sanction from all the three spheres of state powers just mentioned, is land use planning or what is popularly known as town and country planning. It is the land use planning of our cities and towns which alone can give us scientifically the best possible ideas about the optimum use of urban land. In fact, master plans are being prepared by the State Town Planning Departments for a number of cities and towns in India. Those for Delhi, Calcutta and Bombay have already been completed. Since the Third Five Year Plan the Union Government has been providing to the State Governments some financial assistance towards the cost of preparing master plans for a number of cities and towns which have been considered as deserving of priority.

5. The deficiencies of town planning in our cities and towns are : firstly, that in many States there being no town planning legislation, the

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master plans cannot be enforced or implemented and as such they remain plans on paper only. In some other States the existing town planning law is rather obsolete and under the inadequate, obsolete law, town planning activity cannot be undertaken as scientifically as it should be. Secondly, the enforcement and implementation of urban plans has not yet been undertaken in the right earnest even in places where town planning law is adequate. Thirdly, the town planning activity which the master plans envisage is not well co-ordinated with the national economic planning and developmental activities of the State and National Five Year Plans. And lastly, the master plans are seldom prepared scientifically in the sense that they are not always based on necessary physical, social, economic and other surveys nor do they contain any recommendations on the tools of plan-implementation like capital budgets, financial programmes, zoning regulations, and administrative and organisational arrangements.

6. Besides planning, the other instruments for achieving the objectives of an urban land policy are the municipal building and health bye-laws, sub-division regulations, zoning regulations and a variety of licenses important among which are industrial licenses. These measures can be used either as a part of a master plan or even independently of it. When these form a part of the master plans they may prove more effective. Even though these are, generally speaking, negative measures, they can go a longway in helping the achievements of some aspects of urban land policy. The pity, however, is that the municipal government bodies and other public authorities have seldom been able to make the best use of their bye-laws, regulations and licensing powers. Where the public authorities administering these measures are more than one, coordination among them is quite often conspicuously absent. For instance, the licensing authority administering the Cinematography Act would hardly bother about the locational aspect of a cinema hall on which the town planning department may be better able to advise.

7. A number of taxes affecting urban land exist in practically every country of the world. The number and relative importance of these taxes may differ from country to country. One particular tax which is found everywhere is the Property Tax levied by the municipalities or urban local governments. Besides the local bodies, the National or Central Government and State or Provincial Government also, levy certain taxes which affect the land and real estate. In India, for example, most municipalities levy property and service taxes. These taxes are based on the reasonable annual rental value of the assessed land and property. Some State Governments, e.g. Madras levy an urban immovable property tax. The Stamp Duty charged on registration of transfers of property is collected by the State Governments though infrequently a surcharge on Stamp Duties is leviable by some municipal corporations also as for example in Delhi. Certain Central Taxes like the Wealth Tax, Capital Gains Tax, Gift Tax and Death Duties levied in India also impinge on land property.

Even though a number of taxes are levied by governments at different levels there has not so far been any systematic attempt to use taxation measures in a manner that they encourage a desirable use of land or development or dis-

courage the undesirable development. A flexible tax system which provides for differential rates, tax reliefs and exemptions and penal tax rates could help in reinforcing the recommendations of the land use plans and accelerate the pace of its implementation. Similarly there has not been any attempt at proper administrative and fiscal coordination in the matter of urban land taxation. If such a coordination were achieved the various tax measures could have functioned as effective instruments of an urban land policy. Through these taxes not only could the public authorities mop up a sizeable part of the unearned increases in land and property values and gain resources for urban development but they could also have curbed the prevailing widespread speculation in urban land.

A number of suggestions have been made from time to time on the subject of using the tax measures specially to mop up unearned increases in land and property values. These suggestions include reforming the system of municipal property taxation by altering its basis from rental value to capital value, separate rating of site and development, levy of a new tax on unearned increase, rationalising the system of capital gains and wealth taxes, the levy of development charge or betterment levy and enhancement of duty on transfers of property etc. Each of these suggestions has its merits and demerits. It would, however, be very irrational to conceive of any particular tax measure or measures in isolation. This caution is necessary because in a sellers' market the real incidence of any new tax or increased tax rate tends to fall on the buyer only. In such an event, tax measures may have an effect contrary to what is expected of them. A better approach may be to consider the entire range of taxes on land and property as one integrated system and think of reforming any particular tax or taxes only in that overall frame and with due consideration of the total burden of all the relevant taxes.

8. Even on making most optimistic assumptions about the efficacy of measures covered by police and revenue powers of the State, these measures remain, by and large, negative or at best supplementary measures. A positive land policy, which wishes to make sure that the urban environment will be properly planned, speculative activity in land will not take place, land values will not unduly rise and adequate quantity of land at the right time, place, and price would be available, cannot be thought of unless the State intervenes in the private land market in a big way and operates some sort of a Land Bank. The implication is that a public authority has to gain ownership of sizeable quantity of land, preferably in advance of the anticipated future development, either through purchase in the open market like any private person or by invoking the power of eminent domain or compulsory acquisition. To the extent the purchase of land in the open market is possible, the problem is settled rather amicably. It is doubtful, however, if all the land requirements of the public authorities could be met by open market purchases. In a country like India where the emotional and economic involvement of the people in land is too deep, the chances of success of open market purchases of land by public authorities are bleak. At any rate a recourse to the other alternative of invoking the right of compulsory public acquisition is inevitable.

The greatest obstacle in the way of public authorities' gaining ownership of land through compulsory acquisition is the law relating to compulsory acquisition of land. The procedure prescribed in the Land Acquisition Act of 1894, which is a Central Act and on which most of the State Land Acquisition Acts also are based, is quite long-drawn and dilatory. More crucial is the problem posed by the principle of compensation as laid down in the Act, namely, payment of compensation based on market value of land on the date of first notification under section 4. Incidentally, in most countries of the ECAFE Region the compensation formula is quite identical. The difficulty about this compensation formula is that the market value of any piece of land, specially in an urban situation, is quite high and large scale acquisition of land at that high price is not possible for financial reasons. The land value is high not because the present real worth of the land warrants that price but because market value conceals the unearned increments which have accumulated over the past as well as the "potential development value" which pertains to the future. The potential development value is a speculative value. The point that strikes is that even presuming that the payment of compensation at market value is in the best interests of the land owner, it may not be so in the interest of the community which will have to bear the burden of heavy compensation cost in the form either of increased taxation or higher prices of land. Obviously, the present compensation formula does not seem to fit into the new social context where planned economic development of the country and planned physical development of the urban areas have been accepted as important parts of public policy of programmes. A rational principle of compensation needs, therefore, to be evolved and accepted. This new principle should be one which balances the interest of an individual land owner against the interest of the community at large. Only by having a reasonable and social equitable principle will the public authorities find themselves in a position to undertake the planned development of the urban areas on a scale commensurate with the needs of the urban situation.

The acquisition of land by the public authorities is not an end in itself because after acquiring land the same must be properly developed and serviced and made available for private and public housing and other requirements. This means that a public authority should have policies and programmes

pertaining to the development and disposal of land. The crucial questions in the context of land disposal policy pertain firstly to the type of title which the public authorities would like to confer on any person who is given a plot out of the public Land Bank. In a way the controversy revolves round "free-hold" versus "lease-hold" basis. The consensus of opinion seems to prefer the lease-hold basis as it enables a public authority to retain the ownership of land and provides a good method of putting certain socially desirable conditions in the lease-deed as, for example a condition relating to the sharing of unearned increase in the land value at the time of transfer of the land and property.

Secondly, there is the question of a price policy. The land disposed of by the public authorities may be for different uses like industrial, commercial, residential, institutional and recreational. Even in the residential use a residential area may be designed for persons of high, middle or low income groups. Should a public authority charge the same price from every user or from everyone irrespective of the income group to which he belongs? In any programme which is being operated in the larger social interest the answer to this question cannot be in the affirmative. Its answer lies in the public authority's evolving a discriminating price policy—a policy which discriminates as between the uses and also as between persons of different standing in the economic or income scale. In fact, such a discriminating price policy is being pursued in their land disposal programmes by the Delhi Administration and the Delhi Development Authority. Even where such a price policy is pursued it must be ensured that the total transactions would not end up in deficits but result in a reasonable surplus or a reasonable rate of return on the capital invested.

9. Before concluding this paper it needs to be stressed that an urban land policy can only be achieved through a wide range of measures and programmes. None of these measures should, however, be taken or implemented in isolation but only in an integrated manner and as organic parts and parcels of a well considered, consistent and integrated design. In other words, the success of an urban land policy would depend as much upon the availability of an adequate organisation administration and legislation as it would on the measure in which inter-agency coordination can be achieved in practice.

House Building Loans Granted to Government Employees in India

By
Late Shri G. S. Bhasin†

1. House building loans granted to government employees out of Government funds are based on mortgage financing system. The facilities for the grant of loans is almost available in all the developed countries of the world out of Government funds. The principles and practices followed for house building loans granted to Government employees are based on certain financial techniques which derive their strength on social and economic policy to which these governments are wedded.

2. SOME PRINCIPLES AND CHARACTERISTICS OF MORTGAGE FINANCING

2.1 Amongst the money and capital markets, by any test, the mortgage market is the largest and most important segment of the capital markets. Many mortgages are retired earlier than their maturity, frequently as a part of refinancing technique for Real Estate property at the time of sale; this usually brings about the gross volume of new mortgages with a lesser economic stock.

2.2 Mortgages in real estate market differ from capital market instruments in one important respect; mortgage owners put more reliance on the value of the property on which the mortgage lien is placed for security than on the debentures. Some corporate bonds involve mortgage security but most realistic security analysts count on the income producing ability of the borrowers far more than on the liquidating value of the underlying property. The great many real estate mortgage investors, however, continue to depend more on the value of the property than on the borrower. In this respect mortgage credit for housing has many points of semblance with loans of automobile and other consumer durables, where lenders try to assure themselves that the car or home borrower is primarily not a flagrant debtor; except this ensured inquiry, the creditors do not go very far in credit checking.

2.3 Mortgages also have one other characteristic in common with consumer credit arising out of the purchase of consumer durable goods, here the 'down payment' and 'maturity terms' are often critical factors in the process of transacting. Mortgage markets look for accommodation of marginal borrowers who are in a position to put up a small down payment either on home or automobiles; owner's equity thus tends to be modest. The maturity of such loans also has been an important determinant to fix size of their monthly instalments. For example, before the Great Depression most mortgages in the United States were written with lump-sum maturities; in fact they were seldom

paid at maturity and had to be renewed often. The monthly payment of amortised loan has thus made the final maturity a more critical factor in finding qualifying buyers.

2.4 Strictly speaking, a mortgage is a legal technique of providing security against a loan. It is a way of creating a 'lien' on real estate which becomes effective. The corner-stone as well as the critical segment of the mortgage market is the part that finances play in residential real estate and is of two kinds; owner occupied dwellings and rental dwellings. The residential mortgages market is further divisible into; (i) ordinary and conventional mortgages; and (ii) insured or guaranteed mortgages. The former has existed in every community for centuries but the latter is a new device—it is a child of the inter-war period; after the World War II it has come to adulthood in some of the advanced countries.

2.5 The guaranteed mortgage loans belonging to the second variety are made for amounts almost equivalent to the full appraised value of the properties: further, with the lower price range of the property mortgaged, the allowable debt/value ratio is larger. Such a mortgage is regularly retired by making regular instalment repayments. Thus they stand in complete contrast to the first variety of mortgages which were lump sum obligations payable or repayable in one (and often the only one) instalment of the 'principal plus interest'. During the thirties this system as initiated in the United States, restored order in the demoralised mortgage market created by the Great Depression and later it has come to be regarded as an important welfare measure as greater benefits for low-income buyers are inherent and implicit in the longer debts permissible for lower-valued houses. In some countries, where the loan to assessed value is not large, the second and third mortgages prevail, but in the U.S.A. when large ratio is permissible, the scope for the second and latter mortgages is automatically eliminated as a part of welfare function. In conventional mortgages, however, ratio of loan to assessed value being conservative and low, the second and later mortgages were necessitated.

2.6 Special features of mortgage financing of rental housing need a mention. Often the investors in real property desire to maximise their income as well as the flow of liquid funds and this may ensure the use of borrowed funds, when the borrowed funds may cost less than the yield of income available on rental housing. Due to the large average size of rental properties, the borrowed

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funds are available at lower rates than is possible in the case of single family owner-occupied houses.

3. PRACTICE OF MORTGAGE FINANCING

3.1 It will now be useful to familiarize with examples the accepted terms and instruments, practices and conventions, etc., that prevail in mortgage markets as these have been used in the foregoing paragraphs and will also be used in later paragraphs as well. These relate to (1) term of loan; (2) rate of interest; (3) amortisation; (4) debt appraised value ratio.

3.1.1 *Term of Loan*—Mortgages may be for short periods of 1 to 5 years, they may be median-term for 5 to 15 years, or long term loans for periods of 25 to 100 years. The trend for the last three decades has been to shift generally from shorter or median loans to long term loans; and the tenure of the loans under public sector housing schemes have invariably been of longer period than in others. In 1950, in the U.S.A. average term for all mortgage loans in the United States was about 12 years, but now under federal programmes it is 20-25 years. Life Insurance Companies have also now been lending for fairly long terms. In Austria, the loans guaranteed by the Federal Housing and Settlement Fund and Housing Reconstruction Fund are granted for 100 years. In Denmark, the range is between 40 and 60 years; in Finland, up to 45 years; in France 75 years; in Norway 75 to 100 years; in Switzerland 25-50 years; in the United Kingdom 60 years; and in Yugoslavia 50 years, whereas, in the developing countries, the tenure of the loan is of median range of 10-30 years. In India, the period ranges from 10-30 years under different social housing schemes; in Indonesia 20-25 years; in Jamaica 20 years. What is, therefore, called for is a direction of the mortgage financing schemes to longer duration, or at least to match these with the average life of the houses in the economy.

3.1.2 *Rate of Interest*—The mortgages may bear high or low interest charges. In Germany the interest rates are usually high; whereas they are fairly low in the United States and other Western European countries as well as in the centrally planned economies. In Australia, the interest rate is 4 per cent and in case of loans, from Federal Housing and Settlement Fund the interest is only 1 per cent; in Denmark, usually 2 per cent though the range may sometimes be between 3 and 5 per cent; in Finland for ARAVA loans the rate has fluctuated from 1 to 3 per cent but since 1955 it is at 1 per cent; in the Netherlands, 3 to 3.5 per cent; in Norway, 3.5 per cent and sometimes even without interest; in Sweden, 4 per cent; in Switzerland, 3.5 per cent; in Bulgaria and Czechoslovakia 4 per cent; in East Germany, from nil for cooperatives to 4.5 per cent for private houses; in Hungary and Poland from 0.2 per cent to 2 per cent; in the U.S.S.R. 2 per cent; and in Yugoslavia between 1 and 2 per cent. In some of the developing countries also the rate of interest is 2 per cent only, such as, in Ceylon, Indonesia and Jamaica. In India, however, the interest rate for mortgage houses ranges from 4½ per cent to 6½ per cent.

3.1.3 *Amortization*—Mortgage loans can be repaid in one instalment or periodic repayment may either be made regularly over the period of the

loan, say, monthly, quarterly, half-yearly or annually. It is common experience that the mortgages generally prefer to make regular payments of uniform amounts. The governmental and institutional agencies prefer regular instalment payments and may then even insist on this. The inclusion of amortization terms make the loans more attractive to the mortgages and it imposes lesser burden of interest charges on the mortgager because the interest is generally charged only on the balance due. Often, there are places where rents are high and the instalment may be even cheaper than the prevalent rents in the market with the added advantage of owning the house after all instalments are paid. Realisation of this has led to an increase in the proportion of amortized loans. In the United States, in 1940 unamortized loans were 18 per cent and this came down to 7 per cent in 1950 and the proportion of amortized loans increased to 85 per cent. In India, under all social housing schemes all the loans are repayable within a prescribed period by regular payments. The chief advantages of having amortized loans, lies in the fact that they provide a "revolving fund" in the hands of lending agencies so that they can incessantly increase their lending operation without putting in additional funds, which are in any case scarce in developing countries. In course of time, the schemes can become self-financing because the entire revenue, capital payments, interest and other expenses are realised.

3.1.4 *Debt/Appraised Value Ratio*—A uniform practice prevails to have a security for the housing loans; but the ratio ranges from 20 per cent to 40 per cent in the case of conventional mortgages; however, in the case of governmental loans and guaranteed mortgages the high value has become the rule and these loans are fully amortized and as well may bear lower rates of interest. The loans advanced have a proportion to total value (or cost of construction) up to 60 per cent in Austria; 75 per cent in Denmark and France; 65-80 per cent in India (though for slum clearance it is 100 per cent to local authorities); in Italy up to 100 per cent, in Netherlands and Norway up to 100 per cent; in Sweden 70 per cent to 85 per cent and 100 per cent for projects controlled by municipalities; in Switzerland 60-65 per cent and in the United Kingdom from 90 to 95 per cent; in the U.S.A. from 50 to 90 per cent and up to 98 per cent in some special cases. In centrally planned economies, the range is up to 70 per cent in Bulgaria; in East Germany up to 80-85 per cent; in Hungary 70 per cent; in Poland between 70 and 85 per cent; in U.S.S.R. between 75 and 100 per cent; and Yugoslavia 75 per cent. In developing countries of Ceylon 75 per cent, Indonesia 80 per cent, and Jamaica 66.6 per cent. However, the down-payments pose a highly vexatious situation and it proves highly intractable in developing countries. In order to reduce the troubles and tribulations of the size of downpayments, it is essential to raise the debt-value ratio.

3.2 Mortgage financing in India is available also through semi-public, co-operative and private institutions. These institutions are Life Insurance Corporation of India, Employees' Provident Fund, Scheduled and Commercial Banks, Co-operative Credit Finance Institutions and Co-operative House Mortgage Banks. The Life Insurance Corporation had earmarked Rs. 60 crores for the Third Plan period to give long-term loans to the State Govern-

ments for funds to be employed in social housing schemes. Life Insurance Corporation also grants long-term loans to Apex-Co-operative Housing Finance Societies on the guarantee of the respective State Governments. The Corporation also provides loans on mortgages. It gives loans to policy holders for house construction under "Own Your Home" Scheme. Perhaps, it may be prudent to persuade the Corporation to channelise more and more funds for the long-term house building loans. The total investment of L.I.C. is about Rs. 800 crores of which at present about 5 per cent has been provided for investment in housing. For the Fourth Plan it is hoped that the L.I.C. funds for housing would reach a high mark of over Rs. 150 crores or about 15 to 20 per cent of the then existing funds of the L.I.C. The Employees' Provident Fund at present is over Rs. 400 crores, and it is expected that by the end of the Fourth Plan this would reach nearly Rs. 1,000 crores. If 10 per cent of the provident funds are allowed to be invested in housing for the members account-holders as a second mortgage, this source will be able to provide roughly Rs. 100 crores during the Fourth Plan. However, it would be necessary that provident fund investments in housing are guaranteed by the State Governments and towards the Employees' Provident Funds Acts may be advisedly amended.

3.3 It is significant that 'loans' up to 80 per cent for house construction are advanced as first mortgage in India by the Government; no private institutions come in the picture. In other countries, first mortgage by the Government is usually lower—between 15 and 40 per cent though higher percentages are available only after being supplemented by second and third mortgages as is the case in most of the Scandinavian countries. Thus, it may be considered a matter of credit that Government alone provides 80 per cent of the 'loans'; nevertheless, they cover an insignificant portion of the housing needs in the country; the interest charged is relatively higher and the amortization period is also not a long one. In one way, it raises the question about the advisability or inadvisability of making public fund as full substitutes for private funds. Generally it is the view that Government funds should not be utilised for loan operations and should better be employed for guaranteeing loans granted by other agencies, because there is no other field of private activity where private funds play a more important role than in house-building.

4. ADVANCES FOR HOUSE BUILDING

4.1 The grant of advance to Central Government servants in India for the building of houses are based on certain rules analogous to the principles of unconventional Mortgage finances. These rules relate to :

- (1) Eligibility,
- (2) Conditions to be fulfilled,
- (3) Purposes for which advances may be granted,
- (4) Amount of Advance,
- (5) Disbursement and security,
- (6) Conditions as regards construction, maintenance, etc. and
- (7) Repayment of advance.

4.1.1. *Eligibility*—(a) Permanent Central Government servants; (b) Central Government servants who are not permanent and who have rendered at least 10 years continuous service provided they do not hold a permanent post in State Government and that the sanctioning authority is satisfied that they are likely to continue in the Central Government at least till the house in which the mortgage is sanctioned is built and/or mortgaged to Government; (c) Officers of All India Services, such as, I.C.S., P.C.S., etc. who are on deputation to the Central Govt. whether on deputation permanently or on deputation to Central Government continuously for 6 years—are entitled to the grant of house building loans.

However, when both the husband and wife are in the service of the Central Government the eligibility for the grant of loan is admissible to only one of them.

4.1.2 *Conditions to be fulfilled*—The applicant for the grant of house building loan is required to fulfil the following conditions :

- (a) The cost of the house to be built/purchased (including the cost of residential plot) should not exceed 60 times the pay of a Central Govt. servant or Rs. 75,000 whichever is less and the applicant should not have availed any loan or advance for the execution of house from any other Government source ;
- (b) In cases where a Government servant makes a final withdrawal from provident fund from the construction/acquisition of a house or residential plot, in addition to availing of house building loans, the total amount of the advance sanctioned under these rules together with the amount drawn from the provident fund should not exceed 60 times of monthly pay or Rs. 75,000 whichever is less ;
- (c) Neither the applicant nor the applicant's wife/minor child should own a house. However, this condition is relaxable in exceptional cases, such as, when the applicant's wife/minor child owns a house in a village and the applicant wants to settle down in a town or where an applicant, husband or wife, own a house jointly with other relations, e'c. and he desires to build a separate house for himself; and
- (d) The floor area of the house to be constructed or purchased should not be less than 380 sq. ft. The question about the floor area is now under the consideration of the Government because in case of low income Government employees there may be difficulties in metropolitan towns to construct house of the prescribed area within the prescribed cost.

4.1.3 *Purpose for which Advances may be Granted*—The house building advances are granted for :

- (a) Constructing—a new house including the acquisition of a suitable land for the purpose—either at the place of duty or the places where the Government servant proposes to settle after retirement ;

- (b) For purchasing a ready-made house which has not been lived in since its construction; again if the agency offering for sale is Government or city Government authority and if the house has not been built under either the low or middle income group housing scheme;
- (c) Enlarging living accommodation in existing house owned by the Government servant concerned provided that the total cost of the existing structure and the proposed additions and expansions does not exceed 60 times his monthly pay or Rs. 75,000 whichever is less;
- (d) Not more than one advance can be sanctioned under this rule to a Government servant during his/her entire service. The advance cannot exceed any amount equal to the 36th monthly pay including officiating pay, dearness pay, personal pay and special pay subject to a maximum of Rs. 25,000 in case of construction or purchase of a new house and Rs. 10,000 in case of enlarging the living accommodation in an existing house. The Government is considering to raise the limit now to Rs. 35,000. Low paid employees, however, can be granted advance up to Rs. 4,800 irrespective of the pay actually drawn by them.

The actual sanction of the advance is determined by the Ministry of Works, Housing and Supply from the basis of the plans, details, specifications and estimates to be furnished by the applicants justifying the amount of advance applied and is restricted to the estimated cost of construction/purchase within the ceiling amount prescribed above. The amount of advance is, however, restricted to the amount which a Central Government servant can repay partly from his gratuity or death-cum-retirement gratuity partly—conveniently through monthly deductions from his pay before the date of his superannuation. For the purposes of these calculations it is assumed that a Government servant can ordinarily start repaying the advance one year of the date of approval of the advance in instalments up to 33.3% of his pay which will be within his paying capacity.

4.1.4 *Disbursement and Security*—The house building loan once sanctioned is not paid to the Government servant in one lump sum. It is disbursed in instalments, for example :

(1) In case of advance required partly for the purchase of land and partly for single storey new house or enlarging new accommodation; (a) An amount not exceeding 20% of the sanctioned advance will be payable to the applicant for purchasing a developed plot of land. The land purchased and the sale deeds in respect thereof is to be produced for the inspection of the department concerned within two months of the date on which the above amount is drawn failing which the applicant is liable to refund at once the entire amount to the Government together with interest; (b) An amount equal to 30% of the balance of the advance is payable on mortgaging in favour of the Government—the land purchased by him alongwith the house to be built thereon; (c) An amount equal to 40% of the remaining, after deducting from the sanctioned amount of advance,

the instalment given for the purchase of land; and (d) the balance of the sanctioned advance will be payable when the construction of the house has reached roof level, provided that the Head of the Department is satisfied that the development of the area in which the house is built is complete in respect of amenities, such as, water supply, street lighting, roads, drainage and sewerage.

(2) In case of advance given for constructing single storey new house or enlarging living accommodation in existing house the instalments will be disbursed as follows: (a) 30% of the sanctioned advance payable to the applicant on his mortgaging in favour of the Government the land purchased by him alongwith the house to be built thereon, (b) 40% of the sanctioned advance payable when the house reaches plinth-level, (c) the remaining 30% of the sanctioned advance payable when the house reaches roof level subject to the Head of the Department's satisfaction that the development of the area in which the house is built is complete in respect of amenities, such as, water supply, street lighting, roads, drainage and sewerage.

(3) Advance given partly for the purchase of land, partly for constructing a double storey new house or enlarging living accommodation in an existing house, the disbursement will be in following instalments; (a) 15% of the sanctioned advance payable to the applicant for purchasing a developed plot of land on which the construction is to commence on his executing an agreement in the prescribed form for the repayment of the advance, (b) 25% of the balance of the advance payable to the applicant on his mortgaging in favour of the Government the land purchased by him alongwith the house to be built thereon and, (c) 30% of the remaining amount after deducting from the sanctioned amount of the advance, the instalment given, for the purchase of land when the construction of the house reaches plinth level, (d) An amount not exceeding 20% of the remaining amount after deducting from the sanctioned amount the instalment given for the purchase of land, when the roof of the ground floor has been laid, and (e) the balance payable when the roof of the first floor has been laid subject to the Head of the Department's satisfaction that the development of the area in which the house is built is complete in respect of amenities, such as, water supply, street lighting, roads, drainage and sewerage.

(4) In case of advance given for constructing a double storey new house or enlarging living accommodation in an existing living house the Disbursement of the instalments will be as follows: (a) 25% of the sanctioned advance is payable to the applicant on his mortgaging, in favour of the Government, the land purchased by him alongwith the house to be built thereon, (b) further amount not exceeding 30% of the sanctioned advance when the house reaches plinth level, (c) a further amount not exceeding 25% of the sanctioned advance when the roof of the ground floor has been laid, and (d) the remaining 20% of the sanctioned advance when the roof of the first floor has been laid subject to the Head of the Department's satisfaction in respect of the development of the area; and

(5) In case of an advance required for purchasing a ready-built house, the disbursement is as follows: (a) payment of entire amount in one lump sum on the applicant executing an agreement in the prescribed form for the repayment of the

loan and mortgaging the house to the Government within the 3 months of the drawal of the advance, failing which the advance with interest is to be refunded to the Government forthwith unless an extension of time limit is granted by the Head of the Department, (b) In respect of all Government servants who are not permanent Central Government servants and all Government servants who are to retire from Government service within a period of 18 months following the application for the grant of an advance and all applicants who are permanent Central Government servants the surety shall have to be furnished of an approved permanent Central Government servant in the prescribed form before the sanctioned advance or any part thereof is disbursed.

4.2 The advance carries a *simple rate of interest* from the date of the payment of advance-wherein the interest is calculated on the balance outstanding on the last day of each month. Further, the rate of interest is 4½% per annum on all advances sanctioned up to 15th October, 1963 and 5% per annum on all advances sanctioned from 16th October 1963 to 22nd June, 1965 and 5½% per annum on all advances sanctioned on or after 23rd June, 1965.

4.3 Conditions as regards Construction, Maintenance, etc.

4.3.1 The construction is required to be carried out exactly in accordance with the approved plan and specification on the basis of which the amount of the advance is computed and sanctioned. The plan and specification are not to be departed without seeking the prior sanction of the Ministry of Works and Housing. The Government servant is required to certify when applying for the instalment of the advance admissible at the plinth/roof level that construction is being carried out strictly in accordance with the plan and estimates furnished by him to the Government and that the construction has reached actually plinth/roof level and, that the amount already drawn has actually been used on the construction of house. Further the construction is required to be completed within 18 months of the date on which the instalment of the advance is paid to the Government servant. Failure to do so renders the Government servant liable to refund the entire amount advanced to him in one lump sum together with the interest. However, an extension of the time limit may be allowed up to one year by the Head of the Department and for a longer period by the Government in those cases where the work is delayed due to circumstances beyond the control of the Government servant.

4.3.2 The Government servant is also required to insure the house at his own cost with the Indian Insurance Companies Association Pool, Bombay for a sum not less than the amount of the advance and is required to keep it so insured against damage by fire, flood and lightning, till the advance is fully repaid to the Government and the policy is deposited with the Government. He is required to pay premia regularly and produce the receipt for payment for inspection to the appropriate authority.

4.3.3 The Government servant is required to maintain the house in good condition at his own cost. He is also required to keep the house free from all encumbrances and is required to pay all the municipal and other local rates and taxes regularly till the advance is repaid in full to the Government. He is required to furnish the annual certificate to this effect to the Head of the Department.

4.3.4 Following the completion of the house, annual inspection may be carried out by an authorised officer under instruction from the Head of the Department concerned to ensure that the house is maintained in good condition until the amount is paid in full and for that it is the duty of the Government servant to afford necessary facility for such inspection.

4.4 Repayment of Advance

4.4.1 The advance together with interest thereon is required to be paid in full by monthly instalments within a period not exceeding 20 years. Further the recovery of the advance is to be made first not more than 180 monthly instalments and thereafter interest is to be recovered in not more than 60 monthly instalments. All the same it is open to the Government servant to repay the amount in a shorter period if he so desires. In any case the entire advance together with interest is to be repaid before the date on which the Government servant retires from service to avoid any undue hardship to a Government servant who is to retire within 20 years of the date of application for grant of an advance and under the service rules applicable to him if he is eligible for the grant of a gratuity or death-cum-retirement gratuity. The Head of the Department may permit to repay the advance with interest conveniently in monthly instalments during the remaining period of service provided he agrees to incorporate a suitable clause in the prescribed agreement and mortgage deed to that effect.

4.4.2 The method of recovery is to deduct the instalments through the monthly pay or leave salary bills of the Government servant concerned. If the Government servant for any reason other than the normal retirement ceases to be a Government servant, the entire outstanding amount becomes payable to the Government forthwith. However, the Government may consider deserving cases for extending facilities of repayment. After the repayment is received by the Government in full of all the advance as well as the interest thereon the Government has to reconvey the mortgage property in favour of the Government servant concerned.

4.4.3 The State or provincial Government granting loans to their employees also prescribe more or less similar rules.

4.4.4 Yearly limited budgetary provisions are made in the budgets of the Central Government as well as of the State Governments for earmarking funds towards the advancing of loans for house building purposes to the Government employees.

Multi-Family Dwellings Versus Single Family Dwellings— Economics of Multi-Storeyed Development*

By
Shri C. R. Desai†

1. At no time in the recorded history of building construction in the country and as a matter of fact all over the world has the manner of building houses and family dwellings undergone changes as radical as those that have occurred during the past 100 years or so.

2. A family dwelling is a basic human need perhaps more important even than food & clothing, because the satisfaction that a proper dwelling provides to the human being has for deeper significance in the development of human personality than either food or clothing.

It is the place for the birth and the rearing of children. It is a family nest and must, therefore, ensure the satisfaction of certain basic conditions.

3. Prior to the ushering in of the industrial era people were working and living on land in rural surroundings. They had their family dwellings located on their farms, of sizes and construction according to their means. They were mostly ground floor structures and if the family was unusually large, in that case, one storeyed structures constituted single family dwellings.

There were very few conglomerations of large population called 'urban places' or 'towns' and even those were not very large indeed. Those urban places were either the storing and clearing houses of various kinds of commodities or were seats of Government. The houses in towns were also ground floor structures though they were located close together, adjacently situated with traffic lanes in between, to meet the needs for the movement of goods and people.

4. Industrialization took place, to begin with, in the existing urban places or towns and with the growth of industrialization large masses of population from rural areas migrated there for work, and more and more people required houses. They naturally desired to be as near as possible to the place of work and the market place. The available land area being limited, maximum use thereof could only be possible by building vertically and that is how builders resorted to multi-storeyed construction of houses. The paucity of land and the limitation imposed on Society by the means of transportation, therefore, made multi-storeyed construction of houses for accommodating many families in one building inevitable.

5. When land was in plenty people even in urban areas and towns used to build their houses in ground floor type of structures. These houses had large open spaces all around and were planned on

a liberal scale as cost of land was not of material consideration. The technique of multi-storeyed construction was also not so well known then. Thus, to begin with, the urban area developed horizontally with ground floor structures.

6. If we review the history and progress of building construction in important cities in this country, like Bombay, Ahmedabad, Delhi, Madras etc., it will be observed that an attempt was made for a long time to carry on horizontal development as far as it was possible to do. With the growth of population the local authorities thought of town planning and took up suitable areas near about the periphery of the town for development and prepared town planning schemes for certain selected areas. Even these town planning schemes envisaged horizontal development. The planned areas were divided into suitable plots ranging from 418 sq. m. (500 sq. Yds) to 4180 sq. m. (5000 sq. yds.). In certain town planning schemes, such as Ellis Bridge Town Planning Scheme at Ahmedabad, selected areas along the river bank were constituted into plots as big as half an acre or one acre, not permitting further sub-division of the plots. Even in Bombay the town planning schemes in the suburbs mostly envisaged horizontal development. In Delhi also the Government developed New Delhi in the same manner and large areas were developed horizontally with ground floor bungalows in individual plots. The town planning schemes laid down densities generally of 124 persons per hectare (50 persons per acre). This will show that planners thought only of the present requirements and had no idea of the rapid development that was to take place in those places a few decades hence. In India, as the world over, industrial towns got congested so badly that possibilities of horizontal development in most cases did not exist due to physical and geographical barriers. It also became uneconomical for the provision of essential services by the local authorities. Slums grew due to congestion which presented problems of health and social disorders. In the meantime industrial development continued unabated attracting more and more people from the rural areas to the towns.

7. In the case of London City they thought at the close of the last century of establishing garden cities outside London limits and two such garden cities were created. But these garden cities functioned only as night dormitories which did not ease the situation of industrial congestion in the city proper. Recently they thought in terms of removing the industries and population to new towns from the congested cities like London & Glasgow. The British Government set up Development Corporations for this purpose. Fifteen new towns have so far been established in U.K.

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But the trend of development even in these new towns is horizontal and not vertical. Most of the people who come to a new town want to live in a house with a garden and therefore although tall blocks of flats have occasionally been built to give point and emphasis to a particular neighbourhood design, the small house with a garden predominates in all towns. The popular distaste for living in flats has created a problem for architects and it has not been easy to avoid a sense of endless repetition when the demand is for little houses on a large scale.

8. In India which is a tropical country and where climatic conditions are more trying than in Europe or America, the habits cultivated by the people are such that living in flats or apartments in multistoreyed buildings is very irksome.

But the economic forces which have begun to operate in India since the advent of the British and the gradual industrialization of the country combined with the over-increasing population growth have resulted in growing urbanisation. Large masses of people migrate to and concentrate in towns in search of employment and for educational facilities which are only available in towns. Available housing accommodation being limited, more than one family began to live in a single dwelling; and with increasing pressure on the available accommodation, property owners who considered it profitable to invest in providing residential buildings commenced building vertically. This phenomenon grew in such proportions that in the original limits of cities like Calcutta and Bombay tall residential buildings were erected in large numbers and people who wanted to be near the place of work, the shopping centre and the school began to live therein. Even in places like Ahmedabad, Delhi and Madras multi-storeyed buildings are now a common feature.

The main factors, therefore, which necessitated construction of multi-storeyed dwellings are as follows :—

- (1) Growth of population in the existing urban area due to location of industries.
- (2) Growth of population in the urban area due to expansion of Governmental activities, as in Delhi.
- (3) Increasing growth of population resulting in congestion of available residential accommodation.
- (4) Impossibility of further expansion of the town limits on its peripheries due to natural barriers and limiting physical conditions.
- (5) Paucity of vacant space resulting in ever increasing land values to offset which tendencies grew to build as much vertically as possible.
- (6) The growing consciousness amongst the town people for better living conditions and demand for open space for recreational purposes and social services and amenities in the already congested town area, which made it inevitable for the local authorities to revise and adopt building regulations accordingly and facilitating vertical construction. In New York the residential buildings are so tall that they have as many as 102 storeys.

9. The Industrial revolution has made far reaching impacts on civilization throughout the world. While man by natural instinct wants to live and breathe in free atmosphere, untrammelled by restrictions, the modern civilization has tended to make him subject to all sorts of laws and regulations and he is forced to mould his living habits according to the demands of the social and economic order operating on him at every moment of his life. The concept of civilization has made him accept civic and State regulations in the conduct of his life. The State in its turn has been forced to think about the welfare of its citizens. The State has not only to enact laws for the orderly conduct of the society but has also to cater to the needs of the society. Whether it is a democratic State, a dictatorial State or a Kingly State, the ruling authority would be stable only so long as it reasonably caters to the needs of the society. Under the circumstances provision of residential accommodation for those who cannot afford to build their houses and are also unable to pay the rents for accommodation put up by private investors, is being accepted as a State responsibility all over the world. The Governments of Western Countries and the U.S.A. have invested and are investing large amounts of money in providing residential accommodation to the needy. Even the U.S.S.R. has now undertaken a large programme of house building. Their building activities are for the most part confined to urban centres and as the effort has to be on a mass scale with the provision of essential amenities like water supply, drainage, electricity & roads, the construction is in multi-storeyed buildings wherein numerous families live. Horizontal construction, therefore, is neither practicable, physically nor economically.

10. In our country too the State is now required to build houses for industrial workers and others belonging to low income group.

How far multi-storeyed family dwellings are economical in absolute terms *vis-a-vis* single family dwellings is a matter of great complexity. From what has been stated in the foregoing it will be seen that far from purely economic considerations, quite different considerations have compelled the private investors and the State authorities in resorting to vertical construction. Since we are concerned with multi-family dwellings versus single-family dwellings, an attempt to examine relative economies will be made. The first impression to a layman is always that it is more economical to construct storeyed buildings on a given piece of land than ground floor structures for providing the same type of accommodation because many more units can be provided in the former. This impression is not wrong considering pure economics where land is costly and scarce. If, however, there is no scarcity of land and land values are not high the impression would prove to be misleading or fallacious. The fact is that with land values within reasonable limits ground floor construction of one unit for the same accommodation is cheaper than in storeyed construction. The Works, Housing & Supply Ministry has fixed therefore ceiling cost of tenements for industrial workers under Subsidised Industrial Housing Scheme and for slum dwellers under the Slum Clearance Scheme accordingly. For ground floor structures the ceiling cost of a tenement in Bombay & Calcutta for Industrial Workers is fixed at Rs. 5100 including cost of land & services and at Rs. 6400 for a tenement in multi-storey-

ed structures. The ruling densities have been fixed for both type of developments; and taking into account all costs involved and providing for the ruling densities, ground floor construction works out cheaper than storeyed construction because the extra cost involved in providing staircases, common corridors, stronger foundations, etc. in multi-storeyed construction is not offset by the economy in land cost and the cost of services.

11. In Bombay the comparative costs have been studied and it has been observed that with normal foundation conditions ground floor construction presently becomes cheaper than storeyed construction so long as land value with the filling involved, if any, is not higher than about Rs. 14.35 per sq. m. (Rs. 12 per sq. yd.). Normally, the cost of land and its filling should not exceed 20 per cent of the total cost of construction including cost of land, and if the cost of land is to be so restricted the limiting value of land for ground floor construction would work out as under:—

Taking a concrete example of certain construction in Bombay where the total cost of construction works out to about Rs. 215.28 per sq. m. (Rs. 20 per sq. ft.) of plinth area of the unit accommodation, the cost of land works out to Rs. 14.35 per sq. m. keeping it within 20 per cent of cost of construction as can be seen from the following empirical formula.

A = Area of plot in sq. m.

P = Area of plinth allowed which is 1/3 of the land area, i.e. A/3 sq. m.

C. A. = Cost of land per sq. m.

C. P. = Cost of construction per sq. m. of plinth area which is Rs. 215.28 per sq. m.

X = Percentage of cost of land against the total cost of structure which is 20 per cent.

Cost of plot = A × C.A.

Cost of Structure = A/3 × C.P.

$$\text{Now } A \times C.A. = \frac{X}{100} \times \frac{A}{3} \times C.P.$$

$$C. A. = \frac{1}{300} X \times C.P.$$

$$C. A. = \frac{1}{300} \times 20 \times 215.28$$

$$215.28 = \text{Rs. } 14.35 \text{ per sq.m.}$$

The above illustration is for construction of structures providing minimum living accommodation with independent sanitary conveniences in a dwelling unit as per Municipal building regulations in Greater Bombay.

We should however consider the matter in its general aspect for all types of accommodation. The question has been posed because in urban areas land is becoming scarce and pressure on land is increasing because of growth in population and industrial expansion and land values are therefore increasing sharply. Viewing the matter in that light it would be apparent that available land should be put to maximum use consistent with healthy living conditions which can be done only by resorting to vertical construction, providing thereon multi-family dwellings which would ultimately

make for economy. Conversely it would be quite uneconomical in every respect to resort to single-family dwellings in ground floor structures in areas which are developing industrially, commercially and as cultural centres.

12. When we consider economics of construction we should take into consideration its implications to the local authority of the area which has to provide essential civic services and amenities to the community, the burden of cost whereof has ultimately to be borne by the common tax payer. We should also take into consideration the day to day cost the common man will be called upon to bear in meeting the cost of transport from resident to work place, the cost involved in sending children to far off schools or colleges and in obtaining medical facilities.

13. If the development of an area is of horizontal type it would result in sprawling and the kind of featureless suburban development that has taken place till now in and round about almost all the big cities in this country. Such kind of development brings about deterioration in all civic facilities and services and at a certain stage their provision and even satisfactory maintenance become a difficult proposition. On purely economic consideration development with vertical construction, as is taking place in the cities of U.S.A. and Europe, may be desirable but in this country that cannot be the only consideration. For affluent communities the capacity of the local authority to provide civic services may be the only limiting factor for the vertical construction but for the common man who represents more than 90 per cent of the population in urban areas, consideration of health must weigh in determining the height of construction. The common man cannot afford the operating cost of lifts and has therefore to climb stairs. Ordinarily, therefore, storeyed construction in this poor country should not comprise of more than ground and 3 upper storeys which would not be very difficult to climb or would impair the health of normal human beings.

14. It has been stated in the foregoing that the necessity to resort to multi-family dwellings has arisen in congested towns which are industrially developed and where population is growing. While the growth has taken place the authorities have remained inactive with the result that the town has developed in an unplanned, haphazard and sprawling manner, creating difficult conditions for living and for flow of traffic and causing slums throughout the town area.

15. Our cities and towns present the above picture. What is, therefore, necessary is that all authorities should be quite alive to the problem and take effective steps to halt and tackle the evil vigorously and to regulate the future growth according to a plan. The authorities should get Master Plan prepared for the towns. The planners should take into account the possibilities of expansion of the town limits and determine land use by zoning regulations. For residential zones maximum permissible densities should be fixed and also the maximum height to which buildings may be constructed. Provision for open spaces for recreational facilities and social amenities should be made in the plan. Such plans have been prepared for Bombay & Delhi. If future development of the cities and towns is strictly regulated

and controlled according to the provisions of the Master Plan, the towns will in course of time be amenable to orderly growth, fit for healthy living.

In the case of London City a Development Plan was prepared in 1951 for the Administrative County of London wherein one of the main objectives laid down was to achieve plot densities [decreasing from the centre outwards, generally averaging 496,248 and 173 (200, 100 and 70 persons per acre)]:

16. In any case with the increasing urbanization that is taking place in this country, it becomes imperative to make the most economical use of

land in the urban areas so that the population residing therein may have in their neighbourhood at least just enough open space for recreational facilities and for provision of social services and amenities for healthy and purposeful living. This is possible if available land is built upon vertically consistent with the ruling density in the area. Multi-family dwellings are hence obviously more economical than single-family dwellings. It is, however, not possible to work out concretely the economics effected in multi-family dwellings as the extent of such economy is governed by various factors mainly (i) the cost of developed land, (ii) cost of external essential civic services, (iii) cost of construction including internal services, and (iv) cost of common amenities, which operate differently in different situations.

Place of Housing in Social and Economic Plans**

By

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1. HOUSING SHORTAGE A UNIVERSAL PHENOMENON

1.1 By and large the place of housing in social and economic plans depends on :

- (i) the nature and intensity of the housing problem in a particular country,
- (ii) basic premises of social and economic policies pursued, and
- (iii) availability of resources.

1.2 The problem of housing—which came into the forefront after the Second World War—though varying in extent and nature from country to country, has one characteristic feature universal in its incidence, viz., serious shortage. While the housing shortage in a physical sense is to be met with in all the countries in a greater or lesser degree, in economically advanced countries (particularly in Europe and America) as a result of increase in per capita income and changes in the social values there has emerged a 'qualitative shortage'. Generally speaking, acuteness of the housing problem is correlated with the stage of economic development of a country. Under-developed countries with comparatively very low per capita incomes along with other socio-economic problems have to contend with a housing problem much larger in magnitude and more acute in nature than is generally the lot of economically advanced countries.

1.2.1 *Housing in Socialist Economies*—In view of the great differences in economic systems and policies, the approach to housing differs in planned and non-planned economies. In planned socialist economies, for example, the State has taken upon itself the responsibility of providing housing facilities at nominal rates consistent with the needs of development in other sectors.

In Russia where housing forms about 4 to 5% of the total wages of an average family (as against 20 to 30% in capitalist countries), the State aims at providing free accommodation to improve the standard of living of the masses. Thus, so far as low-cost housing construction is concerned, all apartments in U.S.S.R. may be said to be low-cost and the problem of building 'low-cost housing' as such is non-existent. According to the decisions of the Twenty Second Congress of the Communist Party, "an end will be put to the housing shortage in the country by 1970". The aforesaid goal is proposed to be achieved by stepping up the rate of construction, which stood at 13.6 per 1,000 inhabitants in 1960. Under the Seven-Year Plan of U.S.S.R. 1959-65 it is envisaged to put up 15 million apartments, excluding 7 million rural houses. As regards the total value of funds invested in the

construction of housing, cultural services and communal facilities by the State Cooperative Organisations, collective firms and the public it accounted for 35.4% of all capital investments in the economy since the Soviet rule began.

In Yugoslavia, the total output of housing rose from about 30,000 units in 1955 to over 80,000 in 1961. It is expected that by the realisation of the current Five Year Plan 1961-65 (which provides for a home building programme 80% above the output achieved in 1959-60) and the progress in the next decade they will eliminate the housing shortage. The main element in housing investment is municipal funds for house construction which are obtained from a special 4% levy on all wages and salaries. Municipal funds provide about 1/2 of the investment in housing. As such, municipalities and numerous self-managed bodies (economic enterprises, social institutions) play a very important role in housing and urban development programme. In the first post-war decade only 10% of total investment was devoted to housing and urban development. In the later years, however, more capital has been utilized for social development so that housing and urban facilities now account for 16% of total investments.

1.2.2 *Housing in Capitalist Economies*—In non-planned economies, particularly those which are economically advanced, the importance of housing in their socio-economic structure has been steadily increasing. To begin with, there were sporadic measures, including legislation to improve the housing conditions in sectors where the problem became particularly acute, e.g., housing for industrial workers. These were followed by the evolution of definite policies and active assistance by the State to meet the situation as it assumed staggering proportions after Second World War. State participation in this field was extended beyond the limited objective of providing credit to improvement in research facilities and initiation of public housing. Growth of the idea of a Welfare State gave further impetus to the development of institutions like public housing. In fact public housing bears testimony to the increasing importance of the provision of adequate accommodation as an item in the socio-economic advancement of a country.

Moreover, as a part of social security measures underway in these countries special housing programmes have been started to take care of the economically depressed classes, e.g., housing for the aged, low income groups, slum dwellers, etc.

In U.S.A. "a decent home and a suitable living environment for every American family" is one of the nation's goals expressed in its housing legislation. Housing stock of the country in 1961 totalled 58.3 million units for an estimated 52.6 million families, and about 62% of American families owned their own homes as against 55% in 1950. Further, home building has become a

leading American industry ranking second only to food in dollar volume of production annually. Total residential (non-farm) construction in 1959 represented 6.8% of the gross national product and was 34% of the gross private product in that year. There is no overall quantitative shortage although there are still local shortages and some housing stringency for low income families. Federal aid is focussed mainly on assisting low and moderate income groups to own or rent homes.

In Japan, during 1960 housing shortage stood at 3 million units. Investment in housing in that year was \$ 1300 million of which Government investment accounted for \$300 million and private investment \$1000 million. Government proposes to construct 10 million units in the next ten years. In the first five years the emphasis will be placed on ensuring one dwelling for each household and on radical improvement of poor dwelling conditions. The required funds for carrying out the 5-year programme are :

Govt. housing	\$5000 million
Private financed housing	\$6700 million
Total	\$11,700 millio

As for Government aided housing, the ratio of rent to family income is 10% to 15% and for public operated housing about 18%.

2. HOUSING IN UNDER-DEVELOPED COUNTRIES

Relatively a lower state of economic development and a peculiar set of socio-economic forces characterising these economies impart to housing a significance of its own. The relevant facts are :—

Beset with almost poorest conditions of housing and the immense magnitude of the problem on the one hand and the lowest per capita incomes and scant resources on the other, under-developed countries face an intractable situation of reconciling what is socially desirable with what is feasible in practice. Shortage of resources with competing demands from a number of sectors act as the greatest limitation on the status of housing in the scale of socio-economic priorities.

Passing as these countries are through a stage of transition with vast potentialities of urbanisation and vast social changes still lying in a dormant state the future portends heavier odds in the sphere of housing. Despite these limitations, housing in all such countries has come to occupy a place of its own in the socio-economic programmes of development as is borne out by the following table :

Country	Period	Unit	Investment in Housing (public sector)	Total Public Investment
India	1951-52 1955-56 (actual outlays)	Rs. Crores	33.5	1960.0
	1956-57 1960-61 (estimated outlays)	„	39.8	4600.0
	1961-62 1965-66 (estimated cost of programmes)	„	142.0	8098.5
Pakistan	1955-60 1961-65	Million rupees	861 895	9352 9750
	1955-60 (Approx. actual)	Million of dollars	65.2	971.7
Malaya	1961-65 (Target)	„	80.0	2090.0
	1959-68	Rs. Million	2,725	13,600
Israel	1960-61 (Actual)	Million of Israel Pounds	78.9	394.0
	1961-62 (Budget)	„	157.6	511.0
	1962-63 (Budget)	„	193.5	522.5

India represents a typical case of the countries engaged in a struggle for socio-economic advancement through planned economy. Till recently housing was mainly a monopoly of the private sector. With the inception of planned development of the economy, however, appropriate objectives and goals have been laid down to meet the housing situation both through private and public agencies.

3. THE PLACE OF HOUSING IN THE NATIONAL ECONOMY

India is faced with an acute housing shortage, particularly in her cities and towns. The consumers need houses badly, but the builders who are producers of the much-needed houses find more attractive avenues for their capital in commerce, trade and industry. Such is the colossal poverty of the people that in urban areas only about 15 to 20% of the residents are in a position to pay the economic rent of a standard one-room tenement. The majority of the cityfolk are driven to seek sub-standard accommodation at low rents. There is severe congestion in the built-in areas of our cities creating social evils, insanitation, illiteracy, traffic hazards and so forth. A low-cost dwelling unit entails an expenditure of as much as five or six times the average annual income of an adult worker, assuming his wage to be about Rs. 650 per annum. The saving element in his wage does not justify his launching on house construction, though it be of modest dimensions.

The National Sample Survey (Twelfth Round, 1957) has shown that nearly one-fourth of the urban population lived in "katcha" houses. In urban India nearly 76% of the families lived in two rooms or less. In the big cities about 90% of the population had to be content with scanty accommodation. In Delhi, Bombay, Calcutta and Madras, 67 families out of 100 lived in one-room households. During 1951-61, the estimate for additional urban dwellings was put at 2.5 million, leaving aside those that have outlived their usefulness.

The housing pattern of India is anything but satisfactory. The National Sample Survey (Twelfth Round 1957) showed that about 44 per cent of rural households and 76 per cent of the households in big cities and 54 per cent of the households in towns lived in one room. In Bombay, Calcutta, Delhi and Madras, about 21 per cent of the households had to accommodate four or more persons per room. In both rural and urban areas, about half of the households occupied floor space between 101 and 300 square feet.

According to the 1951 census, there were 6,43,61,676 occupied houses in the country—5,40,56,388 in rural areas and 1,03,05,288 in urban areas. During the decade 1951-61 housing demand in urban areas called for the construction of about 80 lakh dwelling units both to make up for arrears and for obsolescence and to provide for an increase in urban population. The deficit under all heads at the end of 1961 has been estimated at about 55 lakhs in urban areas.

The housing problem in India has been growing like a snowball owing to the fast increase in population since 1921, the heavy shift of population from the rural to urban areas, the haphazard

growth of towns for lack of State and Municipal control over building activity and the inability of private enterprise to keep pace with the staggering demand. The problem calls for concerted action on the part of individuals, co-operatives, State and Union Governments to plan and execute a housing programme on an immense scale. There is not only acute shortage but also much of the available accommodation is of sub-standard variety.

1952 constitutes an important date in our housing history. In that year a separate portfolio for Housing was created in the Union Government. Thereafter organised efforts were started at a government level to step up housing activities and to provide financial assistance for the construction of houses to individuals, cooperatives, local bodies, industrial employees and plantation workers. Annual conferences of State Ministers and occasional seminars and exhibitions have helped to create a keen sense of awareness of the housing problems and their consequences. The State Governments have also started Housing Departments and Housing Boards for promoting building activities. To ensure a rational approach to the multi-phased problem of housing and particularly to achieve reduction in building costs through the development of techniques, materials and designs, the National Buildings Organisation was set up in 1954. The Organisation also promotes research in the utilisation of local building materials for village houses.

Our investment on housing is as yet not impressive considering the magnitude of the problem. The investment in private and public sectors during the Second Plan period has been of the order of Rs. 1000 crores and Rs. 250 crores, respectively. The corresponding figures for the Third Plan are Rs. 1,125 crores and Rs. 400 crores. These sums do not go far in meeting the problem created partly by the additional demands from increasing population and partly by the huge backlogs. We need about 10 million urban dwellings of the modern type, and the cost would be about five to six thousand crores which works out to an outlay three to four times what has been proposed in the Third Plan.

4. PROGRESS UNDER THE FIVE YEAR PLANS

The First Five Year Plan was concerned chiefly with the evolution of a national housing programme. Even so two urban Housing Schemes involving an expenditure of Rs. 38.5 crores were launched for the construction of 1,20,000 dwelling units. There were also housing programmes for specific groups, such as Government servants and displaced persons. In all, the public authorities provided about 7,00,000 houses or tenements during the First Plan period.

During the Second Five Year Plan, six more schemes were launched. Funds for these from Government sources amounted to Rs. 84 crores and from the Life Insurance Corporation to Rs. 17.2 crores. The State Governments and local bodies were also active in the field though as yet to a moderate extent. The total outlay on public housing was of the order of Rs. 250 crores and 5,00,000 houses were constructed. Public authorities also paid some attention to improving housing

conditions in rural areas. In the private sector, an investment of the order of about Rs. 1,000 crores has gone into the construction of dwellings.

The Third Five Year Plan has provided a sum of Rs. 142 crores for town planning, urban development and the public housing schemes of the Union and State Governments. The Life Insurance Corporation is expected to make a contribution of Rs. 60 crores. There are housing programmes for industrial workers, slum dwellers and low-income groups on a fairly considerable scale.

A brief account is given below of the progress made under the public housing schemes :

(1) Subsidized Industrial Housing Scheme

This scheme came into operation in 1952. It provides for the grant of long-term interest-bearing loans to approved agencies, such as Housing Boards, Industrial Employers and Cooperative Societies of Industrial workers. The assistance is for the construction of houses for workers. Funds sanctioned under the scheme till the end of the year 1962 amounts to Rs. 52.76 crores and the number of houses approved is, 1,55,521.

(2) Low Income Group Housing Scheme

Under the scheme which came into operation in 1954, long-term interest-bearing loans are given to State Governments for the purpose of housing persons having an annual income not exceeding Rs. 6,000. The total loan admissible is 80% of the cost subject to a maximum of Rs. 8,000 per house. There is also provision for acquisition and development of land and for the subsequent sale of the developed land on a no-profit-no-loss basis. Up to the end of 1962, 1,06,000 houses were sanctioned and 75,000 houses were completed. There is a provision in the scheme to enable public authorities to let out houses to economically weaker sections of the community on subsidised rents. There is also a Plantation Labour Housing Scheme which enables planters to fulfil their obligations to provide housing accommodation for all resident workers under the Plantation Labour Act, 1951.

(3) Middle Income Group Housing Scheme

This scheme envisages grant of house-building loans to individuals or cooperative societies of persons whose income ranges between Rs. 6,001 and Rs. 15,000 per annum. The total loan admissible is 80% of the cost subject to a maximum of Rs. 20,000 per annum. By the end of January 1963 loan assistance was sanctioned to the extent of Rs. 16.33 crores for the construction of 9,940 houses. A similar scheme is the one for Rental Housing for State Government Employees under which 8,895 houses have been constructed till the end of January, 1963.

(4) Slum Clearance Scheme

The scheme came into operation in 1956. Under the scheme, financial assistance for slum clearance is given to the State Governments. Intensive work for the rehousing of families residing in slums is carried on in the five biggest cities where the problem has to be tackled without delay. Two hundred and twenty-nine slum clearance projects

for construction of 60,714 housing units at an estimated cost of Rs. 18.62 crores were sanctioned till the end of 1962.

(5) Land Acquisition and Development Scheme

This Scheme introduced in October 1959 enables State Governments through loans to acquire and develop land on a large scale and make the plots available at reasonable prices to intending house-holders. The scheme is also intended to stabilise land prices and rationalise urban development. The Third Five Year Plan envisages an overall provision of Rs. 26 crores for the scheme. The State Governments are expected to constitute a "Revolving Fund" out of the loan assistance released from time to time. Till the end of January, 1963 commitments to the extent of Rs. 10.59 crores were entered into and 1,966 acres were acquired.

(6) Village Housing Projects Scheme

The Scheme was introduced in 1957. It is concerned with the establishment of housing projects in about 5000 villages. Loans to the extent of two-thirds of the construction cost or Rs. 2,000 whichever is less, are given. Rural Housing Cells have been established in all the States. Loans amounting to Rs. 4.65 lakhs were sanctioned for the construction of 37,330 houses.

(7) General Principles of Housing Economics in Social Planning

The problem of catching up with the backlog of housing and with the growth of population presents serious difficulties. Between 1951 and 1961 there was an increase in population of nearly 40% in towns having a population of 20,000 and more. The shortage of houses was reckoned at 2.5 million in 1951 and 5.5 million 1961.

In the set-up of socio-economic planning there are three general considerations which apply to housing programmes. Firstly, housing policies need to be set in the larger context of economic development and industrialisation. For example, plans and proposals relating to location and disposal of industries cannot be considered apart from the workers and their welfare. Secondly, it is necessary to coordinate the efforts of all agencies concerned whether public or private. The preparation of master plans is a means to bring together the different agencies in order to attain well-defined common objectives pursued systematically over a long period. Thirdly the entire programme of house construction should be so oriented as to serve the interests of that very large body of low-income groups who are always on the verge of becoming slum-dwellers.

Urbanisation is an important aspect of the process of economic and social development. It gives rise to a host of problems, such as migration from village to town, levels of living in urban and urban areas, relative costs of providing economic and social services in towns and cities of varying size, provision of facilities like water supply, sanitation, transport and power, pattern of economic development, location and dispersal of industries, civic administration, fiscal policies and the planning of land use.

These aspects are of special importance in the urban areas of India which are developing rapidly. The number of cities with a population of 1,00,000 or more has increased from 75 in 1951 to 115 in 1961 and their population now forms about 43 per cent of the total urban population.

The main ingredients of development policy may be thus outlined :

- (i) As far as possible new industries should be established away from crowded and congested cities.
- (ii) In the planning of large industries the concept of a region should be adopted, and in each case planning should extend beyond the immediate environs to a much larger area for whose development the new industry would serve as a centre of attraction.
- (iii) In community development projects the rural and urban components of growth should be knit into a coherent pattern, thus strengthening the economic interdependence between towns and the surrounding areas.
- (iv) Within each rural area the effort should be to secure a diversified occupational pattern in place of present extreme dependence on agriculture.
- (v) There should be control of urban land values through public acquisition of land and appropriate fiscal policies, such as the setting of a ceiling on the size of individual plots, taxation of vacant plots, betterment levies, allotment of land on a lease-hold basis, freezing of land values with a view to early acquiring of land by public authorities.

From the socio-economic surveys conducted by the Research Programme Committee it is seen that about 78% of the urban households fall within an expenditure level of Rs. 100 per month. Assuming that 10% of the income can be set apart for rent, it transpires that nearly 80% of the families in urban areas will not be able to hire out a suitable dwelling unit. The rent paying capacity is low and the investment opportunities in housing fetching a good return are also low. Private enterprise is not drawn into this field. The brunt of the

housing therefore falls on the public sector. Housing in any socio-economic planning should be given a high priority, for proper living conditions add to physical efficiency and economic growth.

It is not merely a question of housing for the inadequately housed. Housing must be conceived as an item in a city or town development plan which determines the uses to which different parcels of land are to be put and the location and layout of community facilities, such as markets, shops, hospitals, roads and parks.

Resources for housing can be drawn to a large extent from land development itself. Land has scarcity value and over a period of time urban land values appreciate quickly. Land should be held under public ownership so that the community benefits from the surpluses in the form of capital receipts from lands disposed of, from ground rents, from unearned increments in site values and so on. These surpluses can be used for housing in a self-financing scheme.

A considerable volume of research in the field of housing and building construction has been undertaken at the Central Building Research Institute and elsewhere. Investigations have been carried out in materials for waterproof renderings for mud walls, utilisation of low-grade gypsum for light weight partitions, masonry mortars, hollow bricks, utilisation of waste products like blast furnace slag and the influence of climatic factors on the design of houses. Research in these subjects is essential for reducing building costs and for improving the techniques of building instruction. These research-cum-training centres established for rural housing have far-reaching interest. New designs for rural dwellings are being evolved.

With the growth of population in towns, cities and villages and with the progress of the economy, problems of housing along with urban and regional development will come to occupy an increasingly critical place in the successive Five Year Plans. The right solutions to these problems are of great consequence for social stability, general welfare and industrial peace. Over the years a considerable body of knowledge has been built up by the United Nations and the ECAFE in housing matters and this is available for shaping the socio-economic programmes of the member countries.

Cooperative Housing*

By

Bertil Mathsson†

This paper will be divided into three broad parts. The first part is an introduction to the history of cooperative housing and its progress in different parts of the world. The second part presents the organization of cooperative housing in Sweden. Finally, the third part is devoted to a discussion of the model rules for Cooperative Housing Societies which have been drawn up by the Auxiliary Committee on Cooperative Housing of the International Cooperative Alliance.

1. INTRODUCTION

Cooperative housing experiments have been conducted in many parts of the world, but it is undisputable that they have achieved their most substantial progress in Europe. Even there, however, the relative importance of cooperative housing varies greatly from country to country. Thus the success which cooperative housing has enjoyed in the Scandinavian countries has no parallel in some of Southern European countries.

A number of factors have been responsible for the emergence of cooperative housing as well as for its relative successes or failures. It is important to study some of these factors if one wishes to gain an understanding of the role which cooperative housing could play as a means for providing suitable dwellings in a world of increasing populations.

Like so many other great popular movements cooperative housing derives its origin from the conditions created by the emergence of industrial civilization. The industrial revolution occurred at different times in different parts of Europe, but everywhere one of its effects was a hitherto unknown problem of how to provide housing for millions of people in growing industrial towns and cities. For a long time society did little or nothing to attack the abnormal social problems created by the industrial revolution. In addition, individuals were by and large unable to see the urgent need for some form of collective action to solve their problems. On a modest scale employers provided housing for the labour they employed, but, on the whole, such efforts were quite insufficient, quantitatively as well as qualitatively.

The first organized attempt to find a cooperative solution to the housing problem came at the end of the 18th century in Great Britain. The building societies which were then started, were, however, conceived with very modest aims. The early British building societies introduced a scheme which was based on members' savings, the idea being that these savings would finance the house building of the members. In actual practice, how-

ever, the building activities of these societies ceased after some decades, and their impact was minor.

One of the progressive political and social ideas born as a result of the industrial revolution was that housing was to be looked upon as a social problem. For a long time, however, the often abominable housing conditions were mainly the concern of various philanthropic associations and it was not until the middle of the 19th century that a purposeful search for a workable cooperative approach emerged on the continent.

During the last decades of the 19th century cooperative housing societies were started on a fairly widespread basis, mainly in Prussia and in Denmark. These early attempts however, suffered from very serious defects. They were generally founded for the execution of specific housing projects. Once these projects were completed, the societies had nothing more to do. They had no plan for continued activity and no ways of financing such activity.⁽¹⁾ Many of them were financially weak and went bankrupt, whereas others soon were converted into other forms of enterprise, such as limited liability companies.

Nevertheless, the lessons learnt by the failures of the early housing societies were important in the sense that they gave rise to new ideas aiming at organising of housing cooperatives as continuing building organisations.

By the turn of the century, housing cooperatives could be found in practically all Western and Central European countries but they accounted for only a very small proportion of the total amount of new construction. Nevertheless, in many cases, they acted as pioneers in improving housing standards, thus offering a challenge to the private speculators who dominated the housing market.

In the period up to the first world war cooperative housing organisations catered mainly to members from middle income groups, such as craftsmen, lower grade civil servants and skilled labour. Recruitment was only gradually broadened to include also lower income groups.

The first world war meant almost complete stagnation to house building in Europe. At the same time migration from the country side into the urban areas increased at a very rapid rate, and the housing problem became acute. The situation was of course very seriously aggravated by the devastation caused by the war in many European countries, and since the overwhelming proportion of housing was in the hands of private speculators, rents soared sky high.

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(1) This problem is dealt with in Part II.

Inevitably, a demand for freezing of rents became one of the important points in the programmes of organized labour in almost all of the countries which had participated in the war. Rent controls were also introduced in most of these countries. But of course, the controls did not solve the problem of housing shortage; they could merely help to hide it.

The conditions described above set the stage for the emergence of a strong housing cooperative movement after the war. Cooperative housing began to gain support from many quarters and their credit facilities were improved. New forms of organizations were also found which would enable the societies to engage in continuous activity thus avoiding the mistakes made by the earlier housing societies of last century.⁽²⁾ In several countries, closer collaboration between cooperative housing organisations and municipal and state governments became established. The crying need for increased production of housing also led to the emergence of non-profit municipal housing directed mainly towards the lowest income groups in society.

The advance of cooperative housing during the 20s was impressive. As consumer organizations the housing cooperatives were naturally actively interested in the quality of the houses they built. They became pioneers in the improvement of housing standards. They introduced new concepts of town planning. They took the lead in the development of collective facilities, such as laundries. The new cooperative housing projects in urban areas were in many cases reflection of the most advanced thinking on the problems of urban housing.

When the depression of the 30s came, new problems and difficulties were created for the housing cooperative movements in many of the European countries. The production of new housing declined and many housing cooperative organizations found difficulties in recruiting new membership who could supply additional finances. In the countries which yielded to dictatorships, the development of independent cooperative activities was halted. In some such countries, all forms of cooperative organisations were completely suppressed and their properties confiscated. In some of the democratic countries, on the other hand, cooperative housing became one of the instruments for ameliorating the serious unemployment situation.

On the whole, the decades between the two world wars was the period of consolidation for the cooperative housing organisations in the countries, where they were not suppressed by dictatorships. Cooperative housing performed the role of a pioneer introducing new ideas and trends in housing.

World war II left millions homeless all over the world. When the war ended, governments and municipal authorities in Europe had to introduce extensive housing programmes. As was the case during the first world war, building activities had practically ceased. The crying demand for housing was difficult to meet. Shortages in building materials and raw material were great, and extensive and

severe rationing systems had to be applied for many years following the war. In this difficult reconstruction programme, those European housing cooperative movements which had been left intact succeeded in playing an impressive role, both as regards the actual number of housing units built as well as the increase of their share of the total production of housing.

The increase which the cooperative housing has undergone is accounted for not only by a wider acceptance of the movement by Governments and local authorities but also by a distinct improvement of financing methods. This in turn has been possible, not least because of the record which housing cooperatives in many countries have built up for themselves as efficient providers of housing. Evidence of this recognition of the housing cooperative movement is perhaps also to be found in the new interest shown in developing countries which are now faced with the need to solve acute housing shortages.

Cooperative housing is still more developed in Western Europe than in any other part of the world. It has, however, also become increasingly important in a number of other countries, e.g. the United States. The experience of the successful cooperative housing movement, is that wherever housing conditions are poor, cooperation among housing consumers provides the means to a rapid improvement of the situation. This, it should be noted, follows not only from the production, the housing cooperative societies themselves may be able to undertake, but also from the impact of such production upon the practices of other forms of enterprises.

2. AN ORGANIZATIONAL MODEL

As pointed out in the introduction, one of the most troublesome organisational problems to overcome in Cooperative housing has been to ensure that the societies started can function as continuous building organizations. If not, they tend to become stagnant or dormant bodies after the initial housing construction has been completed.

Many different models of organization exist in the various successful cooperative housing movements. Needless to say, the particular solutions adopted are to quite some extent an outgrowth of special conditions in the different countries at the time when cooperative housing started to gain momentum.

It should be pointed out, therefore, that the following description of the organization adopted by the very successful cooperative housing movement in Sweden is to be looked upon merely as one possible way of solving the organisational problems of cooperative housing. Nevertheless, the Swedish model, having been evolved over a long period of time, does offer many worthwhile suggestions as to how to cope with some of the difficulties, which cooperative housing movements anywhere are likely to encounter.

Although cooperative housing had its start through scattered efforts already at the beginning of this century, the emergence of a concerted

(2) One such organizational model is presented in Part II.

housing movement in Sweden did not come until 1923. During the war, associations of tenants had been formed in a number of Swedish towns and cities as an attempt to provide an instrument for bargaining with private landlords. In 1923, the tenants' associations joined together in a National Tenants' Association which was to represent the interests of its members by way of negotiation with house-owners. The Association, however, also contemplated the possibilities of entering house-building and house administration on its own. A start in this direction came when the Tenants' Association in Stockholm took the initiative of establishing the Tenants' Savings and Building Society in the capital. The idea behind this organisation was to set up a "parent society" which could take the lead in developing cooperative housing. The parent society was to be responsible for the recruitment of members, for the promotion of savings, and for building on a continuing basis. Once completed, the houses were to be owned by adjunct housing co-operatives whose members would be the occupants of the units built. The Stockholm initiative had followers in several other towns, and in 1924 the local societies joined in a federation of tenants' savings and buildings societies, which soon came to be known by its initials: HSB.

The national HSB federation was charged with the responsibility of providing technical and economic assistance to its local member societies. The federation was also to administer savings and financial resources, and to formulate general building policy leading to concrete building plans and projects.

There are thus three separate organizational bodies involved in the HSB cooperative housing movement. The three bodies are:—

- (1) The National Federation of HSB societies;
- (2) the local HSB societies (the "parent societies"), and
- (3) the housing cooperatives, *i.e.* the societies composed of members occupying HSB housing units.

The HSB Society: A description of the organizational model might for purposes of clarity start with the HSB society, the "parent society". A local HSB society is a cooperative society in the ordinary sense of the word, and it is with this society that individual new members first come into contact. Membership is acquired by payment of at least one share, the value of which is 50 Sw. Krs. In addition the member is required to pay an entrance fee of 10 Sw. Krs. to cover administrative costs. A further condition of membership is that the applicant belongs to the Local Tenants' Association. Membership in the local HSB society is of course open to anyone.

The aim of the local HSB society is to promote the economic interest of its members by: (1) the collection of savings; (2) the raising of loans to be used for acquisition of housing and sites; (3) assistance in the administration of housing cooperatives and (4) promotion of increased cooperative housing production.

The savings aspect is essential in the work of the local HSB society. The initial capital which

is needed to undertake the housing project is always derived from the members themselves. The amount of savings required from a member depends upon how much money the society will need to provide him with a housing unit. The HSB society ascertains from the members what kind of accommodation he requires and informs him of amount of capital which will be needed. The society also tells him how soon he can expect to be accommodated and, in approximate terms, how much he will have to pay as annual rent. To facilitate for members to save the necessary amount, the local HSB society offers to draw up individual savings plans based on each member's income and a reasonable appraisal of his capacity to save.

In their building activities, the HSB societies utilize the services of private building contractors and do not engage in actual construction work on their own. The planning of building activities is to be done in accordance with the needs of the members.

There is now a local HSB society in every town and practically all other larger urban communities. In 1959 there were 190 such societies with a total membership of about 150,000. The societies vary considerably in size, but a great many of them have their own premises with a full time manager and office staff.

The Housing Cooperatives: The local housing cooperatives are primarily concerned with administration of the completed housing estates. They are to be considered as adjuncts of the local HSB societies and are founded for the purpose of administering the projected housing estates of the HSB societies. The housing cooperative is, however, legally founded before the completion of a housing estate. At this initial stage, the membership of a housing cooperative consists of members of the board of the local HSB society. When an estate is completed and occupied, the residents, who are of course already members of the HSB society, are admitted to the housing cooperative. The society's mortgages have then been placed and all economic plans have been drawn up. The residents now elect their own boards to administer the housing state which they occupy. However, each board contains one representative of the local HSB society, and an agreement between the HSB society and the housing cooperative lays down that the accounts of the housing cooperative must be administered by the HSB society.

The members of the housing cooperative must retain their membership of the local HSB society even after completion of their housing units. This ensures continuity of membership in the HSB society.

The special characteristics of the housing cooperatives have led to the adoption of certain rules which do not normally apply to cooperative enterprises in Sweden. The main difference is that the number of members in the housing cooperative is limited to the number of units owned by the cooperative. There are also rules worked out as regards the calculations to be made when and if a member wants to leave the housing cooperative.

A rule of particular significance concerns the terms of a member's "occupancy right". The occupancy right is a form of permanent tenancy agree-

ment, the main characteristic of which is that it has no expiry limit. It also provides the tenant with clearly defined economic rights. A member can transfer his occupancy right to anyone he likes and then recover both his initial capital outlay and his share of the repayments on the mortgages of the society. The occupancy right extends even to the heirs of a member. Upon the death of a member his heirs acquire the occupancy right, and along with it the economic rights of the member.

The National HSB Federation: The members of the national federation are all legally constituted bodies, i.e. local HSB societies. The federation serves as the policy-making body of the movement and as the representative of all the local societies at the national level. In its relations with the local societies the federation acts as a service organ. It is engaged in planning, designing, technical research, etc. The representatives of the federation assist the local societies in negotiating with building contractors. The federation is also the legal adviser to the affiliated societies, as well as their "management consultants". The savings funds accumulated by the local societies are administered centrally by the federation, which is equipped with the specialists to solve the financial problems connected with the construction undertaken by member societies. The federation is responsible for the auditing of the local HSB societies and all of the housing cooperatives.

The federation is democratically controlled by the affiliated HSB societies through a triennial Congress, a General Council elected by the Congress, and an Executive elected by the General Council.

Over the years, the activities of the federation have of course expanded considerably. The organization now employs some 500 architects, engineers and administration employees. It engages in extensive education and training activities for members and employees. The research activities of HSB have led to a number of significant improvements in the standard of housing in the country. To safe-guard the economic interests of the member societies, the federation has also entered the field of industrial production, both on its own and in collaboration with the consumer cooperative movement.

The most interesting aspect of the HSB set-up is its built-in incentive for continuing construction of housing. In the HSB organization there is no risk that building activities would cease, because the members have ceased to be interested in continued work. The major member influence always rests with those who have yet to be accommodated, and they have of course every reason to ensure that their organization does not become stagnant or dormant. Another important feature of HSB is that its organization ensures uniformity of management and administration in the many local societies. The close collaboration with and the supervision and assistance of the federation and its specialists have equipped the local HSB societies with the tools to make the cooperative housing movement a leading organization in Swedish housing.

3. MODEL RULES FOR COOPERATIVE HOUSING SOCIETIES

The International Cooperative Alliance, which is a world body composed of national cooperative movements in more than 50 different countries, has set up Auxiliary Committees dealing with different aspects of problems of the cooperative movement. One such committee, the Auxiliary Committee on Housing, has drawn up a set of model rules for cooperative housing societies intended as guide lines to cooperative housing organizations in different countries. The last part of this paper will be devoted to a presentation of these model rules which were drawn up and accepted in the beginning of 1958.

Before discussing the ICA Committee's model rules it is worthwhile to point out that it is only when one reaches a stage where model rules with a minimum of local variations are accepted and adhered to that the various scattered societies can begin to function in a concerted manner as a cooperative movement in the accepted sense of that word. It is only then that decisions as to broad lines of policy can be taken with a hope that they will lead to implementation within a reasonable period of time and in a majority of the individual societies. If each and every individual society tries to devise its own approach in dealing with economic matters no effective cooperation between the many individual units in the cooperative movement is possible, and thus no effective realization of the basic aim of promoting and safeguarding the economic interest of the individual cooperative members can be achieved.

In this connection it should be emphasised that merely an adherence in a legalistic sense to the Rochdale principles does not solve the problem. This is of course not to say that the Rochdale principles would have lost their validity or significance. It does mean that the Rochdale principles have to be translated into operational rules, and interpreted perhaps more according to their spirit than according to the letter. The Rochdale principles provide the necessary, even inevitable, framework enabling cooperative organizations to work out operational rules to guarantee the efficient implementation of their specific aims.

The model rules adopted by the ICA Auxiliary Committee on housing follow this line of reasoning already in stating the aims of a cooperative housing society. These aims are listed as follows:—

(1) The aim of the society is to serve through its non-profit making activity the broad masses of the population and to provide its members with good and healthy dwellings at moderate prices.

(2) All business serving this end may be undertaken and participations entered into, in particular:—

to purchase and sell landed property,

to provide dwellings to be let and to administer them,

to build homes to be purchased,

to raise loans of all kinds,

to grant loans to members who have acquired one of the Society's dwellings,

to advise members who intend to build their own homes, and

to provide communal amenities of all types in their housing estates, such as cultural centres, shops, workshops for small artisans central laundries, baths, sports fields, children's creches and kindergartens.

Again, in the rules governing membership of the housing cooperative society, the ICA model rules provide specific guidance :

- (1) Any physical person and any corporate association of persons may become a member.
- (2) Application for membership may be submitted in writing. The prospective member must declare himself in unconditional agreement with the rules and accept them as legally binding.
- (3) The Chairman of the Administrative Council decides on admission. If he rejects an application, the applicant may appeal to the Administrative Council whose decision shall be final. No reasons need be given for a refusal.
- (4) Membership is acquired by registration in the Members' Register which is kept by the Administrative Council. Registration is effected after the new member has paid his entrance fee (Rule 10) and has paid up at least one share (Rule 11).
- (5) Members are informed of the registration in writing.

Clearly this explicit definition, not only of the conditions and pre-requisites for acquiring membership, but also of the procedures through which membership is to be granted a person helps to guarantee that all societies behave in an identical manner, and also that all prospective members are guaranteed equal treatment.

Similarly, the model rules spell out the procedures to be observed by a member who wishes to withdraw from the society. This is necessary in order to prevent a disruption of the activities of the society and is particularly significant as regards cooperative housing societies. The capital of a housing society represents longterm investments in buildings. The period of notice before withdrawal must therefore be as long as possible. The recommendation of the ICA Committee is that withdrawal notice should never be fixed at less than two years.

Naturally no set of rules and bye-laws, however, skilfully drawn up, can by itself guarantee the successful operation of an enterprise—cooperative or private. All the same, the rules must provide, in explicit terms, for a machinery designed to reduce the possibilities of mis-management, unequal treatment of members, straying away from the aims of the society, and so on.

One important consideration in this connection is the manner in which a member can be excluded from his society. Obviously some machinery is necessary, through which a society can rid itself of persons working in contradiction to the aims of the society. On the other hand each member must

be clearly informed of the grounds on which he can be excluded. On this subject the ICA rules suggest the following :—

1. A member may be excluded from the society at the end of a financial year :

- (a) If he has committed a dishonourable criminal offence punishable by law ;
- (b) if, after two warnings, he does not fulfil his obligations under these rules or other contracts with the society ;
- (c) if he harms the society economically ;
- (d) if, by his attitude, either by his carelessness or intentionally, he harms the reputation of the society or its members ;
- (e) if he becomes bankrupt.

2. Expulsion shall be decided by the Administrative Council on the proposal of one of its members. The expulsion shall be communicated to the excluded member in writing and noted on the Members Register.

3. The excluded member may appeal against the decision to the General Meeting. The decision of the latter is final.

4. Persons who are members of the Administrative Council may only be excluded by a decision of the General Meeting.

5. From the day of the receipt of the decision of exclusion by the member the latter may not take part in the General Meeting.

A related problem concerns the settlement of claims. Members leaving the society must have access to full information as to what claims they may raise against the society, and the process of settling such claims. The rules suggested by the ICA Committee to govern the settlement of claims in the case of the society itself being dissolved are particularly important :

- (1) A settlement as regards the shares of a person who has ceased to be a member shall be effected not later than six months after the conclusion of the financial year in which the cessation of membership became effective.
- (2) Except in cases of decisions taken under paragraph 4, a former member may not be paid back more than he has paid into his share account. He shall have no claim on the reserves of the society.
- (3) If the financial year in which cessation of membership takes place closes with a loss the repayment of shares, irrespective of the decision to be taken by the General Meeting concerning the covering of losses according to Rule 43, will be subject to a reduction pro-rata of the loss to the share capital.
- (4) On the proposal of the Administrative Council with a three-quarters' majority of the members present, the General Meeting may decide, contrary to paragraph 2, to increase the repayment of shares out of reserves. Such a decision may only be taken with regard to one particular financial year and only concerning shares of former members who left after

giving notice (Rule 5) by death or dissolution (Rule 6). Such repayments shall be dealt with on a basis of equality.

- (5) In the case of members who have been excluded from the society (Rule 7) paragraph 4 shall not apply.
- (6) Between members who have left as a result of a transfer of their shares (Rule 8) and the society no further settlement shall take place.
- (7) If within the time laid down in paragraph 1 above, the society has been dissolved (Rule 49) a settlement concerning shares shall no longer take place. Claims of all former members and their heirs shall be in abeyance until the time of the final liquidation. The claims of the former members will then be met, according to Rule 51, out of the remaining funds to same extent and in the same way as the claims of those who had continued in membership until the liquidation.

Rules as regards the shares and liabilities of members must be designed to ensure the realization of the economic aims of the society. The rules concerning members' shares are of special importance to cooperative housing organizations because of their large capital requirements. The basic premise of the ICA rules concerning shares is very simple. The amount of the share is to be determined in relation to the amount which a member will be required to pay for a simple dwelling. If, for instance, the construction of the simplest type of dwelling of the society costs 10,000, and if 9,500 of this amount can be covered by funds from the capital market, state loans and such like, 500, *i.e.* 5% of the building costs must be covered by the member. The amount of the share should, therefore, be fixed at 500. In most instances, housing societies will, of course, engage in construction of several types of dwellings. It is then advantageous for the societies to adjust the shares to the types of dwellings which are constructed by the society. If for instance, a cooperative housing society builds the following 5 types of dwellings :

Type	Building Costs
A	10,000
B	20,000
C	30,000
D	40,000
E	50,000

and if, as suggested above, the amount of the share for the simplest type will be 500, one would accordingly stipulate that for type B two shares *i.e.* 1,000 for type C three shares etc. must be taken up by the members. The maximum to be taken up for example would be five shares at 500 *i.e.* a total of 2,500.

Like all other cooperative societies the housing society must guard itself against the risks created by the fact that membership in the society can be terminated at any time. Owing to this, it is necessary to ensure that an individual member is

prevented from taking up an unlimited number of shares. On this point the ICA Committee suggests that nobody should be allowed to hold more than three times the number of shares required for the best type of dwelling constructed by the society.

The size of the share capital in a society operating according to the above rules becomes, of course, simply the total of the subscribed shares.

As to liability a member should be guaranteed that only the share capital is liable for the society's liabilities. This means, in other words, that the personal liability of a member with regard to the debts of the society is excluded even in the case of the society becoming insolvent. The society must, of course, also make detailed provisions regarding the covering of losses, and rules must be framed stating the obligations of members with respect to repayment of losses which have been covered out of the shares.

In order to make sure that the democratic set-up of the cooperative society does not make for economic inefficiency, or even worse, becomes an excuse for economic inefficiency, the functions and competence of the various elected organs and appointed officials of the society must be spelled out. Much of the weakness of cooperative societies is undoubtedly due to the lack of a clear and rational approach to the division of responsibilities and decision making. The ICA Committee has, therefore, taken special pains to work out detailed suggestions on this subject. The overall guide lines of the Rochdale principles which provide for equal voting rights for all members must be interpreted and refined according to the nature and size of operations of a cooperative society. Whereas a small cooperative society of perhaps no more than 50 to 100 members can easily function through a simple system of direct democracy, this system becomes ineffectual in cooperative societies having perhaps several thousands members. A system must then be found which guarantees that the democracy of the society is not rendered impotent in the name of democracy itself. This involves, as in all other forms of democratic organizations, the introduction of indirect democracy through representation at various levels. The cooperative society is an economic undertaking, and the democratic machinery must be so designed as to enable the society to fulfil the economic aims of its members.

4. The model rules briefly described above are based on experiences gained by cooperative housing movements in a number of countries. As said already in the beginning, no set of rules can by themselves guarantee the efficient working of a cooperative society. Ultimately, the cooperative society like all other democratic organizations depends for its success on the interest, loyalty, and integrity of its members. No set of rules can be designed to cover all special conditions and circumstances which may exist in different social environments. Nevertheless, it is necessary to emphasise again the need for uniform operational rules for cooperative societies. Without such uniformity, no sustained cooperative development can be achieved.

The Economics of Urban Renewal**

By

Alfred P. Van Huyck MRP†

I. What is the Urban Renewal ?

- A. Urban renewal in city rebuilding.
1. City of Troy
 2. Delhi
 3. Paris
 4. Rockefeller Center & Lincoln Centre.
- B. All differ in scale, financing, and the extent of government participation.
- C. In the United States urban renewal is a program of government.
1. Started in 1949.
 2. To clear slums and redevelop areas into good places to live and work.
 3. So far Federal government has allocated 3.5 billion dollars (Rs. 1,662 crores) for urban renewal.
 4. Local cities have pledged another 1 billion dollars.
 5. Over 700 different cities with some 1,500 projects.

II. Why should there be a Government Urban Renewal Program ?

- A. City must compete with new areas.
- B. Private enterprise cannot accomplish urban renewal unaided.
1. His motives must necessarily be for profit.
 2. He can only control his site alone.
 - (a) lots are too small, difficult to assemble.
 - (b) utilities often obsolete.
 - (c) neighbourhood not conducive to investment.

C. Public participation overcomes these disadvantages.

1. brings power of eminent domain to acquire large areas.
2. provides the necessary public improvements.
3. can absorb any unusual costs.
4. provides an overall plan for neighbourhood.

D. Advantages of urban renewal to the private sector.

1. Provides ample development sites in the center of the city.
2. Provides protection from bad development encroaching.

E. Advantages to the public Sector.

1. Increases tax revenues from the area.
2. Reduces the cost of providing services.
3. Slums will spread if not treated.
4. Civic reputation hurt by slums and therefore climate for investment.
5. Location of key public facilities may be essential stimulus to future city growth.
6. Provides expansion room for existing industries and institutions.

III. Selecting An Urban Renewal Project.

A. Selection is always done by local city.

1. Federal government provides criteria.
2. Projects can be residential or non-residential.
 - (a) urban renewal is not essentially a housing program.
 - (b) urban renewal is primarily undertaken for economic reasons.
3. Projects should be dramatic.
4. Projects should include a public improvement.
5. Projects should avoid special problems of relocation, engineering, etc.
6. The total cost of the project should be within the governments capacity to pay.

B. Projects should be related to the city through planning.

IV. Financing an Urban Renewal Project.

A. Illustration of Financing :

	Rs.
Planning and Administration	75,000
Cost of Acquiring Properties	800,000
Demolition of Structures	50,000
Installation of Public Improvements	75,000
	1,000,000
Gross Cost	1,000,000
Subtract resale value of land	200,000
	800,000
Net Cost	800,000

B. Costs are shared :

1. Cities under 50,000 on a 3 to 1 basis.
 2. Cities over 50,000 on a 2 to 1 basis.
- C. Part of the local cities share may be paid by the State Government in certain cases.
- D. The cities' share may be either in a direct cash payment or in a non-cash credit.

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V. Conclusions Regarding US Urban Renewal.

- A. It is essentially an economic program.
- B. Private enterprise cannot do the job alone.
- C. Urban Renewal should be done in harmony with city planning.

VI. Implications for India.

- A. Decentralization vs. Centralization of population critical question but :
 - 1. India's older cities will always have a dominant role.
 - 2. India has a great commitment in its existing cities.
- B. Therefore, there is a need for an Indian urban renewal program regardless of the larger philosophy which is chosen.
- C. Frame of Reference of an Indian Urban Renewal Program.

- 1. The program should start modestly.
- 2. The first projects should be thought of as demonstrations with no efforts to make records, but dynamic impact instead.
- 3. The program should be self-supporting on a revolving fund basis.
- 4. At first non-residential renewal should be stressed to reduce relocation problems.
- 5. Urban renewal will differ from present slum clearance in that it will place the emphasis on economic redevelopment.
- 6. The program, nonetheless, must be responsive to human needs.
- 7. It must avoid the mistakes of the US program, especially the time factor. The guideline should be one year for planning at the maximum.
- D. The future is in your hands.

The Economics of Urban Renewal—(Contd.)

1. Urban renewal is city rebuilding. Throughout history there is a record of significant urban renewal efforts. Archaeologists tell us that the ancient city of Troy was rebuilt nine times on the same site. The continuing re-development of old Delhi from the time of Shah Jehan is renewal in its broadest sense. The development of Rockefeller Center and currently the Lincoln Centre in New York City are also examples of urban renewal. While these examples differ in scale, financing, and the extent of government participation they all represent urban renewal. When a few old structures in your own city are torn down and a new building is erected this is also urban renewal. This process of the old giving way to the new is going on all the time.

In the United States urban renewal has taken on another meaning also. Since 1949 the Federal government in cooperation with cities all over the country has been engaged in a program called Urban Renewal. This government program has been established to clear slums and other bad areas to permit their rebuilding into good places to live or work. So far during the 14 years the program has been active the Federal government has allocated 3.5 billion dollars (some Rs. 1,662 crores) and the local cities have pledged another 500 crores to this massive effort. Over 700 different cities are participating in the Urban Renewal Program. These cities are of all different sizes and population from very small to the very large. All together there are over 1,500 different projects underway across the country.

The reasons why the United States has placed increasing emphasis on a Government supported Urban Renewal Program even though the process of urban renewal has been going on at a rapid rate through the effort of private enterprise leads us directly into our topic of discussion "The Economics of Urban Renewal."

2. Why should there be a United States Government Urban Renewal Program?

Almost every American city of any size has some signs of deterioration which can range from a small isolated area to many hundreds of acres of recognised slums. Homes and business structures that have served so well for many decades are now obsolete because the repairs and remodelling necessary are too expensive to be worthwhile. The city is concerned with declining tax revenues at a time when the need for services is increasing. Competition in the form of new housing and new business is springing up in the open suburban land outside the city limits. The city with a future in the United States must meet these challenges and overcome them.

Fortunately, the older city has certain basic advantages. Its location is usually good because city growth followed important transportation routes or possessed other natural relationships with their surroundings. Historically, the older city has been the centre. Often investors will be influenced

by the intangible qualities of past reputation and proximity to other centre city facilities. What is needed to restore the older city to its place of pre-eminence in the region is a renewal program that will let these advantages come into play once more.

In analysing the prospects for clearance and redevelopment of these areas, the private-investor developer can only be expected to undertake those projects that will offer a reasonable profit. His motives cannot be solely city betterment or social concern. Furthermore, it is not just a matter of clearing individual blighted buildings to make way for new ones. The problem in most cases is that building lots are too small, and land must be assembled, the basic layout is obsolete, the streets and utilities inadequate, and the neighbourhood in general is simply not conducive to private investment. Since a developer can only deal with a building site that he owns, he cannot solve the greater neighbourhood problem and as a result, there is little opportunity for successful comprehensive urban renewal on a completely private basis. This is why in the United States there is a need for a cooperative effort between the Federal and local governments and private enterprise.

Government can provide the power of eminent domain so that an entire neighbourhood can be notified and purchased, cleared and redeveloped according to an overall plan. Government can provide the necessary public improvements, such as new streets, water and sewer lines, park and school sites. Government can provide the large sums of money necessary to finance urban renewal projects and can absorb any loss that may occur in the process.

The advantages of this program to private investors are numerous. These include purchasing of land parcels usually in the centre of the city large enough for modern construction at fair prices. The site will be cleared of old structures and ready for building. It will be serviced with adequate streets and public utilities. Furthermore it will be protected by means of a known overall development plan with carefully drawn controls so that adjacent site developments will enhance rather than impair the value of the investment.

The criticism that the Government Urban Renewal Program is all to the benefit of the private investor at the expense of the public is sometimes raised. This is not valid as the public at large also stands to benefit greatly from the urban renewal program. In the various cities there will be increased tax revenue, from the redeveloped area. Usually there is also a reduction in the cost of providing city services, such as police and fire protection which were formerly required in the slum area. Furthermore, in America, slums tend to spread and good areas of the city will begin to physically deteriorate if they are next to slum areas. The value of investment in private property will decline causing an economic loss to the city. Finally, if part of the city is in slums all the citizens must share the blame for lack of civic

pride and the bad reputation that goes with it. When a city in the United States acquires a generally poor reputation, it hurts real estate values and reduces the competitive position for industry and other forms of investment.

Often the future development of an entire city can hinge on a few key factors—a city civic centre site being placed in the right location, a road connection to complete an essential link in the traffic circulation plan, a new commercial centre being established, or a river bank being reclaimed for public use. These and other key developments may never happen unless urban renewal is used. Through this program the property can be acquired and the costs paid on a sufficient scale to meet the need. The decision to utilize the urban renewal program may effect the entire development of the master plan by opening new opportunities for sound development previously closed to the city.

The need for expanding facilities, such as colleges, hospitals, industries and businesses is well recognised as a stimulus for continued economic growth. Yet, these facilities are often located in deteriorating neighbourhoods of congested urban areas and may be unable to expand. Urban renewal is a program whereby these facilities can have land made available to them at their location to permit this essential expansion.

3. Selecting An Urban Renewal Project

In the United States selection of an urban renewal project is always done by the local city and not the Federal government. The project must meet the Federal government's criteria, however, to ensure that only slums or other badly deteriorated areas are selected. Projects can be either residential, in that predominantly dwelling units are cleared, or non-residential, in that mostly commercial and industrial areas are cleared. In this sense the urban renewal program differs in basic philosophy from housing projects schemes, such as our public housing program in the United States and the similar schemes here in India. It is a fundamental difference. Urban renewal projects are undertaken primarily for economic reasons and only incidentally to provide better housing for slum families. This important social need is taken care of through other housing programs. When families must be relocated from the urban renewal project however, there are very rigid rules for their protection as well as financial benefits.

Since the purpose of an urban renewal project is essentially economic it is important that the project selected result in a significant redevelopment. It should be a dramatic and obvious improvement over what existed before, and if possible it should include a notable public facility. For example, the project might help solve some difficult traffic problem or provide a site for a needed public facility, such as a school. If such an improvement is created through urban renewal the impact of the project on the public will be greater. The purpose of urban renewal is to achieve city rebuilding and poorly chosen projects can hold back a development for many years. Finally, the total costs of the project must be kept in mind so that the governments involved can meet the capital needs without hindering other desirable projects.

It should be clear that to accomplish this complex program called urban renewal within a given city requires a carefully worked out plan for the future of the total city. Though urban renewal may be a separate project it must be related to the whole city through the city plan. This is actually a Federal Government requirement in the United States.

4. Financing An Urban Renewal Project

So far we have been discussing the basic concepts of land economics which underlie the government's urban renewal program. It is worthwhile to digress a moment to look at the method of financing an urban renewal project itself. The public cost of carrying out an urban renewal project is the sum of the cost incurred in preparing the land for resale, less the resale value received. Let us illustrate this by considering a hypothetical example of a simple urban renewal project. The costs might be summarised as follows :

	Rs.
Planning and administration	75,000
Cost of acquiring properties	800,000
Demolition of Structures	50,000
Installation of Public Improvements, such as streets and utilities	75,000
Total Cost	1,000,000
Subtract the resale value or public re-use value of the land	600,000
Net cost of Project	400,000

The Net Project Cost of Rs. 400,000 is the true public cost of carrying out the public portion of the urban renewal project. It represents the "writedown" costs of making the land available to a private redeveloper. For cities under 50,000 in population the Net Project Cost is shared with the Federal Government on a three to one basis with the Federal Government paying the larger share. All other cities share urban renewal costs on a two to one basis with the Federal Government. Assuming in this case our example is in a city under 50,000 population, then the net project cost would be shared as follows : Federal—Rs. 300,000, Local—Rs. 100,000. Sometimes the state government will also contribute to the local share further reducing it.

The vast cost of executing an urban renewal program in the United States makes it necessary for Federal government participation. The individual city alone would not be able to absorb the costs involved and still meet the demands for services and improvements. Since the entire country recognises the importance of the city to the overall economic life of the people it is considered appropriate that all of the people through their taxes contribute to the rebuilding effort. It is for this reason that the Federal government participates financially on so large a scale.

The local city share may be provided as a simple cash payment. A city may also pay for all or a part of its local share in credit for certain types of

work it performs. Creditable items include public improvements which benefit the project area. By paying for all or part of the local share in credits of this type the city can often successfully relate urban renewal to capital improvements which it would have to make in any case. In this way, the city avoids an outlay of extra cash for urban renewal.

5. Conclusions Regarding the United States Urban Renewal Program

In this brief discussion of the urban renewal program in the United States several important points have been underscored. First, urban renewal is not just a slum clearance and housing scheme, but has a major economic orientation. Secondly, private enterprise cannot do the job on a sufficiently comprehensive scale and therefore it becomes a legitimate area of public participation. Third, to be of maximum benefit urban renewal should be used in harmony with city planning to accomplish dynamic objectives.

6. Implications of Urban Renewal in India

Up to this point I have spoken with assurance and conviction on a program I know, but to translate this experience into its implications on the Indian scene places me on risky ground. Nonetheless, in an effort to stimulate thought I would like to share some ideas regarding a possible urban renewal program in India.

One of the foremost realities in India today is the increasing population and with it the rapidly increasing pressures for urbanisation. The pattern which this urbanization takes across the face of India will in the long run be the controlling factor in the development of the country for many decades to come. The major land use decisions that are made now will still be with us in the year 2,000. It is well, therefore, that those concerned with India's urban future pause to reflect on the basic theories underlying their decision making. There appears to be, broadly speaking, two schools of thought. On the one hand there are those who believe that decentralization of the urban population is the only answer. They talk in terms of counter magnets, new towns, and limiting central city growth. They are quick to point out the old cities of India today are pressed beyond capacity in terms of public facilities, transportation, and housing and that to permit the new wave of urban development to wash over them would be to invite chaos. The other group feels that the central city should be made ready to receive this urban growth and then point out the difficulties in enforcing a program of decentralization of urban development on the scale which is anticipated. It is not my intention here to digress on this most interesting point more than to affirm its relevance to urban renewal planning.

The existing major cities of India today will always play a dominant role in the regions where they are located. Whether you support decentralization of the population or centralization it must be recognised that India has a great commitment in its existing cities. We cannot turn our backs to their needs and just concentrate on the development of counter magnets. If this promise be true then it leads us to the conclusion that India, as the United States, is in need of an urban renewal

program; a clearly defined method whereby government and the private sector can combine to stimulate economic growth while at the same time eliminating slums and making necessary public improvements.

What is the frame of reference which should be considered when developing an Indian Urban Renewal Program? It is premature to reach the level of specifics at this stage, but a few guidelines seem to me to indicate a direction.

1. The fact that urban renewal will have to compete for scarce money and manpower in the overall picture of India's development program suggests that the original approach to urban renewal be modest. There is need for a period of trial and error, of developing techniques, and acquiring knowhow anyway and this valuable maturing process does not require large sums of money. In the United States it took ten years before the first substantial results from urban renewal were felt across the entire face of urban America.
2. The first projects in the urban renewal program should be carefully chosen as demonstrations with little or no concern for trying to make records as to the amount of land to be cleared or the number of families relocated. This will all come later. The first steps will be to show that urban renewal can result in dramatic improvements in the heart of the city and thus stimulate economic growth.
3. Because money will probably not be readily available for urban renewal activities, the program should be set up on a revolving fund principle with initial grants to the various cities with the understanding that they must make the program pay for itself on a continuing basis. In the first years this should be possible without difficulty as most cities have many valuable land areas which are under used because of existing laws and settlement patterns. Through urban renewal these areas could be bought and sold at a profit. The money so gained could then be used to expand the program and help subsidize other needed but less profitable projects.
4. At first the emphasis should be on non-residential urban renewal which will not cause severe social dislocation or encounter major relocation problems. The housing situation in India suggests that very little public housing will be available for the very lowest economic level which presently make up the bulk of the slum dwellers. As a result urban renewal would be severely constrained if large numbers of families would need relocation.
5. Recognition must be given that urban renewal differs from the presently practiced slum clearance schemes in that it stresses economic improvement over social betterment. I mean by that, urban renewal, places the emphasis on choosing sites which offer a high potential for economically sound redevelopment rather than selecting sites because they contain the worse slums of the city.

6. Naturally, urban renewal must be sensitive to the human element of the program and provide the social services needed to assist in the relocation process. The extent of these services may well prove to be extensive and in any case will be essential to its success.
7. Finally, urban renewal in India must avoid the mistakes of the experience in the United States. Most important of these is the great time involved in American urban renewal. It is not unusual to see three or four years go by between the time an urban renewal project is conceived and the time clearance of the site takes place. Here, where the need is so great and time is so short,

urban renewal must be developed from the start as a fast, efficient, dynamic tool available to the cities of India. As a target guideline I would suggest one year be considered the maximum time for the planning of an urban renewal project area and the program be set forth accordingly.

7. These ideas have been offered in the hope of stimulating others with greater insight into the needs of India's urban centres to move ahead with the development of an urban renewal program. The challenge is overwhelming. People from all over are looking to India to see how the greatest problem of urbanization the world has ever known will be handled.

Development Planning and The Appraisal of Investment Projects**

By
Dr. A. N. Suylichem†

1. 'Development planning' in the economic sense of the word is the conscious setting of the goal to increase the wealth of the country and of the ways in which this has to be reached. To measure the development of a country the concept of per capita income is used, i.e. the national income in the subsequent years divided by the population in the same years. National income in its turn can, according to the broad definition of the famous English economist Alfred Marshall be described as follows: "The labour and capital of the country acting on its natural resources produces annually a certain *net* aggregate of commodities—material and immaterial—including services of all kinds. This is the true net national income or product of the country or the national dividend".

2. If we compare per capita income in various parts of the world we find extraordinary differences. For the year 1957 we find, expressed in dollars, a per capita income of 1,870 in North America, 790 in North West Europe, 300 in Latin America, 150 in the Near East, and 70 in South East Asia (all figures are nothing but first approximations).

3. These huge differences have shown the tendency to increase over time: in 1913 the per capita income in North West Europe was 50% of that in North America, in 1953 about 40%, for South East Asia the figures are 7 and 3, 5 respectively. The cause of this increasing gap is the fact that national and per capita income increases faster in rich countries than in poor (where it remains more or less constant).

4. In rich countries we find during the last century a shift from agricultural activities to industrial activities. In 1830 about 70% of the economic active population in the U.S.A. found employment in agriculture, in 1950 about 10% for Sweden the figures are 60 and 20% respectively. Today about 70% of the economic active population in India is employed in agriculture.

5. In order to increase the national product and employment we have to shift population from agriculture with its limited possibilities to industry. Therefore, we need capital formation (i.e. a stock of production goods), otherwise we cannot employ the labourers in industry. How much this capital formation can easily be worked out with the help of some symbols:

K = capital stock

$\Delta K = I$ = net investment in a given period

$I = S = sY$, where S stands for net savings, Y for national income and s for the average rate of saving.

$\frac{K}{Y}$ = capital output ratio (i.e. net yearly result of a certain unity of capital) = c

If we assume that the ratio between the economic population and total population (P) remains constant, constant per capita income over time means:

$$\frac{\Delta K}{P} = \frac{\Delta Y}{Y}$$

This however asks for

$$\frac{\Delta K}{\Delta Y} = \frac{K}{Y}$$

Thus $\frac{\Delta K}{\Delta Y} =$

$$\Delta K = I = c\Delta Y$$

$$sY = c\Delta Y$$

$$\frac{\Delta Y}{Y} = \frac{s}{c}$$

Let the percentage increase in *per capita income* be y , and percentage increase in population p , then

$$y = \frac{s}{c} - p$$

Thus $y = 0$, when $p = \frac{s}{c}$

This seems to be the situation in the poor countries, where p is about 1.4, c about 3.5 and s about 5%. Increase in per capita income thus asks for an increase in s , or a decrease in p , or a decrease in c , or a combination of the three.

6. In this relation some remarks about residential construction seem useful. In most of the poor countries those who save have a strong inclination to invest their money in residential construction. But the capital output ratio in home renting is high, certainly more than 6. If we assume the average capital-output ratio in a poor country to be about 3.5, and about 50% of net investment goes to residential construction, we find the following composition of the average of 3.5:

$$0.5 \times 6.0 + 0.5 \times 1.0 = 3.5$$

If government would channel investment partly in a direction with a lower capital-output ratio the result would not only be a decrease in the average capital-output ratio but an increase in per capita income as well:

$$0.2 \times 6.0 + 0.8 \times 1.0 = 2.0$$

But now instead of

$$0 = \frac{4.9}{3.5} - 1.4$$

we would get $1 = \frac{4.9}{2.0} - 1.4$

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7. In addition to the tendency of residential construction to make the capital-output ratio less favourable and thus to limit economic growth, there is as a second disadvantage that this kind of investment gives far less rise to further industrialisation than *e.g.* investment in basic industries.

8. Since, however, for other than pure economic reasons a certain amount of house building is necessary, it follows from the above that we should try to reach our construction target with as low an investment as possible.

9. It is often stated that developing countries should use the most advanced production techniques. On the other side the employment argument is frequently used. From what we have said before it will be clear that from the standpoint of national growth, the only realistic way to approach this problem is simply the way of cost-accounting. In every economy the economic principle demonstrates that we have to use the cheapest factor(s) of production as much as possible. In rich countries labour is relatively expensive as compared with capital, in poor countries the opposite holds true. With an increase in wages (or with a fall in the rate of interest) entrepreneurs try to use less labour and more capital. This tendency has gone on in rich countries in the last hundred years. Hence more and more capital intensive processes of production in those countries. These machineries are then also exported to the developing countries, where however the factor price ratio is the opposite from that in the rich countries. In those production processes where substitution between labour and capital is possible it would be better, therefore, that special machineries would be designed for those countries where the factor price ratio is different from the rich countries.

10. An example is given to show that the most advanced technical method need not necessarily be the most economic one. To be able to show this, the concepts *isoquant* and *isocost* need to be introduced. Isoquants are production indifference curves, showing the different combinations of factors of production (*e.g.* of labour and capital which can produce given quantities of a special product. The slope of an isoquant thus expresses the rate at which one factor of production can be substituted for another without changing output. (see Fig. 1). The isoquant to the right of another shows the combinations of two factors which give a greater quantity of the same product than the combinations which make up the isoquant to its left. Given the isocosts, *i.e.*, price levels expressing the various combinations of the two factors of production which can be bought at the same costs, and given the production indifference curves, the entrepreneur will find the point where to maximize his profits at a point of tangency between an isoquant and an isocost, because it is at such points that a given isocost comes into contact with the highest isoquant (maximum output at given costs) and a given isoquant comes into contact with the lowest isocost (given output at minimum costs). The example we are going to deal with is taken from the book "Die technische Auswirkung progressiver Investierung an einem Element der

Bauwirtschaft" in which the author Dr. F. Ritter investigates the various technical combinations which were used in Germany by the building of an autostrada for transporting 3,000,000 m³ sand over a distance of 600m.

The following processes of production were investigated :

- (I) digging with spades, transport by narrow-gauge dumpers, moved by manpower;
- (II) digging with spades, transport via conveyor to the dumper, moved by manpower;
- (III) as (II) but manpower replaced by a locomotive;
- (IV) grab-dredger with capacity of 0.35 m³ (transport as III).
- (V) grab-dredger with capacity of 0.90 m³ (transport as III).
- (VI) grab-dredger with capacity of 1.35 m³ (transport as III).
- (VII) grab-dredger with capacity of 1.80 m³ (transport as III).
- (VIII) 3 scrapers Lorain C 108, capacity 8, 4 m³.
- (IX) 3 scrapers Lorain Ts 300, capacity 13.4 m³d.

The different capital cost-labour cost relations are clearly shown in the following table :

Production— method	Capital costs	Labour costs	Total costs
I	326	4.440	4.766
II	422	3.895	4.317
III	542	2.485	3.027
IV	1.260	1.088	2.348
V	1.099	896	1.995
VI	1.022	799	1.821
VII	1.330	765	2.095
VIII	1.635	400	2.035
IX	2.005	372	2.377

It is evident that with the existing factor price ratio, in other words the prevailing ratio of the wage level (remuneration of labour) and the interest rate (remuneration of capital) process VI will give the minimum cost combination. The isoquant and the isocost for this are shown in Fig. 2.

Of course, if we bring in the time element, the picture might be different. If on the other hand, there is no time set for the task, the picture might be refined by bringing in the indirect costs resulting from using a lower method.

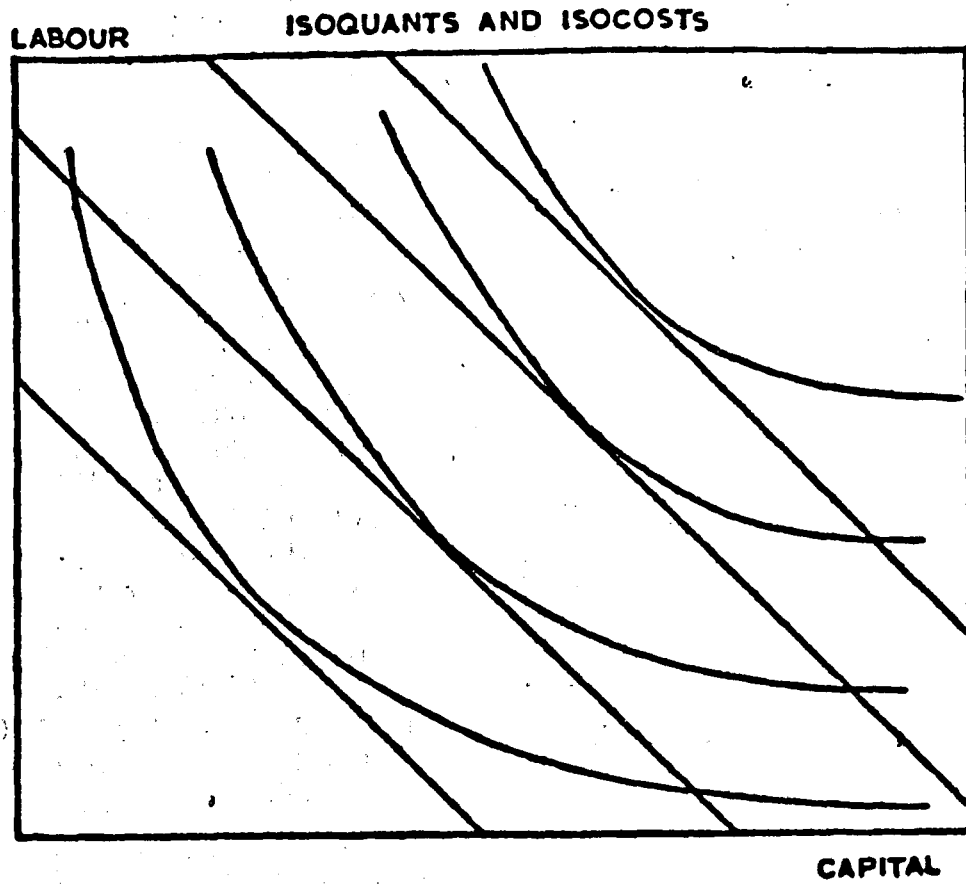


FIG. 1.

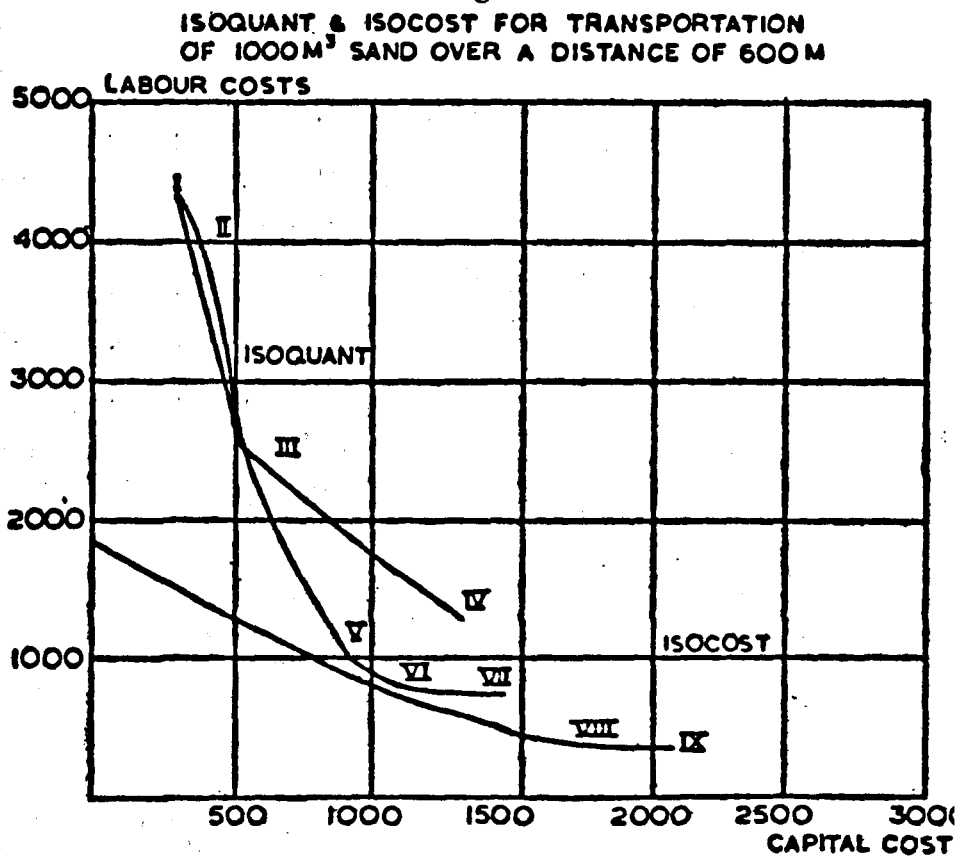


FIG. 2

Real Estate Values and Appraisal *

By

R. M. Parikh†

1. INTRODUCTION

1.1 The word "Estate" is derived from the Latin word "Status" and in early times, a man's social status depended upon the kind of estate which he held in land *i.e.*, the interest one holds by some form of tenure. He was thus in possession of the estate and later used to be treated as the owner of the estate or the property in possession. Land is a kind of property in which the Law recognises that a man may have an estate of inheritance and a grant of land is usually made to a man or/and his heirs, so that the estate would endure, not merely for the benefit of the grantee himself, but for the benefits of his heirs also, for successive generations. Land is by nature immovable and indestructible and therefore if a tenant was wrongfully dispossessed of his land it was possible to restore it to him; but there are other types of properties—movable as they are, as for example goods. They are movable and capable of destruction and if a man's goods are stolen, it might not be possible to restore the specific goods (articles). In these two cases, the law gives different kinds of remedies. For the wrongful dispossession of land the action is in form of remedy to approach the courts to recover possession of the land. This is called a "real" action because the object of it is the specific restoration of the thing in dispute, *i.e.*, in a real action—process of execution issued directly against the thing itself. A real action however never lay in respect of the wrongful deprivation of a man's goods, because there was no certainty that the thing was capable of specific restitution. Hence in case of goods, the law gave "personal" action, *i.e.*, an action wherein process of law was directed—not against the thing itself but against the wrongdoer to compel him to make compensation for the wrong. This compensation usually takes the form of a sum of money called "damages".

Upon this distinction between real and personal actions is based the main classification of property, *i.e.*, into "real" property on the one hand and "personal" property on the other.

This distinction between Real Estate or Property and Personal Property can be summarised as below in brief:—

- (1) Real property is the subject of tenure while personal one is the object of absolute ownership.
- (2) The ownership of land might be split into a number of estates for the benefits of persons in succession. The ownership of personal property (goods) is always absolute.
- (3) If the estate owner died, his property descended to his heirs, while goods, whether bequeathed or not, went in the first

instance to the deceased's personal representatives and available for payment of his debts.

- (4) If an owner was wrongfully dispossessed of his land, he could recover it in real action. For the wrongful deprivation of goods, the law gave merely a personal action against the wrongdoer for the recovery of damages.
- (5) The transfer of land ownership is made effective by a deed of grant, while goods are freely transferable by mere delivery of possession.

1.2 The above distinctions are mainly due to the difference in the nature between the two kinds of property. Land is a permanent thing—it is immovable and indestructible. Goods are of a transient nature—they are movable and for the most part, capable of destruction. Therefore it may be considered as two divisions—"Immovable" and "Movable".

1.3 In early times, the real property was considered the land free-hold only but now the lands of various tenures—(a) free-hold, (b) copy-hold, are included. Sometimes the leaseholds, though interest in land, are at times classed as personal property, since it is treated as the personal right, arising out of the agreement or contract of tenancy.

1.4 According to English law, in early days, the classification was (1) lands, tenements and hereditaments on one hand and (2) goods and Chattels on the other hand. The word "tenement" means a holding of land, while "hereditament" includes any property which descends to the heir on the death of owner. The classification of **real property** originally applied to land only, or rather to estates and interests capable of subsisting in land. An owner of land may be entitled to the present possession of it, or he may have interest in land, which will come into his possession at a future time, *i.e.*, for example where land is granted to A after the death of B, who is alive at the time of the grant. An owner entitled to the present possession of the property has a "corporeal" interest therein, *i.e.*, he possesses a tangible and visible thing; whereas an owner who is not immediately entitled to the present possession of it has an "incorporeal" interest, *i.e.*, a mere right unaccompanied by possession of anything corporeal. Thus in the example above, A's estate (interest) in the land is "incorporeal" from the date of the grant until the date of B's death; when B dies, A's estate falls into possession and becomes "corporeal". As a result of the above system in early days of conveyancing, the division of property into

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(1) Corporeal Property and (2) Incorporeal Property was applied to hereditaments principally.

1.5 The words "corporeal" and "incorporeal" have in modern times, been applied to all kinds of property. Corporeal property includes all things which can be touched and seen, *i.e.*, land—immovable and movable goods in possession of their owner. Incorporeal property includes mere rights, which, though valuable, are in themselves intangible and invisible, such as shares in a company, a debt, a patent or a copyright, a right of way or right of light and ventilation over land belonging to another, a right to possess land at some future time, or a right to shoot or fish or take minerals from another's lands—all of them are mere rights unaccompanied with the possession of anything corporeal.

1.6 Thus the present summary of classification of property under two chief heads "Real" and "Personal", is as under:—

A. REAL PROPERTY which comprises of—

1. Corporeal rights—corporeal hereditaments, including freehold and copyhold land in possession.
2. Incorporeal rights, which may be subdivided into:—
 - (a) Incorporeal hereditaments becoming corporeal at a future land time, *i.e.*, future estates in land, including reversions, remainders and executory rights (interests).
 - (b) Incorporeal hereditaments which are ever of an incorporeal nature, including lordship over land, rent charges, easements, etc.

B. PERSONAL PROPERTY which comprises of—

1. Corporeal rights, such as leases and mortgages of land, goods and physical and movable objects in possession.
2. Incorporeal rights, stocks and shares, patents and copyrights.

2. PROPRIETARY RIGHTS

2.1 Next to the various classifications of estate in general and "real estates" in particular, comes the nature of "Proprietary Rights", as it is the first thing to clearly visualise the nature of the thing to be valued. The proprietary rights of a land owner cannot however be defined in positive terms and it is impossible to enumerate all the varieties of legal rights and privileges which a person enjoys as owner in possession of land. In general it may be stated that the owner can do as he pleases on his land-estate provided that he causes no harm to others—A land owner must not do anything so as to infringe the legal rights and privileges of his neighbours, of persons having future interests in his land, or of the public in general, and above all he must observe any restrictions imposed upon by his neighbour or imposed upon his user by statutory authority, *e.g.*, bye-laws of a local authority. Within the limits of this principle of law, a land-owner may do as he likes. He can construct, the buildings up to any height and upon any part of his land according to building bye-laws. He may erect a wall or

permissible height around his land to ensure privacy from his neighbours. He may plant and cut down trees, cause water to collect, arrange for water to fill up ponds or lakes in existence in his land, dig wells, extract minerals, without any infringement of other rights.

2.2 A person in possession of land for a limited period, such as the duration of time or lives for a certain number of years, is under a legal duty bound not to despoil or waste the land, trees or buildings to the detriment of the person entitled to the possession and enjoyment of the land at the end of the limited period.

Thus in short, the material or physical objects are the proper subject matter of a right to ownership but in modern times, rights akin to ownership may be enjoyed in a variety of "things" which have no corporeal existence, such as easements, profits and rent charges, debts due to a person, patents and copy-rights. Physical or material things comprise land on the one hand, and goods on the other, *i.e.*, immovable and movable property.

Ownership chiefly imparts a right to the exclusive enjoyment of some thing. An owner in possession of a thing has the right to exclude all others from the possession or enjoyment of it and if he is in case wrongfully deprived of what he owns, he has the right to recover possession of the thing from any person. This right to maintain or recover possession of a thing as against all others is the essential feature of ownership.

2.3 I have mentioned above the subject matter of possession but let one thing be made clear that possession in the legal sense is not restricted in its literal meaning to the actual possession of a thing. The meaning of possession in law can be further explained by reference to land and houses. The person deemed by law to be in possession of land or houses is the right person who has the actual or potential control over the premises coupled with the intention to exercise that control to the exclusion of other persons. At times, the person who in fact has control of the premises may not have any title to the land, and he may have taken possession without having any right to do so, nevertheless the law will protect his possession (except against the claim of the true owner) and hence he has "legal possession". The test of possession in law is the capacity to sue in trespass. A person may be in legal possession of a house without in fact occupying it, provided he has the potential control of the premises and the intention to maintain that control. Thus an owner who locks up his house and leaves it empty is regarded by law as in possession.

2.4 Thus in all democratic countries of the world, Real estates have always been considered as one of the prerogatives of which the owners are proud and jealous. At the same time they do not like their estates being kept idle, and would try to get the maximum income out of them. In India, the Valuers (styled as Surveyors in European countries) are now being recognised as the right type of advisers on property rights. It has also been accepted by several States during the last decade that the studies of a "Valuer and of real estate appraiser" are complex in themselves, be-

cause they possess more than mere civil engineering or architectural knowledge and every Surveyor, (not the cadastral surveyor)—Valuer is expected to possess technical knowledge of real estate and building, coupled with study of legal rights of persons holding different interests in property. These legal rights mainly comprise of:—

- (a) The right to enjoy and dispose of things in the most absolute manner, provided that there is no infringement under the laws and regulations.
- (b) "Ownership of the ground" implies ownership of what is above the earth and what is under it.
- (c) Owner may only be deprived of his right of ownership for public purposes in the circumstances and manner laid down by the law and in return for an equitable fair compensation (and I would add), to be paid in advance.

With this specialised knowledge of rights and laws, combined with technical study of estate development, the Surveyor-Valuer can ably advise the owner whether it would be worth a good speculation to buy land for development as a building site, whether it would be profitable to develop land in his possession or sell it outright or to await for the future prospects, etc.

2.5 With the freedom for India, and with the support of Central and State Governments the people have become "industry minded". India is such a vast country with several lakhs of villages distributed in rural areas and it would have been good economic policy from the viewpoint of proper and balanced development of the country as a whole, to encourage establishments of new large or small scale industries in rural areas so that with the growth of villages into "Satellite" towns, the present confused state of development seen in several parts of the country, creating daily problems of Housing shortage, etc., would have been easily avoided from the beginning, with the introduction of "planned development" at State level. The absence of this policy has created centralisation of industries in large towns and cities, with gradual disappearance of population from villages. The village folk leave their sweet homes—humble dwellings—in search of employment to towns. Housing problem of already congested towns and cities thus becomes more and more acute day by day. The land prices shoot up and the financial problems of Housing are upset. State Governments then begin with introduction of legislative measures, such as Rent Restriction Act, Town Planning Act, Corporation Act, Land Acquisition Act, etc. These measures have in fact failed to achieve their objects of national interest peacefully, as is seen from the vast increase of litigations in civil and criminal courts, nowadays, in connection with valuation disputes for fixation of rental incomes or compensation. Look at the tremendous expenditure incurred in litigation and creation of additional courts. The various Acts do provide for fixation of fair and reasonable rentals and compensation, and here the responsibility of the Valuer specialised in this scientific approach of Valuation starts. There are various methods of Valuation of such real estates, depending upon the complications involved in them, and the Valuer is expected to go deep into the matter with his

special study of the subject of "Valuation of Real Property". It is a vast and complicated subject, requiring deep study of two to three years. The main points of "Valuation of Real Estates and Appraisal" and its broad principles are briefly discussed here.

2.5.1 *Broad Principles of Valuation*—To start with, from a Valuer's point of view, there are two classes of people in the world, viz.,

- (i) those who have money and are willing to place it at the disposal of others for their use for a consideration, and
- (ii) those who are willing to pay some sum periodically for the return of the money of others.

First is called "Capital", while the second (*i.e.*, the amount paid to the first for the use of the money) is called "Interest".

The rate of interest which people demand depends mainly upon the "Security" for the repayment of the capital and the payment of interest upon the capital so advanced. Interest upon money invested in estates (land and houses) is called "Rent" which includes, besides interest on capital, a sum to cover any expenses which may be incurred by the owner of the property for management or repairs, to keep it in a fit state to command the rent. Thus the basis of valuations, from an investment point of view is "annual income". The normal usual procedure in valuing a property is to estimate the net annual income it is capable of producing and to multiply this income by a figure, known as "Year's purchase" representing the capital value for each one rupee of that income. This "Year's Purchase" varies according to the rate an investor in the particular type of property would expect interest on his investment. Thus we arrive at the real value (at the present time) of the right to receive the estimated annual income from the property so long as the property is capable of producing the income. Here comes the question of the duration of the period the income is continued to be received. If a property continues to fetch an annual income—same amount for all times and for ever—the income is called "income in perpetuity", and the investment is called "secured investment", since the income is not only paid to him or to his successor but for ever. Land and houses can be classed as good securities for the safe investment of the capital as there is nothing to disappear as in the case of investment in a commercial undertaking. For example, if a property is estimated to produce a net annual income in perpetuity, of Rs. 200 an investor desiring to have 4% rate of interest on his capital would be willing to pay Rs. 5000, while an investor desiring 5% interest on his capital would pay Rs. 4000 only. Thus with the lower rate of interest, the investor is willing to pay the higher amount and taking the other way, with the rate of interest higher, the price paid would be low.

In short, the value of the property based generally on the net income (receivable or received from it) is equal to net income or Y.P., *i.e.*, Year's

$$\text{Purchase} = \frac{100}{\text{Interest p. c.}}$$

As stated before the rate of interest depends upon the security of the income and the class of property, good tenants, etc.; the Year's Purchase would increase with the more secured investment with less rate of interest, and vice versa.

2.5.2 Annual Income as Gross Rent Versus Net Rent—A periodic payment per month for the use of land, together with the capital invested in it or on it, whether in form of drainage, roads, or manure as in case of farms, or other premises with extra conveniences of special gas and water (hot & cold) connections is termed or defined as the "Rent per month". The amounts of these monthly periodic payments vary with each class of property, its demand and supply, location, accessibility, surroundings and various other factors. If there is great demand for such a property and if such a property is not easily available, the party in search of it would naturally pay higher rent and in case of less demand the less rent will be offered, even at times, lesser than what is expected of it to realise by way of interest in the open market. A valuer will thus consider the value of a given income as under:—

- (i) The safer the income, the higher will be the capital value.
- (ii) The greater the amount of uninvested money in the country the more will be demand for investment of all kinds. Higher prices will therefore be paid and the result is greater capital value—investment available at less rate of interest.
- (iii) The greater the demand for particular kind of investment the larger will be the prices paid for such investments and hence the greater the capital value.

The above relation of demand, supply and price or value is of great importance to the Valuer, in arriving at the correct figure of valuation of any class of property. For the present subject of Valuation, I would consider two classes of property—(1) Agriculture land and (2) Urban properties.

2.5.2.1 "Agricultural land"—If an owner is occupying his own land and farming it, it is evident that the amount of income he receives will be the economic periodical rent for the year, known as "economic annual rent." If however the land is let, the tenant would calculate the reasonable rent he can afford to pay, after ascertaining the probable "gross income", annual cost of management to derive the gross income, any cost of improvements and such reasonable remuneration for personal services, allowance for risks, etc. Thus in short, after these deductions from the gross annual income, the balance surplus available with the tenant would be the "annual rent" to be paid to the landlord—agricultural owner. In valuing the agricultural land, the experienced Valuer does not go into detailed calculations of the gross income, expenditure factors as stated above. His wide experience and knowledge of rents actually paid for other forms of similar type, should enable him to correctly estimate the probable rental value. No doubt he has to give full consideration for fertility of soil, availability and cheapness of agricultural labour, easy cultivation, nearness from a Railway station, or a city or a market of agricultural produce etc. Agricultural land is always considered a very secure

investment, since its income is more or less assured, except for the causes beyond human control and is more or less steady from year to year. The net income derivable from a good agricultural holding is usually taken to be worth 20 to 25 year's purchase, *i.e.*, the investment in it is expected to bring net interest of 5 to 4 per cent rate of interest. Although this is considered to be a very safe and secure investment for an investor, it is not so easily negotiable for cash transactions as in the case of bank deposits, etc. As a result, the investor in agricultural holdings would like to have his money at a slightly higher rate of interest *i.e.*, by about one per cent above the bank rate.

2.5.2.2 "Urban properties"—They include building lands and house properties and other lands. Under this Head, there are various types of properties and for a Valuer these types create a great headache for valuation, often times, as a result of various complicated interests involved therein. Just as for agricultural holdings, it was necessary to deduce the fair and economic rent from the value of crops, etc., for arriving at their values, it is also necessary to arrive at the proper figures of rents, for estimating their values. For all practical purposes of valuation, it is impossible to consider urban sites apart from the buildings (Houses, shops, factories, etc.) which cover them now or may come up in the near future. Suppose a person proposes to take on lease a piece of land for erecting offices and godowns and thereafter he gives them on rent to various tenants. The first problem before him would be to determine the rent—"lease rent"—he could reasonably afford to pay for the land to the landowner. He then begins to estimate the cost of erecting suitable buildings on the site, calculates the reasonable annual return on the cost of erection, plus some allowance for the risk involved in this enterprise and the trouble, expenses of managing the property after erection. This total figure of annual return plus allowance, etc., is known as "the annual rack rent" or the gross annual rent of the property as a whole. This term of "Rack rent" means the full rental value which the buildings together with lands are worth per annum. With the erection of buildings, the whole estate becomes a different property and technically, the valuers style these buildings as "married" to land and no separation or divorce is possible till the structures are pulled down. It is thus very important to decide or understand how the rents of buildings and rent of the lands are to be apportioned. Once the rack rent is estimated, a fair percentage on the cost of construction in form of interest on capital and allowances for risk and management are to be deducted from the rack rent and the result is the ground rent of the site. These are cases of perpetual leasehold properties.

The second aspect of a building estate will clarify the problem to a great extent. If the land owner himself wants to build on it, the question of rent—"ground rent" for the land alone does not arise; but if he were to sell the land, the prospective purchaser will consider whether the land is ripe for buildings or whether he will find builders to build on the site or whether he will get the tenants in case he builds himself, since he knows that till either event takes place, he cannot hope for any income. In this stage of pre-development, the lease rental value of the site is unsecured and

the rent received from the lease is known as the "unsecured ground rent" but as soon as the buildings are built over, the same ground rent is called "secured ground rent", as the payment of ground rent is more assured or is made more secure with the additional investment on the land. Purchasers of lands for erecting buildings on them on the basis of ground rents, giving about 6% interest on their money will get the value of the land at 17 year's purchase on ground rental value. For a well developed building estate, it is considered that its ground rental value should not exceed one fifth of the rack rental value.

Sometimes a problem arises before a Valuer, as to the stage at which the ground rent of the land is to be usually considered as "well secured". Generally speaking "a well secured" ground rent is considered as one in which the land for which the ground rent is paid is covered to the best advantage by buildings. The following instances show cases of well secured ground rents:—

- (a) Residential properties & factories and warehouses, when the net rack rental value is five times the amount of ground rent.
- (b) Cases of shops in important localities of towns & suburbs, when the net R.R. Value is about 3 times the amount of ground rent.
- (c) Cases of retail shops in a new development where the net rack rental value is four times the amount of ground rent.
- (d) Cases of shops and other business premises in centrally situated busy localities—a freehold ground rent can be considered as well secured if it is less than the R.R. Value by about 6% per annum on the cost of the building proposed to be erected on it.

The above shows that landed investments are being judged side by side with other investments and are required to be valued according to the degree in which they possess the qualities considered desirable in investments. Let us put ourselves in the steps of an investor. We will consciously or unconsciously, begin to compare the property with the idea of the "Ideal Security" and discuss the advantages from the points of—

- (i) Safety and liquidity of the capital to be invested,
- (ii) Safety and regularity of the income, and
- (iii) Ease and absence of expenses in collection of income, etc.

Thus an investor in an ideally secured property as above would be content with somewhat low rate of interest looking to these advantages. It is impossible to find an investment of the ideal type, but on the whole the Government Securities come nearest to it, since the income is not only guaranteed but also it is received regularly without a reminder and the capital is absolutely safe and liquid.

For a Valuer, the problem of security in investments is an important factor as it affects the Y.P. (Year's Purchase) directly and on this Y.P. depends the valuation of the estate. As such, we

should know how the rates of interests from Government Funds compare with the same in various classes of other landed properties, from security point of view. They can be classified according to the rates of interests:—

Government Funds 3%—4% are freehold ground rents half % higher.

Leasehold Ground Rents 4% to 5% i.e., by about one per cent higher,

Freehold rack rents, shops and dwelling houses 5% to 6% while,

Leasehold rack rents and shops and other residences 6% to 8%.

Tenement buildings vary in rate of interests from 8% to 10%.

With the above general study, one can get the idea of what is the Valuation of Real Property and how it can be roughly arrived at by multiplying the net annual rent with the Year's Purchase. Gross and net rents, ground rents, freehold, leasehold types, rack rents (gross and net) have all been looked into for the present purpose of giving you some idea of the subject.

3. LEASEHOLD PROPERTIES

3.1 We have so far dealt with the investments of freehold type and leased ones of permanent lease; but a Valuer more often than not is called upon to value the properties with limited life, short lease terms, repair liabilities, leasehold ground rents, types of uses to which the property is put, etc., not excluding even the various types of building construction and class of building materials. All these above types no doubt give data for arriving at the "gross annual rent" and the valuer has to find out the amount spent over in collection of the income and cost of annual repairs, etc., to maintain the building in the fit state to command the same rent. Deduct this estimated expenditure in terms of annual "out-goings" from the gross rent. Then he thinks of the Year's Purchase item. For investments of freehold permanent type of estates, the Y.P. is the factor equivalent of 100 divided by the rate of interest to be decided according to the security of the estate; but in cases of the estates of other than freehold and permanent properties, the Y.P. is different from the above one for perpetual incomes. The incomes being of short duration due to short life of structures or short leases obviously reduce the value of the investment so far as the leaseholder's rights are concerned. Generally the estate owners invest in estates for getting permanent and sound income and to get this income, naturally they have to lease the property on fixed lease rents or on monthly rents. To the owner, known as "lessor" when he leases the property, it is still a freehold property to him, just as it was before the lease was granted; but to the Lessee, to whom the property is leased, it is known as the "leasehold property" and it will remain so during the period of lease, so long as he continues to respect the terms of lease. Taking the other way, suppose a property produces a net annual perpetual income of Rs. 500 p.a. and at 5% rate of interest, it can be conveniently sold for Rs. 10,000 at 20 Y.P. but no body would be willing to pay this amount of Rs. 10,000 if the income was to be received only for a limited period say 7 or

10 years. It is therefore that for the limited periods, the Year's Purchase factor should be less than for perpetuity.

Suppose the lessee desires to purchase the leasehold property, he thinks that the present income of the property would be no more available to him after the expiry of the lease period, in spite of his incurring the repairing charges year to year to maintain the property in good condition, and the only way to get his capital back would be to set aside a certain amount of annual income as surplus in form of a "Sinking Fund" which with compound interest would accumulate to the capital invested, on the day of expiration of the lease period. These payments of annual sinking fund are generally of small amounts, and cannot be invested obviously at high rate of compound interest. This is just like premiums paid for Insurance Policies and collected by the Insurance Companies. Mathematically it can be worked out that the amount of such annual payments in form of "annual sinking fund" would at some reasonable rate of (three and a half p.c.) compound interest accumulate after some definite period to some amount "X". Similarly taking the reverse way, one can find the amount of annual payment required to be made to accumulate the amount "X". No doubt this is a very tiresome job of mathematical calculations and to avoid it, special Tables have been prepared for easy reference, known as "Valuation Tables".

3.2 Valuation Tables—It is in the beginning difficult to follow these Tables but by practice, one would be able to use them with ease. Let us take up one example of the property:—

An investor desires to purchase the building on leasehold terms, for a term of 34 years and assume that the net rack rental value is Rs. 240. Allowing Rs. 40 as ground rent, the difference (known as "Profit Rent") of Rs. 200 would be the total net income (every year) for a period of the lease (34 years). Capitalising this amount at 5% and 3½% for 34 years, the amount of the capital would be Rs. 3041.40 as under:— $\text{Rs. } 200 \times \text{Rs. } 15.207 = \text{Rs. } 3041.40$.

Taking the reverse way, Rs. 3041.40 at 5% would give Rs. 152.07 by way of interest. Deducting this amount from the balance Profit Rent of Rs. 200, the amount left as Rs. 47.93 would be the amount required to be paid in the annual sinking fund for 34 years so that its amount in form of annual deposits plus 3 and a half per cent compound interest, would amount to Rs. 3041.40. Thus the annual sinking fund factor by dividing 47.93 by 3041.40 for 34 year's lease at the rate of 3 and a half per cent works out to 0.01576 which is the same one gets on reference to Valuation Tables.

3.3. "Virtual" or "Sitting Rent"—There are other cases of investment in which the lessee is being asked to pay a certain amount as "premium" over and above the lease rent. The Valuer has to find out the rent-equivalent of the premium and the sum total of both the figures would be the correct rental figure, technically known as "Virtual" or "Sitting Rent".

3.4 "Market Value" of the Property—So far we have looked into the valuation from the point of

the owner of the estate. Suppose an owner constructs buildings in his land at a cost of Rs. one lakh after purchasing the land for Rs. 30,000. To him the total cost is Rs. 1,30,000 but it is just possible he may get the offer of lesser amount or higher amount (if he is out for sale) in the Open market, depending upon the demand and supply of the similar properties.

Thus the cost or price of the property is different from the Value, i.e., "Market Value of the property", since it is the value fetched in the open market. Here the seller and the purchaser stand face to face or the deal is established through the estate broker. The seller might have spent away his sum lavishly in the property but the purchaser would not pay for it to the extent of his lavish expenditure. The result is that the market value of his property would be low. If otherwise, the seller has built his building economically and in a tactful way and if a buyer comes forward to pay higher value, the higher value would be the market value for his property.

3.5 Valuation for Different Purposes—There are various purposes for which the estates are required to be valued. A local board or a municipality may require the valuation for taxation purposes, or for acquisition under the Land Acquisition Act, Town Planning Act or for fixation of betterment tax or the owner may require the valuation for partition of the property, or for capital tax or for mortgage of his property, etc. Special factors have to be looked into, in certain cases of valuation, and in some cases, only general valuation is sufficient. Under the Corporation Acts, the land acquired for road widening or for other public purpose to some extent, the claimant owner is paid the market value of the part acquired but at the same time he is called upon to contribute some amount for the future advantage his remaining property is likely to get by the road widening proposal. For Cases of fixation of standard rates of Non-agricultural Assessment or for rating for municipal taxation, or valuations for advances of loans or for mortgage, no detailed data is necessary and land values can be estimated by comparing a few sales in the neighbourhood during that relevant period and by working out the cost of the building on "cubic contents" method and applying certain factor for depreciation looking to the life of the building. In case of valuations for fixation of "Standard Rents" or "Fair Rents" under the Rent Restriction Act, the Courts generally fix them on the basis of 6% on the land value and 8 1/3 % on the cost of the building or on carpet area rates of similar properties in the vicinity. In these cases the properties are not lost and hence the rough valuation would be sufficient for the purpose.

3.6 Compulsory Purchase—Valuation for— This is not so in the cases of Compulsory Purchase (Acquisition) of Land under the Land Acquisition Act, 1894. Generally the resort to acquisition is made under the Land Acquisition Act, according to the procedure laid down therein, by any public authority including a public organisation, such as a semi-government institution and the object should be solely for public purposes. Under

this Act, the ownership of the property as an owner is absolutely lost and in the legal sense of the term, it is the total sacrifice (not voluntary surrender) of a right of ownership and not limited deprivation, involving modification in the right of the user. However particular cases of acquisition, such as (a) acquisition of a portion of the subsoil for drainage or water supply, (b) acquisition of the overhead space over the top of a building for carrying over head electric grid wires, etc., for public purpose or otherwise are decided by the Government.

Under the Land Acquisition Act, the process of acquisition has to be started since no owner is willing to surrender his right of ownership voluntarily and under the Constitution of this country (and other countries as well) no owner can be deprived of his rights to ownership, etc., without payment of adequate compensation. Not only he is to be paid for the loss adequately but also the law provides for payment of 15% Solatium to compensate for the owner's sentimental feelings for the loss and the inconveniences he is put to by the acquisition.

The claimant-owner is to be paid the compensation as provided under the Act, *i.e.*, the market value of the property on the date of declaration of intention by a notification under Section 4 of the Act. The Question then arises what is this "Market Value" of the property and how it is to be arrived at for awarding compensation as a price for compulsory purchase?

3.6.1 "Market Value"—The property to be valued for acquisition is expressed under the Act, as "land" and it included benefits to arise out of the land, and things attached to the earth or permanently fastened to anything attached to the earth.

So far we have dealt with the subject matter of valuation and the method of valuing the properties in a very general way. We have also seen that our valuation was different from the amount of "cost" or "price" to the owner. Under the Land Acquisition Act, the compensation is to be awarded in form of "market value". This term "Market Value" is being interpreted in various ways, in practice, by the claimant-owners, leading to Court References and we have before us now several rulings interpreting the term "Market Value". All lead to the general meaning more or less of the term as "Market Value is the amount what a willing purchaser would pay to a willing seller in the open market, on the date of offer". Some have defined it by replacing the words "willing" by the word "prudent" in the above definition. These words "willing" or "prudent" convey a good deal of sense. A seller may be willing to strike the deal but the purchaser may not be willing to pay the demanded value. A purchaser if he is not prudent enough, may be won over or persuaded to pay a higher sum than the reasonable amount a sensible person would like to pay for it. Thus the determination of the "market value" has become a problem of great controversy and these disputes have to be ultimately solved with the aid of Civil Courts. This provision of reference to Courts has therefore been made in the Land Acquisition Act. During all these stages, the advice of a Valuer specialised in

this science of "Valuation" is being sought for by both the parties, the acquiring body and the property owner claiming compensation. The subject of "Valuation" is such a vast one and so complicated that no two expert valuers can independently come to one and the same result, and difference of opinion might occur as a result of different methods of approach, at times. However the following methods of valuations have been generally accepted:—

- (1) Comparing sales of bonafide instances, *i.e.*, of the same land or part of it during the year of notification,
- (2) Comparing instances of sales in the neighbourhood of the property under acquisition, during past five years,
- (3) Valuation on the income basis, or the rent producing capacity, *i.e.*, the "Rental Method",
- (4) Hypothetical development or building Scheme, etc.

In resorting to any of these methods, it is important for the Valuer to note that he has to value the property without showing any interest in the buyer or the seller but at the same time he is to think himself both a buyer and a seller, to arrive at the fair market value of the property.

Method No. 1—This method is appropriate if the sale is a bonafide one. Detailed investigation by the valuer is necessary in the circumstances of sale, relations between the seller and buyer, etc. After finding out these details and if he finds that the sale is between non-parties or relatives or the circumstances showed forced sales or needy purchase, the sale instance cannot be relied and one has to follow method No. 2.

Method No. 2—This is a proper method and relied upon by all in cases of landed estates, *i.e.*, open lands. Valuers have to collect the data of sales of such estates in the neighbourhood, executed during the past five to seven years. Size, situation, evenness or unevenness, access, frontage for hoarding sites, demand and supply of lands, rise and fall in prices during this period of sales, upward or downward trend of values, relative advantage, etc. are all the points to be looked into, for determining the market value.

In acquisition of rural areas, the acquisition officer generally calls some five persons Panches and takes their opinion, or in cases of sale instances, he collects them, calculates the rates of land values per acre or bigha and takes the "mean" of these rates as the land rate for compensation. Non-fruit bearing trees are paid fuel value and fruit-bearing trees are paid somewhat higher value but no scientific approach is made for their valuations.

In case of urgent acquisition, requiring immediate or early possession of open sites, compensation has to be paid for standing crops and here the Panches come forward to assess the compensation. Over and above this compensation, the owner has to be paid interest on the amount of total compensation for the period of delay in compensation, *i.e.*, for the period from the date of handing over possession to the date of payment of compensation.

Method No. 3—This is the method most frequently adopted for awarding compensation as

large areas are required to be acquired for urban development and here the lands are valuable as they fetch good incomes due to their locations in developed areas or in areas under development. Under this method, the purchaser in the market is guided by the annual income he will derive from the property, at the time of offering the price. It may be that the actual rental income that a property fetches is found to be above or below normal. He will inquire into the fair annual rent it should fetch, with the greatest degree of accuracy.

3.6.2 Outgoings—This is another important point a valuer or the buyer has to look into, as the valuation of the estate depends on the net income—rental income per annum—obtained by the seller. Various classes of properties have different problems of expenditure to get the income. This expenditure to recover the income and to maintain the property in the fit estate to continue the same income is classed as “**OUTGOINGS**” and these annual out-goings are to be deducted from the total income to get the net income.

3.6.3 Year's Purchase—We have dealt with this subject in the previous discussions and only a few salient points will be repeated as the Y.P. factor plays an important part in the valuation. Year's Purchase is to be fixed on the basis of the rate of interest expected reasonably from the property investment. If it is deriving perpetual income, Y.P. becomes the factor, *i.e.*, 100 divided by the rate of interest. If the property is not likely to fetch the income in perpetuity, the Y.P. will be reduced, depending upon the length of the period of income. No doubt the calculations of its value at various rates of interest and for various periods, involve a good deal of labour and special tables have been prepared for reference.

When the incomes from properties are of limited duration, the income gets reduced at the end of that period and the property reverts to its old state. Take for example a building property with a life of structure 30 years to run; the present annual income is also to continue for 30 years and thereafter, there is no building and the income is only from the open land after 30 years. The value of the land after 30 years has to be estimated and since the price so estimated is to be realised then, its present value has to be calculated, *i.e.*, the sum which when deposited in a Bank would accrue along with interest after 30 years. This reduction factor is known as the “**Reversionary Value**” of the property and it requires to be added to the value obtained from the short term income basis.

Method No. 4—“Hypothetical development or building scheme”

Many a time, in cases of valuations of open lands, or even fields, an owner claims the compensation on the basis of this method, claiming his land to be not an agricultural one, and valuing it as a building land, although in fact he

may be using it for agricultural use only. Although this type of valuation is not accepted by the Courts but some cases of lands ripe of buildings and not built over due to shortage of funds with the owner, are allowed compensation as building sites.

The valuer prepares a development scheme, calculates the cost of construction of the buildings, and estimates the annual rent derivable from the built over properties on the basis of fair letting rates. He then with the fair Y.P. of 17 at 6% arrives at the value of the property as a whole. Since the buildings are newly built, they are treated as good as perpetual for valuation and this cost of construction is deducted (together with the development charges or the sum spent in development) from the total sum arrived at. The result is taken to be the value of the land as open site.

In some cases a Valuer comes across cases of acquisition where the lands are partially acquired and the owners claim damages in various forms, such as (a) damages for severance, (b) damages for injurious affection, (c) cost of removal including breakages, or (d) loss of business or diminution of profits by the acquisition. These are all details to be investigated for various types of properties, such as residence, shops, factories, cinema sites and so on. To go into these details would mean a pretty long time and think the present study of the subject is more than enough for knowing the importance of the subject, so valuable in the field of Housing and National Planning. Unfortunately, the advantage of the experts in valuation is not being taken by the Planners and the departments controlling the finances of Planning Schemes, to the extent it should have been, on the lines of European countries. On the contrary, the revenue officers of the grades of mamlatdars or deputy collectors have to carry out these responsible duties and the result is more or less Panch Valuations with the result that nearly 60 to 90 per cent of cases are being referred to Law Courts. In old days, the total quantum of acquisition work was several lakhs and the properties affected were practically agricultural lands, while in these days of acquisition cases of great projects involving crores of rupees, a saving of ten per cent by consulting a special valuer would mean a large saving of crores of rupees to the Government Treasury.

To sum up, I once again repeat that the subject of “**Valuation**” is a technical study and its application in itself is a scientific art, requiring good deal of thought to arrive at sufficient conclusion from at times insufficient data. Valuation in practice is often a matter of opinion based on experience; but this experience of a specialised value always leads to his considered opinion, even in court references. Even his advice in income tax appeal before the Appellate Commissioner of Income Tax is found very valuable. The subject of “**Valuation**” plays a very important part in the financial aspects of all projects small or big—whether in private or public sectors.

Real Estate Values and Appraisal

By
Shri R. C. Jain†

1. INTRODUCTION

The valuation of Real Estate is governed by Economics, Engineering, Sociology and Law. It is not so much determined by the quantity of brick, mortar and other materials within a structure, as by the buying habits and social traits of people. Value of a real estate can be defined as the present worth of all the rights to future benefits arising from the ownership of the property.

2. NATIONAL & REGIONAL INFLUENCES ON VALUES

2.1 Real estate represents the principal source of our national wealth. The private ownership of property is an inherent right of free, democratic government. The totalitarian state is a definite threat to this ideology. Totalitarianism means the abolition of individual rights, and with it the right to own real estate. Private property is confiscated in those nations that have junked the democratic form of Government for one of the various nebulous forms of state capitalism.

2.2 The price level of real estate in our country reflects not only what buyers are willing to pay, it reflects as well the history of a kind of Government that believes in individual enterprise, in the right of the private ownership of property, both real and personal, and in an expressed willingness by the Government to defend and perpetuate these rights.

2.3 The actions of the legislature with respect to the laws, it may enact, affecting ownership, attitude of the Administration, which may influence the legislature towards the making or unmaking of laws that affect the ownership of real estate, the views of the Judiciary in its interpretation of the laws that affect the interest of the property owners all govern the value of real estate. The political or military environments also affect the value sometimes.

2.4 The last decade has seen a considerable shift of people from the rural areas to the cities, brought about by industrial expansion and high wages in the cities as well as by technological advancement in agricultural devices. Less manual labour is required on the farm today than ever before. The surplus of farm labour has drifted into the cities, attracted by 'good pay'. Moreover, the opportunities for social and cultural advantages—principally in the field of education—have lured thousands of rural inhabitants to the city. The growth of the city presages a demand for housing. These movements of population have a direct effect on the valuation of real estate in urban towns as 'demand influences values'.

2.5 Again, as cities grow in size, they become less desirable as a place in which to live. Over-crowding of residential areas, over-loading of transportation facilities, crowded schools and the noises and nuisances that characterise the large commercial or industrial city urge the homeowner to seek the peace and quiet of the nearby suburb, where he and his family may pursue life, liberty and happiness far from the madding crowd. This urge on the part of the people has reflected in the valuation of properties in small suburbs that hang on the fringe of the large urban areas. The development of these competitive suburbs—decentralisation, movement of urban population, retail trade and industry—disturbs real values in the nearby large city.

2.6 The real estate business is an indigenous business; it cannot be transacted nationally, because the commodity is not transportable. The work of real estate appraisal is also an indigenous one; the geographic scope of the real estate and appraisal commerce is native to the area in which the commodity lies.

3. EFFECT OF GOVERNMENT LAWS AND REGULATIONS ON VALUATION

3.1 Rent Control—Rent control has exercised the greatest impact on the real estate industry. There is little demand for investment in property on the ground that ascending construction costs, combined with frozen rents has made it unprofitable to build for investment. It has its effect on the maintenance of properties also as the landlords having their income frozen under rent control, are reluctant to carry out proper maintenance and tenants are left to carry out repairs at their own expense.

3.2 Income-Tax—Income taxes have their effect on real estate purchasing power, both of the home owner and of the investor. The income taxes have acted as a deterrent to profit making sales because the profit might place the seller in a higher tax bracket.

In some cases, the tenant finds that continued leasing can be charged off as a business expense and may result in larger tax savings to the lessee than the amount he could charge off as depreciation, where he is in ownership. It may be said that high income taxes discourage real estate purchase.

3.3 Control of Materials—The control of critical materials, such as steel, cement, bricks, has its effect. The purchaser of a property, who is not able to get materials with which to build a duplicate may choose to pay a higher price above the cost of construction of the property he wishes to acquire at that particular moment. In such a case,

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the value depends upon the intensity of desire of a prospective home owner for a particular property at a particular time.

3.4 Labour Laws—In a democratic country, extremely favourable labour laws are made. Such laws have a discouraging effect upon real estate enterprise.

3.5 Municipal Laws—Municipal building by-laws, regulation, Zoning rules, Taxation rates, availability of services and amenities, progressive civic spirit and the will to progress also affect the local real estate market.

4. ECONOMIC BACKGROUND

4.1 The national economy has intimate relation to the value of real property. It is the principal mortgage business of the lending agencies of the country. The availability of every thing necessary to feed, clothe, and house the population—raw materials, agricultural products, textiles and minerals—and the nation's ability to be self-sufficient to produce what it needs from within, give stability to the value of real estate. It is claimed that the degree of independence inherent in the economic structure of the nation plays an important part in its real estate economy.

4.2 The type of house that one can afford to own and maintain is proportionate to his income. Value of Real Estate is affected by taxes—when national taxes increase—housing standards must decrease. Most housing economists agree that one can afford to pay 20 to 25 per cent of his income for shelter. It has also been said that purchase price of a house should not exceed 2½ times the family annual means as they affect the financial ability of the people to own and maintain their homes. If the taxes increase, one would have to decrease his standard of living by decreasing the amount of that share of his income which he spends on housing.

4.3 For the last few years, the Government have entered the housing fields in different ways and in various capacities including financing new housing on the basis of mortgage payments extending over a large number of years. Today its weight and influence are felt in practically every large urban community through the instrumentality of its various agencies. The activities of these agencies affect the valuation of all residential properties in the real estate market especially in the localities in which they operate.

5. SOCIAL ASPECT

5.1 No proper appraisal of residential real estate can be made unless we know something about the inhabitants of the neighbourhood—who are the people, who live in this locality which the property lies, where do they work and how much money they make per month, as values are made by people. This can easily be observed in any neighbourhood by simply cruising up and down the streets in an automobile noting the condition of houses shrubbery and plantings. The appearance of the house itself—is it well painted and well maintained—if the people have exhibited a standard of civic consciousness by the way they keep up their homes, the prospective purchaser is assured that his investment in this neighbourhood

will be well-protected. The percentage of owners in a given neighbourhood is an index to its economic stability. This is also an index to its social stability. It is generally conceded that the moment the number of owners begin to decline in a particular neighbourhood, the renters who replace them have lower income levels and consequently lower social standards.

5.2 When property is used unlawfully—or vice arises in some neighbourhood, the respectable and law abiding citizens start moving out and the desirability of the neighbourhood as a place to live begins to wane. Once the forces of social decay have begun in the neighbourhood, the value of the property begins to tumble, despite all intrinsic construction quality and excellence of design. This is the basis for the old saying "More houses are torn down than fall down".

6. VALUATION OF REAL ESTATE

6.1 Purpose of valuation—Appraisal of a property is done to advise on (i) probable market value, (ii) Fair purchase price, (iii) Prospective selling price, (iv) Assessment of Municipal income and wealth taxes, (v) Fair rental value and negotiation of leases, (vi) Insurance coverage, (vii) Fair trading value, (viii) Fair compensation for damages suffered, and (ix) Compulsory acquisition, probate and mortgage, etc. In each of these cases a different result may be obtained. The appraisal of real estate is a problem and is of daily concern to the mortgage lender, the real estate broker, and the owner except the individual owner of a single house for his own residence.

6.2 Valuation—The valuation is not an exact science and cannot be derived from set formulae. The principles laid down for valuation are general in their application and there are exceptions in different cases. We should be mindful of the words of a philosopher who said "No general statement is ever completely true—not even this one". Valuation is only an assessment and is quite distinct from the cost. Valuation in general can be described as a fair judgment of the market value of the property and thus must necessarily vary according to the judgment skill and experience of the valuer and according to the data and time available for valuation. Thus, since the instruments employed for valuation, lack in precision, the net product, *i.e.*, the value proper must also lack precision. Thus no value of the property can be said to be exact and precise. The valuation by one or two recognised methods is, therefore, an attempt to arrive at the lower or upper limit of the values of the property, the real value lying somewhere between the zone of errors. Two appraisals made by two Engineers of the same property on the same day, may produce varying results. The fundamental basis of valuation of a property for a would be purchaser is the assessment of probable future benefits expected from the property during its probable future productive life in service.

6.3 Market Value—The bull's eye of our assessment is the market value of the property. It can be described as the highest price estimated in terms of money, which a property will bring if exposed for sale in the open market at any given

time allowing a reasonable time to find a purchaser who buys with full knowledge of the rights to the future benefits that will arise from the ownership of the property. Such a sale should be between a willing purchaser and a willing seller who are fully informed about the advantages and disadvantages of the property and are not under abnormal pressure. It may also be defined as the price which typical buyers would be warranted in paying for the property for long term use or investment, if they were well informed, acted voluntarily and without necessity.

Market value is not fixed and may depend upon various factors, chief of these being the desire to possess the property in the mind of the person and his ability to pay for it.

6.4 Methods—The valuation of the property can be made by the use of one or more of the various methods :

- (i) By comparing with other similar properties which have been sold and for which the details of the sale are available. It is necessary however to weigh very carefully all the respective advantages and disadvantages of each property to arrive at a fair comparison.
- (ii) Principles of reproduction, *i.e.*, by estimating the cost of construction and depreciating it to account for its age and adding outlay for land; the costs so obtained are related to the value only in the sense that they establish the upper limit value. The property under value should serve the purpose and functions for which it is being purchased. A majestic building with marble flooring and Burmah Teak wood etc. everywhere, richly decorated exterior, cannot command the same proportional value related to its cost like other buildings. Such utilities will only have a direct bearing on cost and not a remote effect on its values. When comparing cost of reproduction the cost of exact duplication is not necessary and the cost of providing the same accommodation in substantially the same form omitting any unnecessary features which do not add to utility should be worked out.

The market value will also depend upon the situation, size, shape, frontage, width of roadways, vistas, services etc.

- (iii) By capitalisation of the net rents derived from the property. It represents the value from investment point of view.

6.5 Cost Approach to Value

6.5.1 The Government enters the market for the purchase of a property mostly for its own use either as offices or otherwise. The cost of constructing a similar building will, therefore, influence the valuation to a very great extent and the valuation on the cost approach basis will be the main consideration. This method of valuation which is called Land & Building Value Method depends on estimates at the current prices for labour and material of the property under valua-

tion, *i.e.*, the reproduction cost is to be worked out. From this figure is deducted compensation for decreased desirability, depreciation due to age and deterioration of the property. The value of the land is then added to it. The value of land will be affected by the conditions whether the land is a 'free hold', 'lease hold' independent or in share with others. Where detailed drawings and specifications are available, it is possible to arrive at an accurate cost of work but these are often not available and an approximate estimate of quantities is prepared on the basis of certain assumptions and engineering principles. This is, however, a laborious process involving time and expenditure.

6.5.2 A comparable easier method of working out a fair estimate of the cost of reproduction is that of using cubic contents as basis. The cubic contents can be worked out by including the whole of contents within the external surface leaving the minor projections. The cubical rate for similar buildings if available could be directly applied to the cubic contents of the property under appraisal, or it could be determined by working out a detailed estimate of cost for one representative portion of the property and its cubic contents.

6.5.3 The reproduction cost can also be worked out on plinth area basis. The plinth area rate should always be accompanied by the number of floors and the average floor heights, and to similar buildings. The plinth area rate should be brought down to a standard height and the cost of extra height represented as a separate plinth area rate per foot height. The P/A should be the area on different floors added together. The P/A rates can generally be fixed in each locality with a fair degree of accuracy after knowing the cost of similar buildings. The cost worked out on cubic or P/A rates needs adjustment for variations in specifications, extra deep foundations, balconies, chajjas, courtyards etc. No two buildings built by two separate bodies can be alike. Thus deviation for such items like mosaic flooring in place of cement flooring, or teak wood doors for soft wood doors, provision of wire guage doors and so on can be made by adding or subtracting differential costs of such items.

6.5.4 These methods take only the covered area into account and exclude important adjuncts, such as projecting balcony, pavements, courtyards, compound wall, well, sanitary, water supply and electric installations, water pump, etc., roads, paths, lawns, shrubbery. The cost of these services can be estimated separately in detail, or allowed on usual percentage basis on the cost of reproduction of buildings—adding cost of special and superior fittings separately. The cost of compound walls, roads, drains can be worked out on linear basis.

6.5.5 On all such costs of private buildings, Architect's fees for planning and supervising construction of the building, Municipal fees, external service connection charges, development of site if any, hire of special tools and plants, etc., should be added.

7. PRICE INDEX

7.1 Use of standard cubical or P/A rates or other rated costs will give the cost on the basis

of certain basic rates. These rates vary from year to year and from place to place. Such costs should then be corrected for the cost index to be found out from the prices of labour and materials obtained locally and their weightage in the composite cost/rate.

8. DEPRECIATION

8.1 In all used buildings, certain conditions make for decreased desirability. Age is the most important factor. The property is compared to an ideal new property of the same type and the cost or value of the new property is reduced. This discount factor is known as depreciation. Depreciation is, therefore, loss in capital value. The depreciation could be regarded as composed of:

- (a) Physical deterioration, due to wear & tear;
- (b) Functional obsolescence, due to antique design plan or unbalanced utilities;
- (c) Economic obsolescence, due to fluctuations in market conditions not directly connected to building—over supply of properties of one type, a posh palacial building in a poorer locality—underdevelopment of the locality—change in the use of locality.

8.2 Depreciation varies with the locality—it is more rapid in places where rainfall is very heavy or places subjected to other abnormal conditions.

8.3 In Government valuations, it is generally only the physical deterioration that is taken into account.

8.4 Age and Life of Buildings—Age can be ascertained from enquiries by reference to the municipal records, lease documents of land/building or by visual inspection and comparison with buildings whose age is definitely known. It is however very difficult to assess or predict the life of a building in any degree of accuracy—as much depends on annual and special repairs and maintenance. Any such estimate will be in the nature of a guess only. It can only be based on some tables or records of valuation of similar properties. However, no such authoritative tables appear to have been available as to give the lives of buildings for various categories with several permutations and combinations of the specifications.

8.5 There are various methods for working out depreciation but the authorities differ on the subject. The most commonly applied method is to calculate the depreciation in terms of total reproduction cost as new, in proportion to the ratio that age bears to the total span of life. This however means that the value of a building which has lived a total full span of life is nil. This surely is not correct as even buildings which are about to be pulled down have some value. Sometimes it is possible to carry out certain immediate and neglected repairs so as to extend the life of a neglected building. The cost of such repairs should then be deducted from the value found out by assuming longer span of life.

8.6 If any special repairs have been carried out recently, an allowance should be made by adding

a suitable amount to the net cost of the building after the depreciation has been deducted.

9. RENTAL APPROACH TO VALUE

9.1 The ability of a property is judged by the return it produces on the investment in the form of rent. Valuation from an investment point of view will be governed by the net income from the property and the expected percentage yield by the prospective purchaser on the purchase price after accounting for outgoings, like taxes and repairs. The fair market rent of a property is the amount of money which at any given time can be obtained for it from persons able or willing to hire it. It depends upon their desire to live in this property.

9.2 Outgoings—Outgoings in a property are varied and many. The outgoings to be deducted from gross rents will depend directly on the terms of tenancy. The main outgoings are—

- (i) Sinking Fund—Sinking fund for recuperation of capital before the building ceases to yield rental return on expiry of its economic life. In the sinking fund the deferred value of land and salvage value of building are taken in consideration.
- (ii) Repairs—Annual, periodic, special and general repairs are required to maintain the property in a good condition, so that its rent yield capacity remain unimpaired.
- (iii) Municipal Taxes—Taxes form the largest deduction from the gross rent. Many times these are charged as percentage of net rateable value which is about 10% less than the annual gross rent. Taxes paid by owners are only taken in consideration for valuation.
- (iv) Bad Debts, Vacancies & Management Charges—The managerial vacancies are also considerable. However, under charges depend upon the rent, conditions of lease and of tenants etc. Losses in rent due to bad debts and present conditions of supply and demand, such deductions are not necessary except in residential quarters over the rent of Rs. 500 p.m.
- (v) General Insurance—It means general insurance for lifts including employer liability, third party insurance and fire insurance. These are also generally paid by landlords. The total outgoings sometime amount to as much as 50% of the rent.

9.3 Rate of Interest—The rate of interest is governed by many factors: (i) security of capital and if it can be readily realised (ii) if the income was safe and paid regularly, (iii) inconvenience and expense in collecting the income. As a rule, all property investments are to some extent more difficult of realisation than stocks, shares and loan bonds etc. and there is risk of loss of capital or depreciation of income. They also involve expense and inconvenience in management and collection of income. Thus the rate of interest should be more than the general level of yield on an ideal investment.

9.4 In many cities the rent control act enforces the stabilisation of rents of properties built

upon a certain year and lays down the standard rent for buildings built thereafter. The value of a property on the basis of these low rents, could be compacted by reducing the rate per cent used for capitalisation of the net income. The reason is that tenants value the security of tenure afforded by the acts, rents are paid promptly, losses by vacancies and irrecoverable rents are reduced to minimum and net income though limited is regarded by investors as more secure.

9.5 The net income (annual gross rent less outgoings) is ascertained. It is then capitalised from standard rate tables for all incomes in perpetuity from which sinking fund has been deducted as an outgoing for the recuperation of the capital. If the property has surplus land which can be developed immediately, without injurious affection to the rent yielding portion of the property, the present market value of this portion of land should be added. The cost of immediate major repairs require should also be deducted.

10. GENERAL

As already explained, the principles of valuation

are of general nature. Two appraisals made by two engineers of the same property on the same day, may produce varying results. There are various methods for the valuation of properties, and different opinions on the net return expected. There are numerous political, social and economical factors which govern the valuation. The location of the property, neighbourhood in which it is situated, communicational, recreational, cultural, and transportation facilities, competitive demand, type of soil, water, design of foundations, architecture, utility, use, specifications, climatic conditions, annual rainfall, sub-soil water level, amenities and services available proximity to schools, colleges and hospitals, etc. have definite effects on the valuation. The rents paid for other similar properties and the rent if any at which the property itself is let, the reasonability of this rent will also play an important part. Thus no set rules, method or scientific principles can be laid down. This discussion is not to teach or force upon any one the pet dicta or dogmas of any author or Engineer but only explains methods which are generally followed.

Prefabrication for Housing in Under-Developing Countries—A Measure for Cost Reduction**

By
R. P. Mhatre

1. The term "prefabrication" is often misunderstood. The term connotes several ideas. It essentially aims to bring the concepts of industrialisation to Building Industry with a view to effecting cost reduction.

Prefabrication or Industrialisation of housing does not necessarily mean houses produced in factory. So long as heavy materials, such as cement, aggregates, bricks etc. predominate the Building Industry, use of complete prefabricated houses in factories may not prove a successful proposition unless casting yards are established on building sites itself. It is, however, necessary to examine how the concepts of Industrialisation can be applied to the Building Industry, with a view to effecting cost reduction, to achieve quality control, to conserve materials in short supply, to speed up construction, to increase the productivity of the workers and to effect maximum rationalisation in the organisation of Building Industry. There is nothing new in the idea of prefabrication as such; items like precast floor tiles, sanitary, plumbing & electric fittings, doors and windows and various other items in the building industry are produced on mass scale to satisfy the conditions of industrialisation.

2. If we accept this ideology of industrialisation in housing, it follows that the following pre-requisites which cover the concept of industrialisation are satisfied in the Building Industry :

1. continuity of production ensured by steady demand;
2. standardization of building products;
3. integration of various stages in the construction—from the design and manufacture of building products to the erection of a complete building;
4. a rational organisation to effect such integration;
5. mechanisation to replace labour wherever possible;
6. research and organised experimentation in new materials, new methods of design and planning, improvement of existing materials and methods of construction.

3. We often associate building of houses as problem of investment rather than as an article of use. This is a natural consequence of traditional materials predominating in house construction which accounts for a very long life for building. Any suggestion to accept a reasonable reduction in life to balance the "technical" life with the "functional" life of a building gives us a rude shock. There is also a certain amount of apprehension that such a policy of accepting a lesser life for the building may result in larger proportion of recurring expenditure on maintenance and repairs even for the reduced span of life of the building.

With rapid industrialisation and upward trend in prices of materials and labour, the concepts of industrialisation will steadily gain ground even in India as can be seen from the technological development in other advanced developed countries.

4. Considering the technological developments, all the countries in the world can be divided into three groups :

- (a) Countries where national economy is highly developed and the major proportion of the cost is for finishing and equipment, as in U.S.A.;
- (b) Countries where the heavy demand in housing has led to prefabrication irrespective of improvement in quality which will eventually be achieved as in U.S.S.R.;
- (c) Countries where purely traditional materials and skilled and semi-skilled labour is available in plenty in spite of high level of economic and technical development as in Italy.

It is difficult to place India in any of this particular category. It is felt that in rural areas, traditional methods will prevail but in place of high industrialisation as in cities where there is concentration of building volume and there is availability of modern materials and skilled staff to undertake new concepts in construction, prefabrication will slowly get an upper hand as labour and material prices rise. Even where traditional materials are available at economic rates, it may be necessary to apply the new concepts with a view to speeding up the building programme to conserve materials apart from the consideration of economy in cost.

Let us now examine the factors which affect the technological development of housing.

I. Nature of the Building as a Product

The building is a heterogeneous product consisting of various trades. It is difficult if not impossible to apply the methods of industrialisation for such a heterogeneous product. Another factor is the heavy weight of building materials which makes a building, a "fixed in position" product. As the labour wages increase, and the land prices shoot up necessitating multi-storey buildings, the future trend will be for mechanisation and reducing the weight of the building. This will eventually lead to striking a balance between the initial cost and recurring maintenance cost for buildings to last over a reasonable span of life.

II. Fluctuation in Demand

The demand for housing is subject to economic and seasonal variation which makes the industrialisation difficult. With proper planning programme

to meet the very serious housing shortage, it would be possible to cover this factor and ensure a steady demand consistent with the available resources for each region.

III. Traditional Character of Building Industry

All the persons concerned at various stages in the Industry know how to do the job with the traditional materials and methods of construction. This induces a vested interest in not accepting new concepts and materials which may replace the traditional methods. Modern transport facilities and multiplicity of service required in a modern building also warrant a change in the traditional methods. It is realized that even for traditional type of construction, a considerable amount of planned effort is necessary for co-ordination of the Builder, Engineer, Architect and Technologist who advise on the design of services.

Where the labour wages are high or where the proportion of labour to the total cost of building is on the large side, mass production will effect certain amount of economy in production. The evolution of industrialisation is taking place in the following directions :—

- (a) Production of complete houses of light weight construction in factories. This has not yet proved economical even in developed countries.
- (b) Evolution of a large proportion of building components either in factory and at building sites.
- (c) Evolution of new materials for use which will effect economy and reduction in weight.
- (d) Rational organisation and mechanisation on site and site building work.

IV. Standardisation—Typification—Simplification

Manufacture of building components under Industrial condition is possible when the components are standardized to encourage mass production. In order to co-ordinate the relation of the various components required in Building, the modular co-ordination was introduced. The basic module is 4". The nominal, constructional and actual dimensions have to be carefully evolved consistent with the tolerance limits which in their turn depend on the efficiency of production of such elements, materials of construction and ease of erection.

Considerable amount of work is required to standardize the products keeping these factors in view. Modular co-ordination will lead to (1) economy due to mass production (2) economy in labour for handling and erection due to productivity of worker increasing due to repetitive use.

There is an apprehension in the minds of the architects that standardization will lead to monotony. With the principles of modular co-ordination, it is possible to adopt standardization without losing the aesthetic appearance of the building and variety can be introduced avoiding monotony.

V. Integration of Works Procedure

So far as the manufacture of building materials is concerned, industrialisation has progressed because of the nature of production of materials is allied to factory production. For example, production of steel and cement have reached a very high degree of efficiency in factory production.

Building construction consists, however, of diverse activities. It consists of four main stages—initiation of project, planning & designing, preparation and organization of production, and execution or erection. If we have to industrialise the building process, we must apply our mind as to how best to integrate the four stages. Various solutions to achieve this aim can be tried.

In France, a building project is open for competition in which the designer and the contractor are jointly responsible for the competitive design as well as the quality of the work and its final cost. This has achieved a close association of conception and erection of the building project without losing the benefit of competitive tenders.

In U.S.S.R. due to heavy prefabrication, the manufacture of heavy components and erection is done under one authority, and there is complete co-ordination between the design and execution authorities. This is possible because both the operations are controlled by the State.

Another method tried in U.K. and some Eastern European countries is to select some well known firms of contractors, and associate them in the project right from the design stage.

Another alternative would be to call tenders on the basis of traditional methods of construction and extend the same contract for the prefabricated structures. A proper control on cost is kept during the project on the basis of prefabrication and reduction on cost effected on the basis of actual experience.

It is necessary to consider all these approaches for our conditions to evolve a suitable method to achieve this integration. Usually the small size contractors' firms would predominate in traditional type of construction and only big size firms or State-owned enterprises can venture in the new concepts of prefabricated structures. As conditions for industrialisation became more favourable, the specialised firms would more and more compete with the small firms to quote and successfully carry out project applying industrialisation. In East European countries, including U.S.S.R. the industrialisation in building projects has been successfully achieved by State-owned enterprises.

On the basis of this experience, we should also consider planning of our housing projects on the basis of slowly converting our building operations from a purely traditional type of construction to a more rational and organized pattern of housing construction at the building sites or in factories suitably located. This may be done by encouraging large sized or create State-owned enterprises to undertake such projects. This will ultimately effect a saving of 10% to 15% in cost apart from the other advantages of industrialisation, such as conservation of materials and skilled labour and quality control.

VI. Degree of Prefabrication and Mechanisation

The prefabrication has been evolved in two ways. In East Europe, where the building industry is controlled by the State, heavy prefabrication is developed due to planned availability of heavy machinery and equipment for handling and erection. In mid European countries the trend is towards lighter prefabrication involving use of lighter building components being used due to limitation of handling and erection equipment. India may have to adopt the policy of mid European countries and adopt lighter prefabrication in view

of the limitations of equipment and machinery, in the initial stages. As prefabrication develops as an economic necessity, heavier prefabrication can be adopted after the heavy equipment required is manufactured in India.

VII. Research—Its Scope and Applications in Building Industry.

(a) Research in material technology :

This research will be encouraged by manufacturing firms as production of building materials is more in keeping with the concept of industrialisation. The future research in this hand will fall into following categories :—

- (i) finding new materials to substitute traditional materials in short supply;
- (ii) to evolve improved methods of utilization of established materials to achieve control on quality, thus leading to conservation of these materials.

The future trend is to make the building materials as light as possible with a view to reducing dead load so that economy can be effected in structural design and also handling and erection.

(b) Research in strength and stability of structures :

This branch of research is not organised as at the present moment, the professional bodies responsible for structural design are not organised to effect such research. The State will have to establish Research Organizations to carry out research in this direction. The research has to be co-ordinated with the material research and new concepts in structures have to be evolved for the various materials accepted by the Building Industry. The trend will be to reduce the dead loads as far as possible and to see that the so called filler components like partition walls play a part structurally.

(c) Research in comforts of buildings :

This type of research devolves statutory obligations with regard to sanitation and public health, comforts, fire protection and noise prevention. This has to be carried out by State-owned research organisations and the private industry will not be vitally interested in these aspects except manufacture of materials.

(d) Research in user's requirements :

This research is again to be encouraged by the State research organisation. Formulation of requirements of the project, can effect maximum economy in the planning and designing stage. It is necessary to investigate the basic requirements and evolve plans to get the maximum coefficient of utility in our plans.

(e) Operational research :

This involves research in the methods of handling and erection in an organized manner in the production of a building. The productivity centres with the help of established contractors' firms should carry out research in this direction to improve the efficiency of actual building operations.

VIII. Future Trends

A study of technological development in other developed countries can give us an indication of the possible trends in our country.

Materials :

Bricks : Even bricks which is a basic building material where suitable clays and adequate fuel is available will be replaced by a superior quality of machine-made bricks to give more efficient joints and smaller dimensions ('Syracuse' Bricks). Perforated bricks will be more in demand specially for multi-storey buildings. (Ex- Italy).

Cement : More emphasis will be on production of hydro phobic cement to effect economy in use and encourage longer storage without deterioration.

Concrete : The emphasis of vibration will shift to use of surface active agents.

There will be trend of using lighter aggregates (bloating clay) to give concrete of normal strength for long span structures. High grade concrete will be increasingly used in conjunction with hard steel of high tensile strength. The technique of prestressing, ferro-cement and precasting will change the concepts of use of concrete in structures.

The use of polymers for giving surface finish to concrete will replace plasters.

Timber : There will be more emphasis on stabilisation of timber by seasoning and treatment and use of timber species not commonly used have to be encouraged. Laminated factory made products, such as flush doors will replace solid timber construction. Use of polymers for joinery and special metal connectors will be common.

Steel : The normal steel will be gradually replaced by high tensile steel. Use of deformed bars will be more popular.

New materials like plastics specially for items of finishing and fixtures and fittings will be more and more popular.

Structural design : The concept of 'skeleton' frame will give place to concept of space frames in multi-storey buildings thus making full use structurally of partition walls, suitably reinforced and suitably shaped to give structural rigidity. For buildings up to 3-4 storey, the brick masonry walls not exceeding 9" thick will be used without framed structure with proper jointing and placed to withstand the wind pressure. (Syracuse Bricks Project II, 99, Home & Housing Finance Agency).

Use of composite construction with as light materials as possible will be used in multi-storey buildings to reduce dead weight. Use of precast products will be more popular.

Planning : Labour saving devices and comfort producing equipment will predominate planning. Sizes of rooms will become less and less. Space utilisation vertically and horizontally will be basic concept in these dimensions.

VI
COMMUNITY PLANNING

Housing in Urban India For The Lowest Income Groups : The Environmental Approach***

By

Dr. K. C. Roser†

1. INTRODUCTION

1.1 If a national policy for the orderly development of Indian cities is to be more than a lofty irrelevance, three ingredients in its formulation are essential: realism, bold imagination and the technical and administrative willingness to experiment and to improvise. India's urban crisis is probably unparalleled in history. With scarcely any exception, every single urban area in the country is presently faced with a dismal catalogue of deficit which extends over the whole gamut of urban living. And, if this is the present situation, the future prospect appears bleak in the extreme.

1.2 The present urban population is likely to increase by 50 per cent, or some 40 millions, in the next twenty years or so by *natural increase in urban areas alone*. To this immense figure must be added the necessary additional allowance for expected urban growth through rural/urban migration over this period. The present figure of 80 million urban dwellers will therefore also certainly be doubled within the space of a single generation.

1.3 The task of providing shelter, transportation, water, sewerage and drainage, education, health, and other essential urban services for urban populations of this magnitude appears well-nigh insurmountable. In most of these fields there is an obvious need for fresh thinking, for new ideas, and for the intensive application both of a very high level of technical skill and also of the maximum degree of human inventiveness and ingenuity.

2. THE PROBLEM OF URBAN SHELTER

2.1 The failure to provide adequate and sanitary housing on a scale which even remotely approaches the need is visible throughout the towns and cities of India. Everywhere the housing picture is one of deficit and deterioration. More than half of all urban households in India occupy only a single room (with an average occupancy per room of 4.35 persons). "Nearly a fifth of all dwellings contained less than 100s ft. (9.3 sq. m.) of living area. Well over half contained less than 200 sq. ft. (18.6 sq. m) and three-fourths contained less than 300 sq. ft. (27.9 sq. m)."⁽¹⁾

2.2 Apart from their small size and high degree of overcrowding, over a third of all housing units in *urban areas* had their walls made of mud, bamboo, or similar materials. Everywhere there is congestion, insanitation, inadequate water supply, and extensive proliferation of squalid and cramped hutments. In most of the large cities there is a great deal of illegal occupation and squatting on private lands, on municipal garbage dumps, on any vacant building sites, or in miserable improvised shelters on public pavements. The

urban environment in contemporary India is probably deteriorating faster through the sheer inadequacy of housing, with its attendant evils, than through any other single cause.

2.3 The scale of population growth in India's towns and cities has long outstripped the rate of development of a satisfactory urban environment. The growing crisis of urban India is nowhere more apparent than in the field of housing. The housing shortage in urban areas has now reached staggering proportions and grows annually worse as the rate of provision of new and satisfactory housing lags far behind the rate of population increase.

2.4 The community as a whole cannot allocate to housing the resources that would be required to develop a public housing programme on a scale commensurate with the need. The great majority of families in the towns and cities of India are too poor to be able without public assistance, to own or rent housing of even minimum standards of habitability and sanitation. Traditional methods of thinking about housing policies and housing programmes in Indian urban areas have conspicuously failed to halt the present trends of deterioration in housing provision let alone to produce a marked improvement in this critical situation. Therefore the need for a radical re-appraisal of techniques and standards—and of present ideas and attitudes—in the field of urban housing in India is essential.

2.5 Analyses and discussions of the housing problem in urban India tend quickly to become dominated by architectural considerations of housing types and of construction and financing techniques in relation to individual housing units. And quickly the familiar dichotomy emerges between, on the one hand, those who argue the need for new construction techniques and new designs and standards—with emphasis on "core housing", partial houses of varying stages of completion, prefabricated and mass-produced houses, self-help, housing, and so forth, and those, on the other hand, who argue that "sub-standard housing is but a step toward slums", and that public resources should only be expended on public housing which meets 'basic standards' of space, sanitation and construction technique.

The latter, dominant, school of thought in India is well illustrated by the following extract from editorial entitled "Economics vs. Basic Planning Standards" in the Journal of the Indian Institute of Town Planning :

"The basic standards in housing and planning are arrived at not only from considerations of cost but from considerations of creating the desirable sociological and physical environ-

† Consultant, Calcutta Metropolitan Planning Organisation.

1. Report on India's Urban Housing, Government of India, July, 1965, Part II, P. 30.

ment necessary for the healthy growth of the individuals and the community. Such standards have been established by various committees and technical missions. The Environmental Hygiene Committee recommended a two-roomed house as the minimum for a family. The U.N. Technical Mission on Housing, the later Seminar and Conference on Housing and Town Planning and other reports published by national and international agencies all recommend the two-room house with adequate sanitary and other facilities as the barest minimum if the normal aspiration of healthy living is to be achieved

"These standards cannot be lowered, whatever be the community, whatever, be its location and whatever be the economic situation in the country. Sub-standard housing is but a step towards slums. Deliberate sub-standard housing will defeat the very purpose of housing as it will lead to the creation of future slums; the basic standards must be adhered to at all costs."(*)

This rigidity of thought has frustrated the development of the practical, imaginative, relevant housing programmes required by the harsh realities of the contemporary housing crisis in India's towns and cities.

2.6 The basic argument here presented is that both the above approaches are inadequate and unrealistic in the face of the contemporary facts of the urban housing situation in India. Fundamentally the real problem is not the individual housing unit no matter how bad, but the *environmental context* in which this housing occurs. The only "basic standards" which can be significantly and realistically sought and maintained in Indian towns and cities are not those of the single house but those of public services and environmental sanitation. Though the search for architectural and structural advances in low-income housing must obviously continue, the fact remains that the cheapest form of shelter at the minimum standards of acceptability, has already been discovered by the slum dwellers themselves: the hut.

2.7 The essential point is to recognise that public attention must be directed in practice not at the quality of housing as such but at improving the quality of the environment—the uncollected human wastes, the pestilential open drains and ponds, the inadequate and polluted water supply, the dark unlit lanes, the litter and filth, the absence of essential community facilities in education and health and recreation—and the resultant wide spread prevalence of apathy, hopelessness, and despair which saps the will to develop and to participate in a vigorous, determined programme of community effort.

Improvement and control of the environmental context can render tolerable types and standards of housing that would otherwise be totally intolerable in the densely-populated congested conditions of present day urban India. It has to be recognised that this environmental regulation is the only feasible method of securing a significant improvement in the standards of living of the great majority of the present and future inhabitants (at least in the 'foreseeable future') of India's urban areas.

3. THE HOUSING GAP

3.1 The desirability of new and realistic approaches in the field of urban housing is fully apparent from simple statistics indicating the immense gap that presently exists between need and provision. The recently-published *Report on India's Urban Housing*, prepared at the request of the Government of India by a team of experts sponsored by the Ford Foundation, estimated that 12 million housing units would be needed to accommodate the population increase alone in urban areas over the fifteen years from 1961 plus at least that number again to reduce existing over-crowding, to replace existing makeshift and insanitary hutment built of temporary materials, and to allow for the replacement of deteriorating materials, and to allow for the replacement of deteriorating dwellings. "All in all, it is estimated that something like 25 million new dwelling units should be provided during the period 1961-76, requiring an annual rate of production of 1.7 million new dwellings. Against this, only 200,000 new dwellings are being added yearly."

3.2 Of this far from adequate annual production of permanent housing units, only about 14 per cent over the last ten years has come within the category of 'social housing'—that is, Government-sponsored programmes of subsidized housing intended for industrial workers, slum clearance, and the lowest income groups generally. By far the great majority of new housing—annually is built either by private enterprise for the middle and upper income groups, or by Government directly for its own employees—with again the predominant emphasis on the middle and upper grades of service.

3.3 Three-quarters of all urban households have incomes below the stipulated limit for the Government subsidized slum clearance programme and, in fact, 90 per cent of households are sufficiently poor to come within the limits of eligibility for the public social housing programmes designed specifically to benefit "the economically weaker sections of the community". Yet in practice the output of public housing in this category is so small that few families in India's towns and cities actually receive this benefit. The resources, given the huge subsidies that are required, are simply not available to make any large-scale increase in public housing feasible within the immediate future. For the great bulk of India's urban families there is no present alternative to the disease-ridden tenement slum or the shanty-towns of congested huts in environmental conditions of appalling insanitation and squalor.

3.4 Nowhere in India is this problem of housing provision more strikingly illustrated than in the case of Calcutta. In 1961, the population of the Calcutta Metropolitan District (covering 1270 sq. km (490 square miles) and containing 35 separate municipal governments) was 6.7 million. Demographic projections prepared by Calcutta Metropolitan Planning Organisation (CMPO) indicate that this population will increase, through a combination of natural increase and in-migration, to about 8.6 million by 1971, 10.9 million by 1981, and well over 12 million by 1986. That is, in twenty-five years the net increase alone will be in the region of 5 million persons.

The present rate of population expansion in the Metropolitan District is about 200,000 addi-

tional inhabitants annually. At the existing average occupancy of 5.1 persons per housing unit, a total of some 40,000 housing units would be needed annually in the Calcutta Metropolitan District just to keep pace with population growth.

The reduction of overcrowding in Calcutta, the clearance and replacement of all existing huts with walls and roofs of mud, bamboo, and grass thatching (this type of housing accounted for 24 per cent of the total housing in Calcutta City in 1961, and 40 per cent of the total housing in the other municipalities of the Metropolitan District) and the replacement of congested, insanitary, and dilapidated structures built of 'permanent' materials—all desirable replacement of the existing housing stock would require at least another 750,000 housing units over the twenty-five year period from 1961.

When these requirements are added together it can be seen that Metropolitan Calcutta alone requires a total of 1,780,000 housing units by 1986—or well in excess of the total existing housing stock in 1961. This would mean an addition of over 80,000 houses annually from 1966 onwards.

The current output of the building industry in the Calcutta Metropolitan District has been estimated at between 6000 and 9000 units annually. The State Government's estimate of the total of public housing units of all types that it hopes to complete during the whole period of the Fourth Five Year Plan commencing in 1966 is 27,000 over the full five-year period—that is, less than the number of dwelling units required for a single year to meet population increase alone.

The families not now housed in these *pucca* (or permanent) housing units do not of course go homeless. They either have to accept increasingly worse conditions of overcrowding in existing houses, or they have to build or rent new *kuchha* huts (that is, huts constructed of building materials, such as mud, grass, thatch, etc.) usually compact and congested slum settlements of one-storey huts known in Calcutta as 'bustees'.

In Calcutta City alone more than 700,000 people live in these bustees in conditions unfit for human habitation. The 1961 population of Calcutta City was 2.9 million, and hence the bustees of the city alone, apart from the many multi-storeyed tenement slums, account for no less than one-quarter of the total city population. Most bustees have no sewer connections and depend on the manual collection and disposal of night-soil by municipally-employed sweepers. The drainage and water-supply is everywhere grossly inadequate, and most bustees are continuously flooded during heavy monsoon rains—with consequent pollution of ponds and open drains through floating faecal materials. All bustees have inadequate education and recreation facilities. All are breeding grounds for cholera and other gastro-intestinal diseases, and for smallpox and tuberculosis. Bustees occur throughout the urban areas of the Metropolitan District.

The ultimate aim, it is generally agreed, is total clearance of the bustees and the conversion of the land they occupy to higher economic uses. But to accomplish this requires the provision of alternative housing for this immense population of

bustee dwellers. In Calcutta City alone, an estimated 190,000 housing units would be required: and this alone would require a massive housing programme with an enormous investment in financial subsidies to bridge the gap between the economic rent of slum clearance housing and the rent that the bustee-dweller can afford out of his severely limited monthly income. The resources for such a programme are simply not available—apart altogether from the capability of construction industry, and of the administrative system, to cope with such a major effort of public housing.

During the first three Five-Year Plans (that is, over the fifteen years period to 1966) the total number of rehousing units constructed in Calcutta under the slum clearance programmes amounted to only 9000 units. It has been estimated that at this rate it would take approximately 100 years (or twenty more Five Year Plans) to clear the existing bustees of Calcutta City alone. Certainly slum clearance programmes can be substantially accelerated with more modern techniques of construction and with a more efficient executive organisation. But the conclusion nevertheless is inescapable that no prospect presently exists for the development of a clearance programme on a scale commensurate with the bustee problem. The great majority of bustee dwellers will spend the rest of their lives in the bustees in which they now live.

4. THE ENVIRONMENTAL APPROACH TO LOW INCOME HOUSING

4.1 These facts and conclusions are of course neither new or surprising to all who are familiar with the housing situation in India's cities. But all too often the next step that of developing realistic proposals to deal with this situation—is not made. Perhaps because these very proposals seem to imply a recognition of defeat and a failing of national purpose people are reluctant to admit what they know to be unquestionably true; that as always, statements of ideals must be tempered by a practical recognition of what is possible.

4.2 It is not however so much a question of lowering housing standards as of raising the current environmental standards in terms of sanitation, public services, and community facilities.

4.3 While continuing efforts must be made to develop housing policies and programmes related to the needs of the various income groups within the population, recognition must be given to a new and broader approach to housing for lowest income people in terms of the following series of policy statements:

- (i) Existing housing stock even in slums must be preserved wherever possible so that new housing results in the maximum net gain.
- (ii) Major and rapid improvements in the living conditions of slum dwellers can be achieved through well-organised programmes of environmental improvements without replacing existing housing units.
- (iii) Programmes for the establishment of viable settlements housed in non-permanent, very cheaply-constructed shelter but with adequate environmental facilities must be undertaken on a sufficiently large scale to provide a real alternative to the proliferating shanty-slum in urban areas.

- (iv) The achievement of acceptable environmental standards (to render even slum housing tolerable) depends essentially on the successful introduction of imaginative and efficient management services and on associated programmes of community development based on voluntary effort.

4.4 The elaboration of this approach into full-scale programmes for implementation can be illustrated by the brief description of two programmes prepared by the Calcutta Metropolitan Planning Organisation (CMPO). The first—a *massive bustee improvement programme* covering over 500,000 bustee-dwellers within a five year period—is now ready for implementation, subject to the enactment by the West Bengal Legislative Assembly of the new Slum Improvement Bill (already drafted and introduced) providing the powers of land acquisition and subsequent control that are required. This programme is the first major step in the introduction of this environmental approach to housing for the lowest income groups in the Metropolitan District. The second programme is a logical extension of the above bustee improvement techniques into the field of providing for the creation of new 'model bustees' or *temporary housing settlements* with environmental standards at least as good as those designed and recommended for the bustee improvement programme.

The purpose of the first programme is to raise the environmental standards of existing slums and thus to render life in bustees—which is inevitable—tolerable to the individual and acceptable, in terms of public health, to the community. The purpose of the second programme is to prevent the sporadic haphazard, insanitary development of new slums and bustees—which otherwise is inevitable—through the creation of a feasible alternative, in rational locations, and with adequate prior preparation in terms of sanitation, public utilities and social services.

4.4.1 The Bustee Improvement Programme

4.4.1.1 Detailed engineering and sociological studies carried out by CMPO in bustees selected as typical of varying, specified conditions in Calcutta clearly indicated the physical practicability of introducing into these areas basic amenities considered minimum for a healthy and habitable environment. Financing studies revealed that, at the minimum standards recommended, the costs per capita were surprisingly low and that a very large-scale programme within the span of five or six years was financially feasible. Legal studies of the present complex structure of land ownership and of tenancy and occupancy rights within bustee holdings concluded that the implementation of a major programme of physical and social improvement was not practicable without the public acquisition of the lands on which the bustees stand; fragmented private ownership and conflicting interests were the main reasons why such a programme of environmental sanitation had not been implemented long ago in these bustee areas. There were other powerful reasons to support this bold and drastic decision to acquire the bustee lands; not the least being that it is the declared intention of Government ultimately to clear and redevelop these lands (in many cases to provide space for essential community facilities, such as

schools, hospitals, parks—all the subject of immense deficits in the present city).

4.4.1.2 Consequently a programme was developed with the following strategy: (1) survey and acquisition of all bustee lands according to a phased programme over a ten-year period; (2) immediate implementation of a massive bustee improvement programme in selected locations in Calcutta and Howrah (the other major city within the Metropolitan District)—and covering not less than 500,000, or over 50 per cent of the total bustee population in these two cities, within the first five years: (3) the concentration of existing and future slum clearance projects in the central city areas where the effects will be most beneficial economically, and the gradual but systematic preparation of clearance and redevelopment programmes for all bustee land eventually, though the whole purpose of this specific approach is to recognise that this latter objective will take many decades for complete achievement.

4.4.1.3 The basic amenities to be provided in the bustee improvement programme are as follows:

- (i) *A Water System* to provide an adequate supply of clean and safe water for the daily needs of bustee residents. It is proposed that tubewells be used to provide water. The typical system includes tubewell(s); pump house with pumping machinery; chlorination; reservoirs; the necessary distribution system and other appurtenances.
- (ii) *Community Water Taps and Baths*. One water tap for every 100 persons and two baths for every 100 persons are proposed. They will be located in such a way as to be convenient to the residents. The designs are simple, to minimise maintenance. Privacy in the community baths is afforded. It is expected that the bath taps will be used also for water supply, and thus the effective water tap standard will be one water point per 33 persons (or approximately 7 families).
- (iii) *Sanitary Sewerage System*. Perhaps the greatest difficulty in most bustees is the lack of sanitary facilities. A sanitary sewerage system, including necessary sewers and appurtenances, is proposed.
- (iv) *Sanitary Latrines* at a standard of four per 100 people, will provide approximately one sanitary latrine for each hut. Two or four latrines will be placed in appropriate structures so located that maximum accessibility will be afforded. All service privies will be demolished.
- (v) *Storm Drainage System*. Inadequate or non-existent storm drainage facilities presently result in washout of structures, flooding, and generally unsafe and unsanitary conditions, especially during the monsoon periods. These deficiencies will be corrected by the proposed storm drainage system, which will include necessary inlets.
- (vi) *Pavements* will supplement the storm drainage system and provide safe and clean paths where they do not presently exist.

- (vii) **Lighting in the crowded bustees is essential for the safety and convenience of the residents.** Street lighting is proposed at regular intervals and at crucial locations where walkways cross or turn.
- (viii) **Treatment of Tanks.** Tanks are found in almost all bustees and at present constitute health hazard in nearly all cases. It is proposed that they be treated in a variety of ways, the method selected depending upon the conditions prevailing in individual bustees.

Wherever possible tanks will be preserved and made sanitary to eliminate whatever health hazards remain after sewerage has been provided and sanitary privies have been removed. They will also be improved by planting and other means to refresh and enliven the physical environment and add to their attractiveness as centres of community activity. In bustees in which additional land is needed urgently for community facilities tanks will be cleaned and improved over part of their area and the remaining areas will be filled to provide the necessary space. These two alternative methods are the ones to be preferred, since they preserve the usefulness of the tanks for bathing, retain them as cool retreats against the summer heat, and enhance their aesthetic value. As a third alternative, where it is essential for health purposes or to provide additional buildable space, tanks will be completely filled.

4.4.1.4 The estimated per capita cost of these public works is Rs. 187. The total cost of the physical improvement programme covering the population of 537,000 in the period 1966-71 has been calculated at Rs. 10 crores. This is the cost of the physical improvements alone. Additional costs include amortisation for land acquisition; payments for the few huts that have to be demolished or moved to execute engineering works; the cost of the full and vital management programme in acquired and improved bustees. These would bring the total cost to Rs. 14.7 crores—well within the range of financial feasibility given both the present availability of resources and also the importance and urgency of this programme designed to bring rapid relief for widespread human misery in the bustees—and fundamental benefit to the community as a whole.

4.4.1.5 It is one thing to achieve the installation in bustees of the basic physical amenities for a civilised urban existence; it is another to ensure that the new facilities provided are properly used and properly maintained by the bustee dweller. The success of this programme depends to an important extent on the response and cooperation of individual bustee dweller—and particularly on the leaders of voluntary societies and associations within bustees.

4.4.1.6 It seems reasonable to hope that this massive programme of environmental improvement in the slums of Calcutta will form one step in a total and sustained effort to transform the attitudes of the bustee dweller and to modernise his present habits of domestic hygiene and refuse disposal. This larger achievement is possible but it requires

vigorous leadership and sensible organisation. It requires voluntary participation as much as governmental initiative. To achieve this and thus to produce a climate in which environmental improvements can be fully effective in raising living standards will be the purpose of a complementary social action programme in the improved bustees.

4.4.1.7 The objectives of this community development programme can be summarised as follows: (1) to secure the willing consent, cooperation, and active participation of the bustee-dwellers themselves in the implementation of the environmental improvement programme; (2) to achieve, through individual response and collective responsibility, the most effective use and maintenance of the physical improvements installed; (3) to associate physical improvements with an intensive effort of health education (including a campaign for mass immunisation); (4) to organise and encourage through voluntary leadership a concerted effort toward community welfare and development within the improved bustees. A detailed organisation to achieve these objectives—based on the establishment of community centres with community councils of voluntary leaders and small professional team or trained specialists—is an essential ingredient of the full programme of bustee improvement now about to be implemented in Calcutta on a massive scale.

4.4.2 *The Programme for Temporary Housing Settlements*

4.4.2.1 The improvement of the living conditions in existing slums is however only part of the problem. The rapid increase of the urban population year by year—without a corresponding increase in the stock of *pucca* housing means that new slums are continually being created, and old slums are continually expanding wherever any vacant space exists along their borders. Within the next twenty years, according to population projections prepared by CMPO, the total population of the Calcutta Metropolitan District will expand by about 5 million persons. Unless action is taken now, probably well over a million of these will have no housing alternative but the bustee shanty-town in conditions of extreme environmental squalor. New proliferating bustees throughout the Metropolitan District cannot be prevented by “land-use controls” and similar negative action. It is clear that adequate *pucca* housing for the lowest income group on a sufficient scale is beyond the resources of the community. But it is also clear that positive development action can be taken to avoid or reduce the worst evils of haphazard bustee growth in unsuitable locations, with inadequate public utilities and facilities, and with consequent insanitary conditions on a scale massive enough to threaten the health and well-being of the whole community.

4.4.2.2 To understand this problem it is necessary to re-emphasise two points which are both obvious but commonly ignored: first, bustees exist because they provide housing and fulfil a need created by the tremendous housing shortage and rapid population growth of Metropolitan Calcutta (as indeed of all other Indian towns and cities); secondly this ‘housing gap’ will continue into the foreseeable future and thus new slums and bustees will continue to be created to meet the need of the lowest income groups. The essence of the argument is that bustees as forms of unorganised self-help housing, are inevitable.

4.4.2.3 The only practical solution to this problem appears to lie not in a public *housing* programme (of whatever nature of house type and construction) but rather in a planned *environment* programme to provide the basis for tolerable living standards (whatever the nature of the house or hut). Fundamentally this means the development of temporary housing settlements, with the occupants or government in practice building minimal shelter units on lands developed by Government, on a scale never before considered in India.

This second programme, unlike that described above, is very much in the early stages of discussion and elaboration in Calcutta. The approach suggested is an extension into the field of future urban growth of the ideas developed above to deal with the existing conditions. This fundamentally is a 'bustee prevention' programme rather than a 'bustee improvement' programme.

4.4.2.4 Open-plot development is of course not new in India or elsewhere. It has not been popular or strikingly successful in any Indian city. The reasons for this are many: the idea in most cases has been even among its supporters only half-heartedly pursued with a kind of unconscious refusal to accept that this method can play a *major* part in the development of the modern Indian city; there is the familiar obsession with the individual plot, the individual house, the individual family—and with interminable discussions on building materials; there is a tendency to relegate this open-plot development to 'cheap' lands in remote locations on the fringe of urban areas, ignoring the urgent employment considerations which dictate the housing location decisions for the lowest income groups for which the open-plot development is mainly being undertaken.

4.4.2.5 If uncontrolled bustees are to be prevented, alternative settlement arrangements must be made for prospective bustee-dwellers in or near the places where they must live to survive, with housing types and rents they can afford, with an environment that forms a *desirable*—in realistic and not idealistic terms alternative to present bustee living conditions.

The experimental 'temporary housing settlement' now being examined by CMPO is an attempt to meet this need. Analyses based on sociological studies of existing bustees, and on studies of engineering costs for environmental sanitation at the level of that proposed in the bustee improvement programme, suggest that the most efficient size for such a settlement is around 6000 persons on 8 to 10 hectares (20 to 25 acres). Trial development plans for urban settlements in varying locations are now in process of preparation. These

plans include provision for community facilities (an essential ingredient in the environmental approach) and for a management and community development organisation—at a relevant and reproducible scale on each site.

4.4.2.6 The actual methods of housing construction are a relatively minor problem: the existing bustee hut already represents a sort of acceptable minimum. Equally the present bustee organisation of ownership and tenancy, with entrepreneur hut-owners constructing large huts divided into many rooms for rent to tenants, can be utilised and developed as the essential techniques of financing (through private investment in the huts) and of management. The role of Government can be limited with advantage to site selection for the settlements, land acquisition, land planning and land development with basic utilities, the provision of community facilities, and to an estate management and community development programme. Clearly there is a rich field for imaginative discussion here, and a great need for precise, detailed, realistic thinking.

4.4.2.7 If this type of 'settlement housing' with emphasis on the environment and on the community rather than on the individual housing unit, is to be of any real significance in Calcutta's immense housing problem, it must be undertaken on a scale that is realistic in relation to need. This means no less than providing shelter in this manner for something like a million people in the Metropolitan District within the next ten years. At an approximate scale for each settlement of 6000-8000 persons, the requirement would thus be for about 150 such temporary housing settlements. Experiments, both on the drawing board and on the ground, with the design and organisation and financing of the single settlement must be undertaken with full recognition of this scale of need. The fundamental decision must be to design and organise *complete settlements*—even of temporary housing the controlled self-help type—rather than to continue the present obsession with the design and financing of the individual structure.

5. There is a very clear need to match planning and architectural ingenuity with an accurate appraisal of the way of life of the lowest income groups in India's urban areas. It is perhaps worth pointing out, since this point is so often ignored by planners, that many of the apparent problems—in construction, financing, social arrangements—have of necessity been already solved by the slum dwellers themselves, with their backs to the wall, of harsh economic reality. New solutions must have a similar relevance if they are to produce a significant improvement in living conditions.

Neighbourhood Planning and Its Relation to Housing***

By

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1. CONCEPTUAL BACKGROUND

1.1 Neighbourhood Planning has been generally accepted as a basis for the development and re-development of residential areas in towns and cities. The idea underlying the neighbourhood is to conceive the city as composed of a number of sizeable units, each unit being a comprehensible entity by itself, which will allow a full growth of community spirit fostered by sustained neighbourly social interactions and at the same time will function as a single part of a greater whole. Used in the physical sense, a neighbourhood unit is the minimum geographic and planning unit, which contains the basic utilities, services and community facilities, required in common by the residents, and which provides a physical form suitable for the full development of individual life, family life and community life.

1.2 Though the neighbourhood unit has its genesis as a physical concept, it has social implications also and is recognised as a social entity, which aims at social stability and social cohesion amongst the residents, by promoting their conscious participation in community activities and also by their sharing community facilities and other forms of urban infra-structures. It is said that the ideal neighbourhood unit is one which is "socially balanced" and in which positive encouragement is given to the elimination of racial, religious occupational, and economic segregation. The neighbourhood unit is a community which has a certain degree of social heterogeneity. However, the common use of schools, shopping facilities, health centres, parks and play grounds, community centres and the like brings about some social cohesion among the residents. At the same time, it is planned in a manner to be dependent of the larger urban centre for its major shopping requirements, High Schools and other higher educational institutions, major cultural facilities and so forth. In brief, each neighbourhood unit will be, in terms of socio-economic differentials, a microcosm of the city as a whole.

2. GENESIS OF THE NEIGHBOURHOOD IDEA

The principle of neighbourhood planning was developed originally by Clarence Arthur Perry, for the "Regional Plan of New York and its Environs" and published in 1939 in his book "Housing for the Machine Age". Perry visualised a residential neighbourhood as a unit area, limited in size and population, with a distinct physical boundary so that it could be served by an elementary school. It should also have shops for day-to-day shopping, parks and open spaces, institutional sites and a circulation system (traffic and transportation network for the movement of people and goods) which

does not permit through traffic to enter the neighbourhood unit. The neighbourhood unit theory thus puts forward six basic principles: (a) size, (b) boundaries, (c) open spaces, (d) institutional sites, (e) local shops and (f) internal road system.

3. SIZE OF THE NEIGHBOURHOOD UNIT

3.1 The size of a neighbourhood unit is governed by (a) the area required for all its land use components; (b) the population required to support the neighbourhood services and facilities; (c) accessibility to such facilities and (d) the existence of suitable physical boundaries. The neighbourhood unit must be large enough to support the necessary community facilities like the primary school, the neighbourhood shopping centre, the health centre, the park etc., and at the same time not so large as to lose the advantages of a compact and integrated community life. The area of the neighbourhood unit may, therefore, range from 50 to 250 acres and may accommodate a population of 2000 to 10,000 with a desirable optimum population size of 5000.

3.2 When Perry developed his ideas about the neighbourhood as an appropriate form for urban living and as an elementary building block for the expansion of urban areas, he seized upon the Elementary School as the key element in neighbourhood planning. Perry had to consider how large this elementary community, the neighbourhood, should be and the public school determined for him the appropriate size of a neighbourhood. The area and population which can be served efficiently and economically by an elementary school, which is situated so as not to be farther than a quarter to half a mile from the farthest dwelling formed a reasonable basis for determining the size of a neighbourhood unit.

3.3 Perry visualised that the neighbourhood unit must have well defined and functional boundaries formed by a major road or a railway or a canal or by distinct topographic barriers like hills and dales, streams, etc. to give an identity to the neighbourhood unit.

4. COMMUNITY FACILITIES IN A NEIGHBOURHOOD

4.1 The basic urban facilities which cannot be provided to individual families have to be provided in the neighbourhood, so that it may be self-contained. The following facilities are usually provided:—

- (a) *Education*: Nursery schools, elementary schools, adult education facilities.

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- (b) *Shopping*: Convenience shops, neighbourhood shops, food and provision stores, miscellaneous services like laundries, bakeries, etc.
- (c) *Health*: Health Centres, clinics, child welfare and family planning centres.
- (d) *Outdoor recreation*: Neighbourhood parks, play grounds, open spaces, swimming pools, etc.
- (e) *Social and cultural*: Community centres, clubs, libraries, places of worship, entertainment facilities, etc.

4.2 In addition, certain major urban facilities should be provided for a group of neighbourhoods with a view to establishing an inter-relationship between the various neighbourhood units within the overall framework of the structure and form of the city. The provisions usually made to achieve this object are schools for secondary education, special or infrequent shopping, large hospitals, city-parks, large play grounds and stadia training and employment centres and the like which will serve more than one neighbourhood unit.

5. CIRCULATION PATTERN

5.1 The circulation pattern of a neighbourhood unit must be designed so as to fit into the overall road pattern of the city and the region. The neighbourhood road system should be such that no road within the neighbourhood can be used as a short-cut between two points outside it. Moreover, the circulation system should give safe and easy access to residences, shops, schools, public buildings, and recreational facilities. The peace and quiet of the neighbourhood must be preserved by avoiding traffic hazards, noise glare, fumes etc.

5.2 The following widths are recommended for different types of roads in a neighbourhood unit.

Type of Road	Minimum paved width
Residential service streets	2 traffic lanes or 7.92 m (26 ft.)
Neighbourhood feeder streets	3 traffic lanes or 10.97 m (36 ft.)
Minor traffic roads	4 traffic lanes or 13.41 m (44 ft.)
Major traffic arteries	Width varies.

5.3 The mass-transit system of the city should be so planned that the buses, street cars, suburban trains and the like run on the major traffic arteries, minor traffic roads and if necessary on feeder streets but never on the residential access streets, as otherwise the peace in the neighbourhood will be disturbed. Special attention should be paid to silence zones, safety zones, etc. Culs-de-sac, loop streets and foot-paths should be provided liberally, in preference to through streets. Express cycle tracks may be laid out to link residential areas with community facilities and to connect the neighbourhood units with one another so that the cyclists may be free from the hazards of vehicular traffic.

6. OPPOSITION TO NEIGHBOURHOOD PLANNING

6.1 The idea that a residential district should be planned as a physical and social entity and a self-

contained community with a definite boundary and certain essential components has generally been accepted in town planning practice. For the past few years, however, the validity of neighbourhood planning idea is being questioned by quite a few planners and sociologists. L. E. White in his book, "Community or Chaos?" published in 1950 states that the neighbourhood unit theory is "a conscious endeavour to recover much that was worthwhile in the old village tradition and translate into modern urban terms... In contrast with one-class estate, there would be a wise mingling of people to produce a socially balanced community with diversity of occupations and income-levels". But sociologists have challenged this view and they believe that all the contemporary techniques of physical planning including neighbourhood planning are used, consciously or unconsciously, to reinforce the 'natural urge' towards class or social segregation. Does this mean that the socially balanced and mixed neighbourhood will develop unnatural urges in its inhabitants?

6.2 Jevons and Madge in their research on neighbourhood and community concludes that if people with different attitudes, interests and values in life are mixed together, they will look around until they can move to a new place, where they will find 'their own kind'. Is the concept of socially balanced neighbourhood then based on an erroneous analysis of the social structure of human society? Is it better to look at neighbourhood unit planning from the sociological point of view rather than the ideological one?

6.3 Social scientists believe that for children in the local primary school the neighbourhood unit has a meaning. For housewives with young children, who do not have their own care, mobility is limited and therefore the neighbourhood has a significance. For old people who cannot move about much, the neighbourhood has a meaning. For the common man who has a vehicle or who uses public transport, the neighbourhood does not have such significance. The city centre provides to him bigger shops, a wider range of entertainment and a meeting place for special interest groups. Does this imply that the neighbourhood provides only a few amenities and that too for a few categories of people only? Can the Neighbourhood facilities and community activities face the challenge of the bigger and better ones of the city centre? Can we conclude that the neighbourhood unit tends towards an idealised form of village life? Some sociologists have gone to the extent of asserting that the neighbourhood idea is sentimental in concept, reactionary in effect and anti-urban in its approach. Can we take the adoption of and support to the neighbourhood planning as an instance of our society refusing to face up to the social structure of urban life? It is not easy to answer these basic questions unless we have enough experience in neighbourhood planning and tested its efficiency in different cities and under different situations.

6.4 No doubt, the avowed objective of neighbourhood planning as originally conceived by Perry and other protagonists of neighbourhood theory have not, in practice been fully realised. Nevertheless, it is generally recognised that neighbourhood planning has, in a limited manner and in specified aspects, given sustained social satisfactions to the residents of the neighbourhood.

6.5 Town and country planners also are gradually beginning to doubt the desirability of planning

urban areas on the basis of neighbourhood concept. Originally neighbourhood planning was welcomed as an improvement over the bye-law planning of housing estates. But it became very soon a 'cliche' or a formula and an excuse for not thinking in concrete and detailed terms as to what really constitutes the important function of a town. The neighbourhood unit became the 'rag-bag', where the Town Planner can put all the social functions, if he cannot find any other place to put them. In many cities neighbourhood centres have operated at the expense of the development of the town centre. It is feared that when the neighbourhood centres compete with the city centre, the people do not develop a strong and abiding loyalty to the city as a whole but tend to develop local interests and local loyalty. Another mistake that has often been committed is the adoption of low neighbourhood densities and use of extensive areas of land for residences, neighbourhood parks and shopping centres, community facilities and the like. Consequently a neighbourhood unit, often, lacks the pedestrian scale and is visually dull, drab and un-inspiring.

6.6 Here is then a major dilemma for the Town Planner, whose routine decisions require some assumption as to the proper organisation of residential areas in their structure and form. For the sake of convenience the planner has to conceive the city as comprising several self-contained units and at the same time, those planning units should not defeat the basic social, economic and physical objectives of town planning. Has the Town Planner succeeded in evolving such a planning unit?

6.7 Much of the controversy that has been raised regarding the soundness and efficacy of the neighbourhood planning idea seems to be rather premature, as there has been little opportunity to experiment with neighbourhood units and less time to observe results and to draw definite conclusions. Nowhere, except perhaps in some of the new towns being built in the U.K. and the suburban residential communities in Sweden, has the neighbourhood planning principle been tried fully. It may be too early to debate the merits and demerits of the neighbourhood unit principle. A few case-studies of neighbourhoods in British new towns have shown that (a) neighbourhood planning will succeed provided the planners use it carefully to further the democratic ideal of developing a heterogeneous and balanced community and to eliminate religious, racial, occupational economic and any other form of segregation; (b) the neighbourhood will be functionally efficient and aesthetically satisfying if it is designed properly so as to be compact, dense and pedestrian in scale and (c) the school, the community centre and the neighbourhood park and shopping centre are so located and designed as to forge a link between the inhabitants of the neighbourhood through their common usage.

7. NEIGHBOURHOOD PLANNING IN THE INDIAN CONTEXT

7.1 In India Town Planners took up the neighbourhood planning idea favourably in the beginning and tried to adopt it in the development of new residential areas and redevelopment of old towns and cities. However, they are also expressing their misgivings—like their counterparts in Europe and North America—regarding the efficacy of the neighbourhood unit. Further, it is

not certain whether the primary school can serve as the hub of the neighbourhood in the Indian context. Very few studies have been carried out in India to examine whether the existing neighbourhoods have been functioning satisfactorily and whether the neighbourhood planning principle requires any modifications.

7.2 Most of the new industrial townships like Rourkela, Bhilai, Durgapur and Chittaranjan have been designed on the basis of neighbourhood planning principle. However, the mistakes that have occurred in neighbourhood planning in the Western countries have not been avoided in India. Allotment of dwelling units by the Government and other sponsoring authorities, on the basis of pay scale and official hierarchy has led to one-class, one-income neighbourhoods, in which status-barriers have been perpetuated. But some sociologists assert that in the Indian context even in those neighbourhood units which have been planned on the basis of economic or official stratification, there is a likelihood of some social heterogeneity existing, due to the religious, caste and language differentials which normally prevail within an economic class.

7.3 Here is a virgin field of study which offers vast scope to social scientists and town planners to conduct research and to enrich our knowledge of principles and practices of urban planning.

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Comprehensive Physical Planning— Its Role in Urban Development**

By

Allan B. Jacobs

1. What is comprehensive physical planning? The American Institute of Planners defines planning as "the planning of . . . unified development . . . as expressed through the development of the comprehensive arrangement of land uses and land occupancy and the regulation thereof". Another definition would be "the allocation of those physical resources affecting man's urban environment". Still a third definition—one that is extremely simple—is "the design of cities, regions, or urban areas".

So much for definitions. What do they tell us? We can gather from these definitions that physical planning is concerned with unified development or order. Physical planning is also concerned with the comprehensive arrangement of land and uses of it, which is also related to order. The third definition—design of cities—is meaningful only if we define the word design in its most broad sense. Perhaps most important, planning involves the allocation of physical resources for man's use and to meet man's needs. It is man and his urban physical environment that we are concerned with. This last statement implies that planning has purposes. Let us explore what these purposes may be.

2. On the one hand it could be said that the purpose of physical planning is simply to produce comprehensive plans. In this regard it may be noted that the resolution of the Government of West Bengal which set up the Calcutta Metropolitan area according to plan". But this does not purpose of that organization is "to secure and promote the development of the Calcutta metropolitan area according to plan". But this does not tell us much. It is a little like saying that the purpose of living is to live. At a more meaningful and perhaps basic level, the purpose or objective of physical planning is to achieve something that the community feels to be desirable or to correct something that the community feels to be undesirable. It is necessary for the community, with the planners help to define what the "something" is. It may be added that it is in the achieving role that planning becomes broadest and most positive in scope. Another purpose of planning is to provide a basis and a guide for a public action that effects the city's future. If we are talking about physical planning then we would be talking about the physical future of a community. As such, the purpose of planning is to provide a guide for decisions in at least the following areas :

- Land uses,
- Housing,
- Transportation,
- Community facilities and services,
- Urban Renewal, and
- Capital budgeting

3. The resolution that created the Calcutta Metropolitan Organisation is fairly clear on this. It states that a plan might include "a program and policy for the development of the area designed to secure a health safety or welfare of the inhabitants of the area, and recommendations concerning the tasks to be discharged by Government agencies within the planning area and the financial resources required for these tasks in order to produce a satisfactory level of physical development and governmental services". It is to physical development that the purpose of planning in the Calcutta Metropolitan District by the CMPO is directed.

4. Planning may also be described as a continuing process. The near—impossibility of arriving at a single plan that will be good for all times, or even for twenty years is fairly well recognized. Objectives change, unforeseen events change terms of reference, people's needs and desires change, and so forth. The planning process may be viewed as a kind of step-by-step procedure within which planning programmes may fit on the road to the ultimate plan or plans for the community. The trick is to realize that the ultimate plan is a fleeting concept that is never really achieved because it is always changing. The planning process must take this into account. Very simply stated the planning process may be envisioned as one which involves seven steps.

(i) Goal Formation

This basically involves a statement or series of statements as to what the plan should be trying to achieve. Implied in such statements is some knowledge, however general, of the existing status and trends in the structure and a review of existing policies and objectives. This is the starting point. Before we do any other work, any research or draw any conclusions we ask ourselves what it is that we want to achieve. An example of a goal regarding communications for the Calcutta Metropolitan District might be *maximum ease of communications between Calcutta, its surrounding region, the nation and major world capitals.*

(ii) Alternative Means or Policies

This next step is simply a written or graphic statement of alternative ways of achieving the goals previously set for the future city or region. At this stage, we may not know which of alternative means are the ones we want to use. So these alternatives are often stated in the form of questions. Examples of the kinds of alternative policies to achieve the goal on communications might be :

- (a) Should maximum emphasis be placed on highway developments to other areas of the region?
- (b) Should maximum emphasis be placed on railroads?

- (c) Should emphasis be placed on short and long distance air travel?
- (d) Should a combination of the above means be used and if so to what extent?
- (e) Should water transportation of goods to other areas in the region be considered? and so on.

Sometimes the choice of means will be obvious and easy. Often, previous commitments have been made which will have to be honoured. More often than not, however, research and analysis will be required in order for the community to make the best choice of means to reach its objectives. This leads us to the next step.

(iii) Research and Measuring of Consequences

This involves testing and measuring of the consequences of the alternative policies developed in step 2. This is where most of the research will be carried out. It may be added that it is at this stage that most planning bogs down. Considerable excellent research is often carried out with little or no reason in terms of basic policies to be determined and without knowing whether or not or where the research fits in the overall planning process. The kinds of research questions that might be asked regarding the alternative policies on communication are:

- (a) What communication means exist now in the region and between the region and other areas?
- (b) What are their characteristics and capacities?
- (c) What are the probable future transportation needs?
- (d) What are the costs of various transport means?
- (e) What are the emerging technological means of transportation and so on.

(iv) Policy Decisions

At this point we should know the consequences of the alternative policies posed earlier and should be able to recommend those which would best achieve the goals and which are most consistent with each other. The policies, I might add, are not adopted by the planner but are proposed by him to the responsible government official or body for his or their ultimate adoption or rejection.

(v) Comprehensive Plan

Based upon the policy decisions it should be possible to put together a comprehensive plan for the future overall development of the community over time.

(vi) Plan Effectuation

At this stage programmes of action and methods of regulation, finance and administration are developed and recommended to appropriate public agencies for action.

(vii) Reappraisal

Here we are back full-circle in recognition of the continuing nature of planning. It is here that the process starts all over again.

All of the above may be summarised by saying that the process of planning involves: deciding what it is that the community wants to achieve (goals); stating and developing alternative ways of achieving those goals (policies); determining the consequences of alternative policies (research and testing); recommending policy decisions; developing the consequent plan; effecting the plan according to priorities set up in the earlier steps; and, continual re-evaluation of goals and policies.

5. So far so good! but one might well ask how this kind of planning—physical planning—is different from any other kind of planning. How is it basically different from economic or social planning for instance? I would submit that the difference is basically of degree, emphasis, orientation and product. It is necessary to go back in time to explain more fully what I mean.

6. Modern city planning, in its early days, was primarily physical planning. Certainly the planning was geared to social and economic causative factors and goals. But it was primarily physical planning. It was, if you will, the design of cities. I suspect that somehow this kind of comprehensive planning started with the Chicago World's Fair of the early 1900's and the Chicago Master Plan which soon followed. We may note that it was the Fair and the plan which followed that ushered the City Beautiful movement into existence. Planning in those days was dominated by architects and landscape architects. Indeed, the architectural profession even today is the well-spring of most members of the city planning fraternity. Later it became more and more realised that one could not plan realistically in a void; that physical planning had social and economic implications and, in turn, that economic and social factors had major physical implications. So the physical planner broadened his base of operations and started to investigate not only the implications of his plan on social and economic factors of the city but, as important, the implications, terms of reference if you will, of the latter upon his plan. By the time the middle and late 40's rolled around the phrase "Master Plan" had been supplanted by "Comprehensive Plan". The planner was now interrelating as many factors as possible. To be sure, the reason for this expended view may have been that he was growing tired of seeing his work gather dust on library shelves and was trying to find economic and social justifications for carrying out the picture that he had drawn. In any case he was now being as inclusive as possible and was trying to take into consideration everything that might bear on his final plan. But he still perceived that the importance of all these non-physical factors was their impact on physical resources and their allocation. All of these factors were to take final form in three-dimensions on the land. The phrase comprehensive physical plan may not have been used but it was a physical plan nonetheless; the three-dimensional plan that was and still is the ultimate goal.

7. Comprehensive physical planning is then concerned with unified physical development of urban land and its uses. It is concerned primarily with physical resources and how those resources might be used to meet man's needs. When we talk about the planning purpose being to provide a guide for public actions that affect the city's future, we are talking primarily about the physical future of the community and it is primarily to physical ends that the process is directed.

8. This kind of planning would differ from economic or social planning in that the latter is concerned basically with economic and social development and institutions. This is not to say that the physical planner is not or should not be interested in economic or social factors or inputs. He is. But he is only to the extent that these factors are inputs towards a final physical comprehensive plan. Physical planning, for instance, is concerned with the space needed for various kinds of schools and the location of that space and of that facility to best serve those for whom it is intended. In this regard the planner is concerned with play habits, the distances that children can or should walk, optimum room sizes for efficient and productive teaching and other basically social phenomena. The planner need not be concerned, except in passing with teacher's salaries or the appropriateness of curriculum in those schools. Important as these may be they are not directly the physical planner's business and it is not his job to program or plan them. The final product of physical planning is physical plans and programs, not economic or social development programs, however, related these may be. One would hope that just as non-physical factors should be inputs to physical plans, that physical factors would be considered in economic, or social or administrative plans and programs. To the extent they are, then physical planners should be members of the team that produce such non-physical plans. But in this latter case the physical planner should recognize the secondary position in which he is operating.

9. Comprehensive physical planning differs from overall comprehensive planning for communities in that it is but one important part of all that might go into that endeavour. A major present difficulty is that physical planning as it has become comprehensive has also tended to become planning per se without realising it. The result is often that planning organizations which are supposed to be physical planning oriented are trying to do economic and social planning and are often ill-equipped for the task. There is confusion in the minds of the elected officials as to what kind of planning is being done and this is especially true in a society where the word planning is so frequently used to mean something else. The physical planner who starts doing social planning, for whatever good reason, often finds himself on shaky ground and often does so at the expense of good relations with other governmental departments. If there is confusion in the official's and politician's eyes then we can be sure that there is confusion in the eyes of the public who may very well expect something quite different from that which the physical planner can produce. It is imperative I think that we continually strive to understand the difference between various kinds of planning and that we try to make distinctions between them as well.

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Actually the discussion so far on what planning is, what its purposes are, the processes involved, and the differences between types of planning has gone a long way in defining its role in community development. We have done this by implications if not by direction. Nonetheless, it is meaningful to explore this matter a little more fully,

10. First, the role of comprehensive physical planning will depend upon the area that is being planned. By and large physical planning is concerned with three types of areas: the municipality or metropolitan area; the large area within communities, such as a central business district or cultural area or major suburb; and, the urban renewal or development area which is usually fairly small in size. Within each of these three types of areas the role of physical planning will differ but the difference will tend to be of detail, precision, and urgency. Plans will be less detailed when prepared for the metropolitan district and more concerned with long range plans and programs than in redevelopment areas which, of necessity, must deal with immediate programs and more immediate consequences. In one sense the redevelopment plan is no more than one of the many tools required to help carry out the plan for the larger area of which it is a part. For this reason we will deal here with the role of physical planning as it relates to the long range planning at the municipal or metropolitan level.

11. One major role, one that is often neglected, is to advise the community just where it is at any given point in time. What are the existing physical patterns of development? What are the relationships between physical and non-physical elements of the city? This may be termed a kind of stock-taking or inventory function, and is not as mundane as it may sound. An analysis of physical characteristic can lead far beyond simple stock-taking. It is the role of the comprehensive physical planner in this regard to note trends in development and to give the probable physical, economic and social consequences of those trends. It might also be noted here that the existing land use pattern in an area represents a plan of sorts. Although that plan is more often implicit than the result of conscious and direct effort it does represent the goals of previous generations who have lived and may be living in the area. To a large extent the physical pattern that exists at any given time represents what people, past and present want their community to be within their cumulative limitations. A task of physical planning is to analyze this "current" or "past" plan and give its implication for the future.

12. On the more positive side it is the role of the physical planner to give a verbal and visual statement of physical growth directions for the community. The plan should not only give the community a picture of what could be achieved but also alternative ways of getting there, how much it will cost and the various tools or methods that could be used. On the road to this plan for allocating the community's resources the planning process should also give the picture of the probable future consequences of alternative policies. The physical implications of non-physical policies as well as the economic and social consequences of alternative physical plans are all part and parcel of comprehensive physical planning.

13. One more point; the plan should be more than just realistic. It must be visionary within the framework of possibility. It must be imaginative. Here is where the art of planning takes over from that which planners delude themselves into thinking is the science of planning. Without that art, that vision, that dream, the plan is nothing. Let me give you some examples. What are the cities of

the world that are generally accepted as beautiful or great? Paris, Rome, Madrid! They all have something more than a good economic or functional base. They have something that captured the imagination of the people and were thus not only carried out, but also embellished and preserved. In this regard we might compare the Chicago Plan of the early 1900's with that of more recent plans prepared for major cities. By all counts the Chicago plan was less comprehensive, less soundly based on economic and social criteria, more costly than alternative plans might have been, and much more difficult of achievement than has been the case with more recent and well-done comprehensive plans—for Philadelphia, London or Delhi, for example. But the former plan had that certain undefinable something; that much needed spark, that caught the imagination of prince and pauper alike. As a consequence, much of what was proposed in the Chicago Plan has been carried out and it still serves as a basic point of departure for major efforts in that city. I somehow doubt that the Philadelphia Plan, with all its technological efficiency, will be as successful if we measure success in terms of ultimate effectuation.

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14. In conclusion let me say a few words about the role of comprehensive planning in a developing economy, such as India's. I am not sure that standard approaches are valid here. For one thing it seems that the unknowns for future planning are, and will be, greater than those found in the West. It is harder to project trends because there is such a small base to project from. Data from previous years, even when available, may

mean less than is usually the case. Further, in a developing economy there are any number of factors that could change growth and its development relatively quickly. Developing countries will have to experiment in order to find the best and quickest means of reaching other ends and perhaps planning should be experimental as well. It follows to me that plans should take these factors into consideration, especially at the long-range community or metropolitan level.

15. It would seem that greater flexibility is required in plans for communities in developing the economies than in plans for Western communities. Perhaps we should forget the usual categories of land use and talk of functions instead. This might mean thinking in terms of assembly of people rather than simply shopping areas and it might mean thinking about production areas instead of the old industrial land use categories. Lines of force and directions of growth may be more proper than specific land uses for specific areas or even specific transportation routes. Part of the answer may lie in thinking less about controls upon land—the planners old stand by—and more about those public inputs that are likely to have the greatest impact on growth even if we do not know exactly what form that growth will take. Certainly we should spend more time in exploring the technological advances that can have real meaning in developing areas.

Of this I can be sure: Burnham's plea, "make no little plans" is as appropriate here as it was in Chicago at the turn of the century. The problems are great but the potential is greater. It will take big plans to achieve that potential.

Architecture and Human Settlements for Today and Tomorrow***

By

Ajaya Bharadwaj†

1. 'Architecture' is considered an expression which reflects the society, its values, skills and the technological progress of a particular period of time. It has, therefore, to be progressive and ever changing if it is to be truthful in indicating the conditions of that time.

If we are to consider 'Man—his community, human settlements, and architectural developments' of our times, it would be worth analysing clearly the problems that beset us before we can consider the solutions.

Never before in the history of the world has man faced problems which we have started to face and which we would continue to battle against for the next 50 years at least, since we are at present on the verge of a new concept of living. For a proper understanding and analysis of the present problems one needs to appreciate the major factors responsible for the creation of the present circumstances.

2. In the analysis, the two major factors to be considered are the Industrial Revolution and the population explosion. Not far back—in the 19th century—society, its needs, accent and values were very different from those which have developed over these years. The values of space, Time and Architecture as also construction techniques were quite different. The Architect was building for purposes different from what they are today and would be even more so tomorrow. He was then, building for a different group of people; there was little pressure of time; the clients were affluent and his creation was to achieve motives very different from those which is expected of him today. Palaces, Memorials, Museums, Monuments, Churches and other religious centres were the major construction activity. Since, the society at that time demanded—and they had the means—the buildings reflected art, sculpture, and decoration as it was then understood. There was a profusion of these in the buildings. Dwellings, except for the very rich, were never of much importance since only the affluent, built Manors and palaces.

3. The Industrial Revolution in Europe in the 19th century and subsequently in the United States changed values of life, the entire social structure and living habits. There was a tremendous effort to produce more and more for a larger group of people. The changed economic structure had its repercussions on concepts, which started changing rapidly. For mass production, minimum costs became the vital need and this called for new

thinking in the design processes. No longer did people demand the decoration and trimmings which were in use before but the maxim of functionalism came in. A few did build in the old style and even today this class though negligible is not extinct. As a result Industrial Design, Architecture and fine arts, all underwent major changes. Buildings were required to be purely functional and the motto that 'form follows function' was considered a matrix for assessment.

4. Mechanisation took command. The production of any commodity or material was then considered primarily from the possibility of its reproductive qualities. The beginning of this century saw tremendous changes and automation came in, almost in every field of life. The concept of leisure as was then understood, was completely changed. With rapid industrialisation the countries faced many problems and made sacrifices of their physical needs. In the process many values which were important were given up and the countries going through rapid industrialisation suffered and are even to date suffering in many ways and are trying to remove these imbalances.

5. With these changes, the general run of the people who were now becoming cognizable elements of the society, started asserting themselves and the present concept of 'welfare of the maximum number of people' slowly developed. The changes required the architect and planner to play a very different role from what he was performing in the earlier period. He was required to plan and design for the needs of the largest number of people. Today the problem is not only to shelter large masses in a comfortable way and a happy environment but also to provide suitable community and recreation facilities to make their lives as livable and pleasant as possible.

6. Industrialisation also brought in a marked change in urban centres. There was a tremendous movement of people from the country-side to the city and industrial bases. This shift of population from the villages to the industrial centres has been on the increase over the years. It necessitated the hurried construction of large campuses without any thought to design which created many problems later.

7. In my opinion, although the nations which are industrially backward or the so called 'developing nations' have handicaps in many fields, they have also a blessing in that it is possible for them today to gain from the experience of other nations and to avoid the ills of rapid and haphazard industrial growth. Solutions to problems

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which are more appropriate to the climate, society, economics and technology could also be evolved. It is not necessary for us to go through the same somewhat hazardous and injurious path but to short circuit and achieve development in shorter periods. It is, however, a pity that we tend to go over the same path as the other developed nations did and are not avoiding the pitfalls.

8. While Industrial Revolution had been one major factor for the present change as mentioned earlier, the other major change has been the population growth not only in our country but in the world as a whole. The population explosion is alarming; yet most of us have not paid much attention to the problem. Its impact, though it has started being felt already, will be stupendous in the years to come.

In a summary of report on population growth, Heinz, Von Foerster indicates "It is in 65 years or within life span that the human conditions as we know it today are threatened with extinction. At the time of Christ it took the human population about 1,000 years, at the turn of the first millennium about 500 years to increase to twice its size. At the turn of our century, we observe the world population to double as quickly as 62 years and in about 33 years from today we will see cities swollen to twice the present size, to accommodate this population which has multiplied by two in just one generation". The vast majority of this new population will cluster in model cities.

In a recent book Charles Abrams, points out that the impact will be felt most in the cities of the less developed world—that is to say those cities least able to cope with it. He quotes alarming figures. In Africa the present urban population of 58 million people will grow to 294 million by the year 2,000. In Asia the present urban population will grow from 559 million to 3444 millions over the same period of 35 years.

9. Human population of the World and its productive capacity are reaching dimensions that defy human imagination. Today billions of people are demanding accommodations of various kinds moving at far greater speeds over vast distances in no time at all and urbanising at an astonishing density. The sudden extension of quantities alone has produced disorientation, confusion, terror and anarchy.

10. We are creating and will be facing other problems resulting out of our need for major construction activity. These, to name a few relate to vanishing of nature, vanishing of privacy, creation of noise, etc.

11. In the not too distant future man will have invaded every corner of the earth; when wilderness has vanished, even temporary escape from the city will vanish. Man is in double jeopardy at the same time. He risks losing a few lingering sophisticated pleasures of the historic cities; he also risks losing the comfort of the occasional direct contact with nature; for under the heels of the crowds and the constant movement of the wheels, the natural beauty of the wilderness atro-

phies as quickly, as the man made beauty of the ancient city.

Contact with nature is hard to find out only because of man's expanding presence but because of his expanding control and transformation of nature itself. The courses of rivers are being changed, their waters contained in man made lakes, mountains are being moved and tunneled, land claimed from the sea, rain and snow and even climates are controlled. The 'purely natural' is shrinking while the 'man made' is growing.

12. Privacy is most urgently needed and is most critical in the places where we live. The dwelling is the little environment with which all the stresses and strains of the large world are intruding in one way or another. To serve the best interest of privacy, two of these stresses in particular, traffic and noise must be treated as 'invaders'. It is necessary that to develop the true advantages of community living an entirely new anatomy of urbanism is needed, that provides community living, ranging from the most private to the most intensely communal.

13. Noise has been found to have long-winded and direct effects. It causes irritation which leads in its turn to high sensitivity and low resilience. Family and business troubles begin leading to quarrels and psychological disorders. "Sound is considered as the major source of all this trouble and quiet surroundings shall improve conditions from rest". Thus indicates Dr. Paul Volger.

The Radio and the T.V. have transformed lives of mankind. Since the advent of phonographs and the telephone, the distant voices of the outside world have been coming more and more insistently into the realms of the house.

14. The dwelling, the vantage point from which we used to look out upon the world before venturing into it has now become a stage for the venture itself. Transformed by electronics the dwellings is no longer a refuge but an arena.

15. During almost every hour of the day waking or half waking contemporary man is the willing recipient of one message or another. At the push of a button everything is at our hand except the capacity for concentration. Most dwellings of our civilisation in our time have lost clarity both in the internal and external organisation. The failures of external organisation are in the large measure due to our clinging to the 'country houses ideal' which is becoming impossible to attain. The close packed suburban house is an anomaly left over from time of spacious terrains. Existing pressures make it impossible for the house to stand really free. In the yester years the distances between the houses were effective insulation against noise, strangers and the spread of fire. Today the spaces around the suburban house is a myth. The houses of this pattern of suburban villas in colonies and cities due to various pressures have almost become containers to house man. This is as true of new colonies at Delhi as of most other cities in the world. The open space of the villas has shrunk to such an extent that neighbours are breathing on each others' necks. The house is too near the neighbour acoustically and visually to make any seclusion possible. Paltry spaces between houses constitute a nuisance as well as a waste.

16. The above aspects enumerated so far are primarily our major problems and tremendous ones at that. The present situation is on the whole very disappointing.

17. Although the real advantage of mechanization transportation and electronic communication could bring prosperity to undeveloped countries what has actually become visible and audible are the all too familiar symbols like loud speakers, cars, gadgets and mechanical noise. Mankind's newly found mobility, the independence given by the car, the insatiable hunger for broadcasts and man's of labour saving devices have all changed civilised lives more deeply than has so far been suspected.

18. While failing to produce satisfactory new environments we are losing the best of the old. Powerful symbols and images unique and irreparable places, buildings, many memorials and entire historic cities, man's most dynamic motifs of having a communal way of life are being totally destroyed. Modern man seems unable to produce his modern equivalents.

19. The two factors—those of industrialisation on a large scale throughout the world and the population growth are tremendous problems. Unfortunately, it would appear that neither the general public nor the professional people and more particularly our leaders are conscious of the gigantic problems being faced by mankind.

20. In a recent publication David Lewis voices concern over this problem—"How are we going to waken in time those in every country, and city who are in control of necessary power? Waken them not only to the crisis itself, but to the fact that no solution is possible without deeply committed and intelligently programmed inter-relationships of power, political and economic on scales far larger than anything we have seen so far".

21. While our problems have changed, so have our means of tackling them. It would appear that we are not thinking enough, using means sufficiently of developing new ones expeditiously. We are still working on small scale with techniques which correspond to either small needs of the past and are not using the techniques of today. Doxiadis a well known contemporary Greek planner indicates that "the real problem lies not so much in the change of dimensions of the subject, as in humanities inability to make proper use of new forces to improve new problems. We now live in the area of the greatest gap between the demand for proper solutions and the inability to supply them and to the best of our knowledge, we must expect this gap to widen at least in the near future.

22. At the moment, a certain confusion exists in contemporary architecture—a certain pause—even a kind of exhaustion. Fatigue is normally accompanied by uncertainty of what to do and where to go.

23. A kind of play boy architecture is in vogue. An architecture treated as a play boy treats life as such jumping from one sensation to another and quickly getting bored with everything.

24. The heavy weight of mechanisation and all that follows in its trail have entailed enormous complications that make it impossible to adopt a simple line of direction.

25. After Europe had gone through a fair amount of industrialisation and in fact as early as in the late twenties of this century, thinkers had started grouping for possible solutions. The International Congress for Modern Architecture formed in 1928 in its 1933 Meeting on human scale resolved that housing should be considered as the natural element in all urban planning; that the planner should endeavour to provide the joy of the sky, that urban planning should fix the relations between the various places taking into account the rhythm of the inhabitants activity.

26. As early as 1930, Le-Corbusier one of the path leaders, started thinking of "High Rise" buildings built in such a way as to decongest the cities. The decongestion at the centre of the city by increasing population density in high density pockets in order to diminish internal distances was advocated to him. In his book written in 1930, he propounds the needs for this and indicates that to create a business centre in a region or a country, to shorten internal distances and to save time, to restore the ground level of the city in its entirety, to arrange traffic of all kinds, it is necessary to create an entirely new relation between the new population density and the ground.

27. However, the problem particularly for developing countries like ours and those having somewhat rigorous climatic conditions does not solve itself, only by the creation of High Rise buildings. There is great need for analysis, study, research and the evolution of the most appropriate and suitable designs for multi-storeyed dwellings, in our growing towns, like Bombay, Calcutta on the coast, and Delhi in the heart of the country. These apartments if they have to be acceptable to the people and built to provide comfort and living conditions to which they have been accustomed for centuries—have to be planned for these conditions rather than by importing designs of High Rise buildings which may be appropriate for other places. It is necessary that multi-storeyed living in Indian conditions and particularly for a climate like Delhi must provide spaces of activity for a multi-purpose which would be used for the major part of living. The present construction in our country in multi-storeyed buildings is, in my opinion, not sufficient to provide for our needs adequately. If our people have to live in multi-storeyed apartments particularly in places having hot and dry climate, it is essential that a completely outdoor living form which has open to sky space is available in the form of terraces where sleeping, basking in the sun and even developing small gardens would be possible. These demands when enumerated appeared impossible within realms of the economic limits laid, but are not so when worked out in design development and use of modern construction systems. One must also bear in mind that a human being does not like to be labelled as "one of the thousands" and is basically an individual. Even though, it may not be possible for our dwellings to have a personality or reflect the personality of the individual, it should also not mean that he feels anonymous just as a small cog in a large

machine. The object is not to overawe or dwarf man who is delicate and sensitive both to physical needs and mental environment.

28. While I have at length indicated the problems which beset us, the tools and machines at our disposal with the development of science and technology are in no way mean. Technology has made tremendous strides and it is possible today to build not only what was considered yesterday as impossible but build it expeditiously and economically.

29. The development of new structural systems like prestressing and use of plastic forms of ferro-concrete like hyperbolic paraboloids, shell, conoids, folded plates have opened new vistas—It is possible today to suspend the entire multi-storeyed building from its roof and to economically transfer the loads through the core.

30. Mechanisation in building industry with its resultant standardization of components and pre-fabrication make it possible today to build high rise buildings within a matter of weeks. New techniques are being developed and research carried out fruitfully.

31. New materials are being developed, a large number of which are by-products of other industrial ventures. Plastics, Fiber-glass, Polyvinyl, Aluminium are comparatively new entrants in a big way in the building industry. The variety of materials being manufactured in advanced countries is so large that it is becoming well nigh impossible for a designer to keep track of them. New requirements and demands are daily creating and developing new materials. It is, therefore, essential particularly for developing countries that the designers and the users should keep an open mind for the introduction of new construction techniques and materials. Conservatism has been a curse of most developing nations including ours where the only hope lies in progressive thinking and keeping an open mind on all aspects whether on designs, materials or construction. No country and least of them, such as ours can afford to waste materials and spaces as we do. India has one of the lowest per capita land values in intensive utilisation. No country today can afford to use and waste materials and structures as we do. There is need for re-orientation in our thinking concepts.

32. The last few decades have seen the possibilities of adoption of new structural systems and techniques through the works of Robert Maillart, Nervi, Torraja, Candella and a host of others who have blazed new paths.

33. The new architecture developing new demand concepts of structural design, materials, construction techniques, completely does away with our old and stereo-type system of building. Even walls as they were conceived are no longer walls since they carry no loads and are only in the form of cladding and curtain material whose major function is to provide good insulation, prevent rain, give privacy and a pleasant environment. The introduction of the outdoor with the indoor is now almost essential with the shrinking of built up spaces. The rooms as being built are becoming smaller and smaller; there is, therefore, a growing need for bringing more of the exterior

to become usually a part of the interior for psychological considerations.

34. In recent times, the construction of two Capitals has evoked considerable international interest. These are Chandigarh which in our country does not appear to have the same impact and appreciation as abroad. It has indicated a new concept of planned and controlled living. I may mention that Chandigarh cannot be considered as a solution for the major problems which we would be facing but it did provide a new functional Capital. The other Capital which I have in my mind and which I feel would have more impact on the evolution of new settlements is Brasilia, the Capital of Brazil. The planners there have adopted a different type of urban plan instead of the closed plan normally having the city centre and Government centre being in the womb. The urban design by Lucio-Costa placed the Government centre or the "Plaza of Three Powers" at the tail of an Aeroplane like plan. Even though there is no shortage of land at present in Brazil and particularly in 'Brasilia' since it is built in the interior, the planners have kept in mind the needs of man in new forms and have from the very outset built housing for an appreciable number of people in high rise buildings. The public buildings using modern technology and yet a certain native touch have presented interesting and novel forms which are more appropriate to conditions of today and to the people of Brazil.

35. While we have considered so far the problems and the tools, I would also like to mention briefly a few attempts which have been made for the design of new human settlements. These have to be taken in the form of experiments and leaders which by themselves may not be the ideal solutions but which indicate the possibilities of new human settlements.

36. It is important to realise that urban development of the kind which is remorselessly threading together the previous independent giant cities with a single Giant Megalopolis device the shear powers of the circulation system as the basic elements in the new theme of urban structure. Today we are already seeing the creation of high density towers like the Marina city in Chicago with its lower levels of shopping, concourse, restaurants and Plazas, its middle level of parking and its residential and office towers rising into the sky above.

37. New ideas of urban development are coming from Japan. To diminish the ever growing congestion within a city like Tokyo, proposals have been made to create new land by building out in the Bay.

Kenzo Tango, an internationally known Japanese Architect, has carried out very interesting studies for the development of Tokyo. The vast increase in the speed range and volume of various forms of mobility together with increasing complexity and differential of social structures is in fact revolutionary for it leads to a freer and more spontaneous city. Tango therefore defines his task, as to find a new urgent spatial order which will reflect the open organisation and increasing spontaneous mobility of contemporary society.

The design for the city of Skopeje by Kenzo Tange as a result of international competition is very interesting. Skopeje in Yugoslavia a few years ago was razed to the ground by an earthquake and the entire city is to be re-built.

38. In conclusion without going into details of the very interesting and penetrating design studies, I would like to mention only two more. These are the work done by the 'Metabolists' of Japan who understand human society as a living process and who propose an active 'Metabolistic' development of our society (change, mutation revolution, transformation in cycles), Kurokawa of the Metabolists has designed a construction in the form of a multi-storeyed Helicoidal Towers in screw rotation, with the towers connected at every 10 storeys with each other. In this way an adequate net work of horizontal and diagonal connection guarantees a three dimensional development of traffic with the towers.

The other interesting work is the scheme for expansion of Amsterdam, studies of which have been made by Bakema a very well known Dutch Architect where the idea is to reclaim land and build a new town on a shallow lake. It envisages a multi-level, multi-speed transport system on a central location and with the creation of multi-level places of work and residence around this artery. The housing development which is on the periphery of this development has hardly any problems of vehicular traffic and gives tremendous possibilities for play areas and view of the surrounding lake.

The object of this short talk has been to stimulate interest and thinking so that it would be possible for us to make conscious effort on working towards the evolution of new human settlements and the architecture required for it.

VII

**PRODUCTIVITY, LABOUR MANPOWER &
MATERIALS PLANNING IN BUILDING
SECTOR**

Manpower Problems in Building and Housing Industries***

By
Shri B. N. Datar†

1. Construction accounts for a substantial portion of employment activity in the process of development. Students of economic development who have studied this problem in historical perspective will recognise that in periods of low economic activity, and therefore low levels of employment, construction is used as a stabilising factor. The 'New Deal Programme' in the United States and the housing activity in some Scandinavian countries can be cited as instances on this point. Even in our own country there is evidence to show that some of our prize pieces of architecture were built to provide employment in difficult days.

2. Construction also played an important part in relief measures which were undertaken during famines. With Independence the distress due to famines is a thing of the past. Activities like construction which were undertaken in days of famines are now getting a more positive look through programmes of rural works; construction activity has an emphasis during slack agricultural seasons.

3. In order to make construction activity more meaningful and not to allow it only to remain as something in the nature of digging holes and filling them, it is important that technical skills have to be imported in this activity. This is important not only from the point of view of building of assets for the nation, but also for giving persons affected by distress a feeling that they earn something by participating in a desirable national activity and not live on doles or remuneration for work which is essentially useless in its content.

4. Manpower problems in building and housing industries more or less come to the surface if building and housing activity is viewed in this manner. But since building and housing is only a part of the nation's total construction activity, the manpower problems of this industry cannot be considered in isolation. These fall in two parts (a) determining the number who will be engaged in such activity both in terms of quality and quantity and (b) determining the conditions in which they have to work.

5. In the first 15 years of planning, construction has accounted for roughly 20 to 25 per cent of additional employment in the non-agricultural sector. In the Fourth Plan also the percentage is likely to be in this range. Of the employment generated in construction activity in the Second Plan roughly a third belonged to building and housing. In the current plan this percentage is expected to be in the neighbourhood of about 15 to 17 per cent. In either case the percentages mentioned exclude construction of building activity

of the factory type. This underlines the importance of building and housing in relation to employment generation.

6. Another significant link between problems of manpower and construction will be understood if we realise that in India the general problem of manpower was forced to the notice of planners because of difficulties encountered in arranging alternative employment for personnel engaged in construction activity. We saw the spectacle of trained and experienced personnel suffering from redundancy at one place and the shortage of such categories at other centres of development. To estimate the effect of such imbalances on planning and to estimate realistically the needs of such personnel the Planning Commission set up the River Valley Projects Technical Personnel Committee.

7. As mentioned earlier, this committee found it difficult to recommend steps for augmenting our training programmes because it could not have the full picture of requirements of trained personnel in construction categories. We then moved on towards the setting up of the Engineering Personnel Committee to take an overall view of manpower problems in construction activities.

8. The two committees assessed the requirements of personnel differently. The former undertook on the spot studies of personnel requirements by visiting selected river valley projects, the latter depended on seeking detailed information from the Ministries at the Centre and the State Governments, project authorities and private sector. Even so the two approaches could be considered as complementary to each other and in the process provided a more realistic estimates of manpower requirements of construction activity.

9. When, we think in terms of construction as an activity for providing employment it is necessary to remember that construction employment is necessarily discontinuous in character. The discontinuity arises from the fact that once the project is complete, employment on it except for maintenance of the project will come to an end and maintenance personnel form only a fraction of the total construction employment. Therefore, in assessing both the requirements of technical personnel and employment and generation in construction activity this important aspect has to be kept in mind.

10. At this stage we may introduce another factor which influences the use of manpower in building and housing industry—the pace of mecha-

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nisation. As mentioned earlier if construction is to be used as a stabilising factor for employment it is presumed that such construction should have sufficient labour intensity. At the same time certain processes within construction require utilisation of machines and once labour gets used to working with machines there may be difficulties in going back to older methods. Also there will be certain operations in building construction which will need the use of machines to make the building relatively free from danger for users. If one has to look into the future there will be at least in certain metropolitan areas, vertical expansion of building activity which will call for some element of machine utilisation.

11. The manpower problems of construction industry in so far as they relate to quality and quantity of personnel should be studied taking all these factors into account. Obviously there will be different angles from which the problem should be viewed (a) technical personnel, their availability and optimum use, (b) difficulties in such use, (c) arrangements for facilitating mobility of technical personnel, (d) assessment of labour requirements and supply problems connected with these aspects, etc.

12. As regards assessment, various studies are now available—studies based on building projects, studies on the basis of experiences of construction engineers, studies of the manning patterns within Government departments in charge of buildings, work studies which have now been undertaken and which are contemplated to assess optimum requirements and so on.

13. Talking of optimum utilisation, there can be two aspects of it, (a) deployment, and (b) appropriate utilisation. As to (a), one may refer to the machinery required for facilitating transfers of technical personnel—the work of the units specially set up in the Directorate General of Employment & Training and State levels for this purpose. For

such work to succeed it is important that the authorities in-charge of deployment should have a complete picture of possible construction programmes. The level of construction activity is on the increase all round. Normally, therefore, it should not be difficult for seeking a solution of the problem by breaking it down region-wise. Such matching of regional supply with regional demand will remove a number of other difficulties which redeployment will bring in its wake. (b) involves detailed work studies. These are at present being undertaken in many activities where engineering personnel is required.

14. But such deployment can be only in case of technically qualified persons at different levels. In all this work the difficulty of translating the deployment idea into suitable action programme at the lower level has to be taken into account. Therefore, regional estimates are important in such cases for levels below a certain skill.

15. Another set of manpower problems is connected with conditions of work for persons at lower levels of skills. Most of such work is done through contract labour but persons who are in charge of supervising the work of contractors, particularly their work for labour, have to be careful that the terms of contract are fairly observed. Cases where measurement of work can be manipulated to the disadvantages of workers are not rare. It is such circumstances which create dissatisfaction among workers and at times upset the programming of the project. The usual argument that the penalty clauses in a contract are sufficient to make the contractor realise the importance of keeping labour satisfied can go wrong.

16. Along with this it is equally important to see that the living conditions provided by an employer are adequate. No one expects that the cost of project should go up to accommodate for better housing of contractor's labour but even the enforcement of the fair wage clauses in the contract may provide desirable relief to contract labour.

Technical Manpower and Its Planning***

By

Jagat Pathi†

1. INTRODUCTION

1.1 The role of technical manpower in the social and economic development of a country cannot be over-emphasised. A variety of technical skills needs to be developed and properly utilised in order to transform a traditional society into a modern society. Even in the developed countries rapid economic growth and fast changing technology call for constant attention to the development of newer and more sophisticated skills. Any nation which is committed to social and economic advancement should therefore, accord priority to development of technical manpower resources.

For purposes of the present discussion, we shall take technical manpower to cover the following levels of skills :

- (a) Semi-skilled and skilled workers (including first line supervisors);
- (b) Technicians (diploma holders)—both supervisory and higher technicians;
- (c) Engineers and Technologists (graduates);
- (d) Research and Design Engineers (post graduates);
- (e) Technical and Industrial Managers.

1.2 The time taken to train an engineering graduate is about five years and is even longer in the case of research and design engineers and technical and industrial managers. The lead times for diploma holders and craftsmen are of course comparatively less (2 to 3 years). It is, therefore, essential to create training facilities in these fields well in advance in order to ensure sufficient supply of such personnel at the time they are needed. This necessitates assessment of the likely demand for technical personnel five to ten years ahead so that the establishment of adequate training facilities may be taken immediately in hand.

1.3 The methodology adopted generally consists of the following steps. Since the demand for technical manpower depends on the economic activity in the forecast year estimates of manpower requirements are generally obtained as a derived demand. To start with, forecast of economic activity in the forecast year are made. This may be in terms of the gross national product and its distribution, or the quantum of investment or outlay in the forecast year or any other suitable economic variable that sums up the total economic activity in the whole economy in the forecast year. These forecasts may be targets set down as socially desirable or econometric projections of the relevant variables. These targets can then be translated into technical manpower requirements in a variety of ways. Some of the yardsticks that have been used in India are the investment-engineering

personnel ratio, output-engineering personnel ratio, the ratio of engineering employment to total workforce etc. which have been developed on the basis of past relationships observed between engineering employment and the other variables. These observed norms are either assumed to continue till the forecast year—a case of technological determinism—or slight adjustments are made to account for changes of technology—and consequently on levels of productivity. In the United States, the translation of the targets of economic activity into manpower requirements is done through more refined methods (due to the wealth of statistical data available), which take into account various factors, such as the likely pattern of economic activity in the economy, the product-mix, changes in technology, etc, in the forecast year.

1.4 The manpower requirements so obtained are translated into enrolment levels by means of level-wise utilisation patterns like ratios among levels of skills in employment (ratio of graduate to diploma holders), pass rates, etc.

1.5 As the preparation of estimates of requirements of technical manpower is a long term exercise and is based on long term plans for economic and social development, the validity of the estimates in practice depends very much on the economy behaving as predicted. Further, unforeseen changes in technology may bring about changes in the norms used in estimation. Unexpected strains on the economy as a consequence of war or a serious drop in export earning may also affect the levels of development envisaged and therefore, the manpower requirements estimated. Such risks are inevitable in any planning process and the only thing that can be done is to keep the forecasts of technical manpower requirements constantly under review with the aid of information on the performance of the economy that is fed back into the planning process and to take such action as may be called for to regulate supply and demand.

1.6 In order that planning for technical personnel may be successful, it is necessary also to bestow attention upon certain related aspects; optimum utilisation of existing personnel should be ensured; the quality of the personnel should be constantly improved; the skill-equipment of the personnel produced should be in consonance with the changing needs of industry. In other words, the supply and demand should be matched not only in numbers but also in quality. And finally, supply and demand should be balanced not only at the national level but also at the regional and state levels so that regional imbalances do not arise. There is also need for research into manpower so that techniques to deal with the various problems mentioned above are developed and more accurate techniques of forecasting are evolved.

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1.7 These activities would call for concerted action on the part of various agencies both within the Government and without. It is therefore, necessary to have an agency charged with the responsibility to lay down an authoritative policy in manpower matters and to coordinate activities in the field of manpower. Organisational arrangements should precede manpower forecasting activities.

2. INDIAN EXPERIENCE

2.1 Organisational Arrangements

2.1.1 The importance of technical manpower in development was realised in India soon after the War. The Central Advisory Board of Education, in their plan for post-war development in India emphasised the need for planning technical education on an all India basis if there was to be substantial industrial development in the post-war period and recommended that "to stimulate, coordinate and control the provision of the educational facilities, which such a development as well as existing industry will need, there must be an all India body in supreme charge". An All India Council of Technical Education consisting of representatives of all the main interests concerned with technical education was accordingly set up in November, 1945 to advise the Government on matters relating to technical education. In 1947, the Scientific Manpower Committee was appointed to assess the requirements of scientific and technical manpower in the ensuing decade. Seven years later, the Ministry of Irrigation and Power appointed a committee to assess the technical manpower requirements for the planning, execution and maintenance of river valley projects and flood control schemes in the next fifteen years.

2.1.2 As would be seen, apart from the setting up of the AICTE, an advisory body, planning for technical manpower until 1954 has been through *ad hoc* committees, and the need for continuous manpower planning was felt towards the end of the First Plan period when it was realised that the progress of plan programmes was being impeded by an acute shortage of trained personnel. The Engineering Personnel Committee set up by the Planning Commission in 1955 to assess the requirements of technical personnel for the implementation of Second Five Year Plan programmes drew attention to the problem of coordination in the manpower field and emphasized the need for the setting up of a permanent machinery for focussing attention on manpower problems and for ensuring that a coordinated and authoritative manpower policy was laid down. The Planning Commission also recommended the setting up of (a) an authority which would lay down policies in regard to effective utilisation of personnel and (b) a suitable organization which would execute these policies. A Directorate of Manpower was accordingly set up in the Ministry of Home Affairs in November 1956 to :

- (i) formulate in consultation with the appropriate Ministries and the Planning Commission the basic policies and programmes in matters relating to manpower and employment.

- (ii) secure implementation by the agencies concerned of the decisions of the Cabinet on manpower planning and organisation, both to meet the requirements of the immediate future and on a long-term basis.

- (iii) maintain liaison with the various Ministries at the Centre concerned with manpower problems, the Planning Commission and the Council of Scientific and Industrial Research and with the State Governments.

2.1.3 The existing organizational arrangements for manpower planning can be set down as follows: The Directorate of Manpower located in the Ministry of Home Affairs and also functioning as the Manpower Division of the Planning Commission is the central authority responsible for manpower policy, and works in close collaboration with different ministries and organisations especially the Directorate General of Employment and Training, the Council of Scientific and Industrial Research, Planning Commission, Ministry of Education, Institute of Applied Manpower Research and the State Governments. The Directorate of Manpower is also represented in the AICTE and is closely associated with the NCTVT† which advises the Government in matters relating to training in vocational trades. Coordination in manpower matters the central organizations is effected through an inter-departmental committee called the Steering Group on Manpower consisting of representatives of the Planning Commission, Ministry of Home Affairs (Directorate of Manpower), the Institute of Applied Manpower Research, Council of Scientific and Industrial Research, University Grants Commission, Ministry of Education, Department of Labour and Employment (D.G.E.&T.), Ministry of Finance (Department of Coordination), Ministry of Defence (including Defence Production), Department of Industrial Development, Ministry of Irrigation and Power and Ministry of Petroleum and Chemicals. Representatives of other ministries and organizations can be invited to attend meetings of the Group as and when necessary.

2.1.4 The organisational arrangements for manpower planning at the level of the States are, however, in the process of being evolved. The coordination with the States is at the moment facilitated through the State Manpower Officers.

2.1.5 A good deal of research in manpower has been and is being carried on in government agencies connected with manpower work like the Directorate General of Employment and Training and the Planning Commission. The Government have also set up a semi-autonomous institution called the Institute of Applied Manpower Research for doing research into manpower problems. The Institute functions outside, but in close touch with the Government.

2.2 Assessment of Technical Manpower Requirements

2.2.1 The creation of facilities for technical education in the early stages of independence was based on the schemes drawn up by the AICTE. The Scientific Manpower Committee appointed in 1947 carried out a fairly extensive survey of the

*Govt. of India (Ministry of Education) Resolution dated the 30th November, 1945.

†National Council for Training in Vocational Trades.

existing and projected activities of industry, Government departments, and educational institutions and the facilities available in India for scientific and technical education and training. The Committee attempted to work out approximate ratios between production and personnel and made use of manning tables from other countries in respect of new industries which were expected to develop within the next- 5-10 years. Since most of the industrial concerns, as also Government departments and educational and research institutions were unable to give a clear idea of their development plans and programmes for the next five and ten year periods the Committee was unable to present any detailed estimates of requirements of personnel of different categories. The Committee recommended a phased programme of expansion of facilities for scientific and technical education and training facilities in the next 4-5 years was based on the Committee's recommendations.

2.2.2 In 1954, the Ministry of Irrigation and Power appointed a River Valley Projects Technical Personnel Committee to assess the requirements of, among others, technical personnel for the planning, execution and maintenance of River Valley Projects and Flood Control Schemes to be undertaken in the ensuing 15 years including those already under execution. The Committee worked out expenditure-personnel ratios and with the help of these arrived at estimates of requirements.

2.2.3 Soon after, an Engineering Personnel Committee was appointed by the Planning Commission to estimate the probable requirements of engineers and technicians for implementing the Second Five Year Plan (1956-61). This Committee also worked out expenditure-personnel ratios for estimating the requirements of engineers for development programmes. Where this approach was not applicable, production-personnel ratios were used. The private sector's requirements were based on the estimates by the Development Wing of the Ministry of Commerce and Industry while drawing up plans for expansion of industries. The Committee's investigations revealed that the output from existing institutions would not be sufficient to meet the requirements. Urgent steps were taken to expand training facilities on the basis of the Committee's recommendations, though it was realised that it was too late to ensure an adequate supply of graduate engineers during the second plan period.

2.2.4 During the period 1956-59 the Perspective Planning Division of the Planning Commission undertook a series of studies into the utilisation, in various sectors of activity, of scientific and technical personnel in different branches of specialisation. A study of the occupational pattern in manufacturing industries was also made. With the help of the results of the above studies and on the basis of certain assumptions regarding the rise in the level of investment/output in different sectors of the economy during 1961-66 a tentative forecast of the requirements of engineers for this period was made. Further expansion of facilities for engineering education during the second plan period was sanctioned on the basis of this forecast for meeting the Third Plan requirements.

2.2.5 The next attempt at estimation of requirements of technical personnel was made in 1959

when the Planning Commission appointed the Working Group on Technical Education and Vocational Training to estimate the probable requirements of engineering and technical personnel (including Craftsmen) for implementing the third Five Year Plan and to recommend targets for the provision of facilities in the Third Five Year Plan keeping in view the likely requirements for the next fifteen years. This group was also required to go into various matters relating to technical manpower and technical education like utilisation, teachers, practical training in industrial undertakings, e.c. The Working Group collected extensive data on investment and manpower requirements from various ministries and developed investment-personnel ratios, for graduate engineers, technicians and craftsmen. On the basis of these norms and an assumed level of investment in the Fourth Plan the group gave a tentative estimate of requirements for the Fourth Plan period.

2.2.6 Manpower Planning for the fourth and fifth five year plan periods (1966-76) was initiated as early as 1964. As part of a general approach to planning adopted in the Planning Commission a Working Group on Employment and Training was appointed for the purpose. A sub-group of the Working Group on manpower was entrusted with task of preparation of estimates of requirements of various categories of personnel. All the working groups appointed by the Planning Commission for working out proposals in the different sectors of the economy nominated a member of their groups to liaise with the sub-group on manpower. This facilitated the coordination that is essential for manpower planning.

2.2.7 Estimates of engineering personnel requirements were attempted by different agencies represented in the sub-group on manpower, viz., Directorate of Manpower, Planning Commission and the Institute of Applied Manpower Research. The estimates were based on global and sectoral investment personnel ratios, and on assumptions involving relationships between the rates of growth of the stock of engineering manpower and the growth of engineering intensive sectors of the economy and prospective trends in patterns of utilisation of different levels of skills and changes in the ratio between graduate engineers and diploma holders in engineering. The various estimates were considered by the Sub-group on Manpower and the estimates of requirements for the Fourth Plan period were placed at 86,000 for graduates and 140,000 for diploma holders in engineering.

2.2.8 For purposes of expansion of training facilities in the fourth plan period estimates of requirements of the fifth plan were considered. As the size of the Fifth Plan and its sectoral distribution were not available, exact estimates could not be made. Requirements were, however, estimated on the basis of broad assumptions regarding probable rates of growth in the engineering intensive sectors. On the basis of the assumption that (i) these sectors will grow at an average annual rate of 10.3% during the Fourth and subsequent plans (ii) there should be a corresponding proportionate increase in the stock of engineering graduates and diploma holders with a suitable replacement allowance for attrition and (iii) by 1986 the ratio of diploma holders to degree holders

should be increased to approximately 3:1 it was found that the requirements for the Fifth Plan would be met by the existing facilities at the degree level and by increasing the intake at the diploma level by about 18,000 seats during the Fourth Plan period.

2.2.9 Towards the end of the Third Plan a high powered committee was also appointed to assess the requirements of technical manpower for the next ten years. The Committee endorsed the estimates made earlier and suggested the provision of about 1,000 seats at the gradual level in specialised branches of engineering, to be created towards the end of the Fourth Plan. The Committee emphasised the need for diversion of facilities from the traditional branches of engineering to modern branches of engineering and appointed study groups to go into the requirements of certain modern branches of engineering like Materials Science and Technology, Nuclear Power Generation, Chemical Technology (especially Petro-Chemicals), Electronics and Instrument Technology including Automation.

2.2.10 Recently a team from the London School of Economics prepared, in collaboration with the Planning Commission and the Indian Statistical Institute, estimates of requirements of engineering graduates and diploma holders up to 1986 for the Education Commission. These estimates were obtained on the basis of rates of growth of sectoral outputs in the next twenty years.

2.2.11 Some attempts at assessment of requirements have also been made in the case of particular specialities. Towards the end of 1964 when a surplus of mining engineers developed the Joint Board on Mining Engineering Education and Training appointed a Group to go into the problem. The Group came to the conclusion that a perceptible change in the employment prospects of mining engineers possessing I or II Class Mine Managers' Certificate of competency and predicated a continuing under-employment among I Class Managers and some difficulty in securing employment for II Class Managers during the IV Plan. Apart from preparing estimates of requirements for the coal and metalliferous sectors on the basis of production personnel norms the group suggested various measures to relieve the un-employment, such as the development of research, statutory provision for appointment of qualified personnel as Safety Officers, enforcement of the Mineral Conservation and Development Rules along with the currently enforced Metalliferous Mines Regulations in the metalliferous mines so as to improve estimates of both mineral resources and mining engineers, possibilities of sending our mining engineers to newly developing countries to help their mineral development, etc. Recently the Joint Board reviewed the estimates of demand on the basis of the latest available information on the mineral development programme and came to the conclusion that a considerable surplus of mining engineers would develop unless admissions to mining engineering courses were severely curtailed. The Department of Mines and Metals have suggested to the Ministry of Education a severe curtailment in admissions to Mining Engineering courses during the current and ensuing years.

2.2.12 Towards the end of the third five year plan, when the construction phase of major public sector undertakings came to a close, surpluses among engineering specialities engaged in construction, particularly civil engineers have begun to develop. The Government have appointed a Committee to examine the long term supply and demand position and employment prospects of civil engineers. The Committee has representatives from the Ministries of Education, Industry and Transport, the Central Public Works Department, the Central Water & Power Commission, the Directorate General of Employment and Training, the Railway Board, the Council of Scientific and Industrial Research, the Bureau of Public Enterprises, the Military Engineering Service, the Institute of Applied Manpower Research and the Institution of Engineers. The Committee will be submitting its report shortly.

2.2.13 Since the Committee's work will be of interest to the present discussion, we shall go into the methodology adopted by the Committee for assessment of requirements.

2.2.14 Three sub-committees of the Committee are examining various aspects of the problem. The first is going into the long-term demand for civil engineers in Government and Public Sector; the second is examining the demand in private sector; and the third sub-committee is considering organizational measures necessary to maximise continuity of employment and for expeditious re-deployment of retrenched engineers.

2.2.15 The sub-committee No. I collected data on various aspects of civil engineering employment from Central and State agencies and the public sector undertakings. The establishments which have replied to the questionnaire have reported additional demand for the Fourth Plan. Correcting this demand for non-response, the sub-committee have placed the additional demand at about 43,165 engineers made up of about 15,850 graduates and 27,315 diploma holders.

2.2.16 The sub-committee have also estimated the demand on a global basis: Civil engineering employment in public sector construction was 6.3% of the total employment in public sector construction in 1961. This ratio was 7.0% in 1966 which meant an annual rate of growth of 2.2% for the ratio. Assuming this rate of growth to continue in the Fourth Plan the civil engineering employment in construction in 1971 was arrived at. Adding to this replacement requirements at 2% per annum the gross addition in 'construction' was obtained. From the gross addition in construction in public sector the total civil engineering demand in public sector was obtained on the basis of the industrywise distribution of the stock of civil engineering graduates and diploma holders on 1-4-1966 as revealed by the data collected by the committee. The estimate arrived at was 45,406.

2.2.17 Another approach adopted was to relate the requirements to outlays on construction during the fourth plan period. Noting that this approach has a number of limitations like lack of sufficient data on actual investment in construction, civil engineers released from construction projects on completion, assumptions that outlay figures are in

constant prices, etc., the committee worked out that to every crore of rupees of investment in construction 7 civil engineers were added to the stock during the Third Plan period. Assuming the same relationship between construction investment and civil engineering employment, the committee applied this ratio to an outlay of Rs. 7200 crores in construction in the IV Plan and arrived at an additional requirement of 50,400 civil engineer-year. Deducting from this the likely number of civil engineers who will be released on completion of Third Plan projects, viz., about 19,000 and adding replacement needs the committee put the gross additional demand at 41,000 civil engineers.

The estimates of requirements thus varied between 41,000 and 45,000.

2.2.18 Noting that the outlay in the first two annual plans and, consequently for construction activities, have been less than envisaged the committee have reduced the estimates of requirements in public sector to 40,000 made up of 14,000 graduates and 26,000 diploma holders.

The estimates of demand for the IV Plan worked out by the Committee meant an annual rate of increase of 7.2-8.0% per annum in the stock of civil engineers in the public sector during 1966 to 1971. Assuming that the rate of growth of stock will be 8% per annum in the fifth plan the committee has arrived at an estimate of demand of 56,900 civil engineers made up of 20,000 graduates and 36,900 diploma holders.

The sub-committee III which went into the private sector requirements have worked out estimates of man-years required for a given quantum of construction work. One of the important findings of this sub-committee was the very small number of graduate engineers employed in private sector construction work.

2.2.19 *Craftsmen*—Since the Craftsmen courses are of much shorter duration there is less need for long term projections of demand for them as changes in the supply of craftsmen can be effected at short notice. Further the supply of Craftsmen is not wholly from institutions. Many craftsmen learn their trade on the job and to many others some craft or the other is a traditional family occupation. Institutional out turn, though intended to meet such shortages as there may be is probably more important as a pace-setter in the development of greater competence and greater consciousness of modern trends among craftsmen and operatives.

Norms for estimation of craftsmen requirements are necessary even though long-term estimates of requirements are not necessary to create training facilities. The Working Group on Technical Education and Vocational Training developed on the basis of data collected by them investment-craftsmen ratios. The sub-group on Building Materials and Manpower of the Working Group on Housing and Urban and Rural Planning for IV Plan developed norms of manpower requirements (man-days required for a work costing 1 lakh including water supply, sanitary and electrical installations) for the implementation of housing

programmes on the basis of analysis of actuals of a few construction projects of the Central Public Works Department undertaken in Delhi. The group presented estimates of requirements for skilled manpower, such as Masons, Carpenters, Blacksmiths, Fitters, Wiremen, Painters, White-washers, etc. and for unskilled manpower for the fourth and fifth year plan periods but these correspond to the developmental programmes as envisaged in 1964. The report predicted a shortage of skilled building construction labour like masons, carpenters and plumbers and suggested establishment of vocational training schools as an adjunct to the educational institutions in smaller towns and rural areas and adoption of prefabrication techniques of construction where the element of requirement of skilled labour would be reduced.

2.2.20 *Research Engineers, Industrial and Technical Managers*—Requirements of post-graduate engineers were considered by the Working Group on Technical Education and Research. Since, however, the requirements of post-graduates on personnel with research qualifications were not separately indicated by most agencies from which data were collected. In respect of such requirements as had been indicated by some ministries the Working Group felt that these could be met during the third as well as the fourth Plan in fields where need would be felt by making necessary provisions in the existing institutions.

2.2.21 A Committee appointed in 1960 went into the requirements, *inter alia* of technical managers in the third and fourth five year plans. On the basis of the data collected from various organisations the Committee worked out norms (ratios of technical managers to total employment) for groups of industries and estimated requirements for the third and fourth five year plans. This is a field in which sources of demand, levels of responsibilities and the training preparation to fill such positions, as also the institutional arrangements for the same are still to be clearly defined and concepts developed. Since, further, management ability is currently developed on the job, development of techniques for assessment of demand in this field will have to await solution of conceptual problems involved.

2.3. Manpower Utilisation Mobilisation and Development

2.3.1 Though improved utilisation of available manpower is the most important of short-term measures to tackle shortage of trained manpower, it is important even in the long run in view of the scarcity of national talent, facilities for training and the high costs involved.

2.3.2 A National Register was set up in 1948 in the Council of Scientific and Industrial Research to collect and analyse information on the utilisation of trained manpower. Since 1957 an Indians Abroad Section of the Register has been started for maintaining particulars of persons working or studying abroad.

2.3.3 A problem that is receiving widespread attention is the "Brain drain"—the problem of outflow of highly qualified manpower from underdeveloped countries where they are badly needed for development, to the advanced countries. Manpower Planning should surely concern itself with this segment of skilled manpower. Starting with

the setting up of the 'Indians Abroad' Section of the National Register, Government have set in motion various measures to facilitate voluntary repatriation of Indian high level manpower abroad.

2.3.4 Firstly, procedures for recruitment of Indians abroad were streamlined so as to facilitate utilisation of Indian scientists and technologists abroad. The Union Public Service Commission has agreed to treat as "personal contact candidates" all persons registered in the Indians Abroad Section of the National Register who appear *prima facie* to be qualified for posts for which selections are made by the Commission and to interview them abroad, whenever it is found feasible or necessary to do so. Some of the State Public Service Commissions have also agreed to do so.

2.3.5 A Scientists' Pool, established in 1958 provides temporary salaried assignments to well qualified Indian scientists, technologists, engineers and medical personnel until they are absorbed in regular employment. Though intended mainly for personnel with foreign qualifications working or studying abroad, persons with outstanding Indian qualifications are also appointed to the Pool. All persons enrolled in the "Indians Abroad" section of the National Register are considered for selection to the Pool as also persons whose names are brought to the notice of the Special Recruitment Board by the Indian Missions abroad, the Directorate of Manpower or the Council of Scientific and Industrial Research. Though there is a ceiling on the strength of the Pool, no competent person is kept out of the Pool because of a ceiling on its strength.

2.3.6 Persons selected to the Pool are seconded to Universities, National Laboratories, Govt. Undertakings, Scientific and Technical Institutions and other establishments including private sector depending upon their preferences and their experience and qualifications. Contingent grants are also given where necessary so as to enable the Pool Officers to continue to do research in their field of specialisation.

2.3.7 Since the time the first selection was made in May 1959 till the end of 1966, about 11,000 persons have been considered for selection and 4856 selected. Of these 2104 joined, 1,415 left the Pool on securing employment within India, 90 went abroad again and the services of 63 were terminated. The median stays in the Pool of engineers and technologists who left Pool on securing employment within the country were 9.02 and 8.65 months respectively compared to 10.72 months for all such Pool Officers.

2.3.8 The Government have also decided that all approved scientific institutions and public undertakings should be authorised to create a certain number of supernumerary posts to which appointments can be made from among the Pool Officers and from among scientists working or studying abroad whenever such candidates are available. Research units should also, if necessary be established to utilise the scientists' skill. These posts are kept outside the purview of the Union Public Service Commission for a period of two years in the course of which persons appointed to such posts are to be considered for absorption in a

regular post to be filled in consultation with the Commission.

2.3.9 Recently, an interministerial group consisting of representatives of organisations concerned with scientific and technical manpower and the issue of permits for travel abroad has been set up to ascertain whether some reasonably accurate estimates of the dimensions of the brain drain could be worked out.

2.3.10 The matching of supply and demand at regional and provincial levels in addition to achieving a national balance has also to be tackled if manpower planning should be successful. Since it is neither desirable nor possible to make every region self-sufficient in technical manpower resources, steps have to be taken to ensure inter regional mobility of technical manpower so that regional imbalances do not develop. A related and more urgent problem is to ensure supply of technical manpower to remote and backward areas. Somewhat similar is the distribution of technical personnel among various sectors of activity. Though this distribution is largely dependent upon market forces, Government does take some steps to attract personnel to the public sector to man essential services and projects in peace time and in an emergency, to facilitate the defence effort. These form a mixture of incentives and a small measure of compulsion, thus striking a mean between individual liberty and public welfare.

2.3.11 As mentioned earlier, another important aspect of technical manpower planning is to shape the skill equipment of personnel to the needs of society and industry in particular. Of late, there has been a growing concern of there being an increasing disparity between the kind of engineering manpower that the industry requires and that produced by the educational system. The need in industry is for two kinds of workers—supervisory and operational. While the advanced engineering knowledge of the graduate engineer can be considered to be satisfactory for supervisory functions (though even here his acquaintance with modern industrial processes needs to be considerably improved), the kind of operational ability expected of a diploma holder is not likely to be developed by making him go through a less advanced version of the graduate course. The practice in similar institutions in advanced industrial countries appears to be to develop a high degree of competence in an appropriately narrow operational field. The relatively high ratio of engineers to diploma holders (1:1.4) in India is a symptom of a situation in which the graduate engineer does not monopolize supervisory positions nor is the utilisation of the diploma holder confined purely to operational fields. If it is true that a diploma holder after acquiring some experience and/or an appropriate professional qualification is more or less interchangeable with a graduate engineer, it means, in effect that we are meeting the needs of industry only at the supervisory level and that operational manpower of high quality is not being produced by the educational system. As the number of positions in supervisory levels is bound to be limited and, as the less experienced graduate engineers may often have to yield place to the more experienced diploma holder, a certain amount of under-utilisation of the graduate engineer results. The authorities are

seized of this problem and are taking steps to settle the lines along which polytechnic education should be reorganized.

3. CONCLUSION

3.1 Over the years a large quantitative base for technical education has been created in the country. At the end of the Third Five Year Plan, the intake capacity in courses on engineering and technology stood at 24,700 seats in degree courses, 49,900 in diploma courses and 116,570 in craftsmen courses in the Industrial Training Institutes. By about the end of the last plan period (1966 March) an overall numerical parity between supply and demand of technical personnel had been achieved though this balance has been seriously affected during the last two years by the decline in the rate of growth of the economy.

3.2 Aside from the present quantitative imbalance between supply and demand of technical personnel which is expected to disappear once the economy picks up in the coming years, there is the more important task of improving the quality of engineers. The latter problem will receive greater attention in the coming years. So will the development research and design personnel in engineering and technology. This problem has to be dealt with urgently since, even if the necessary foreign exchange were forthcoming, it is doubtful whether such high-level talent can be imported from abroad on the scale required and for a long enough period. The race for rapid economic growth would make it difficult for advanced countries to spare such manpower. It will therefore, be necessary to develop such skills indigenously.

3.3 The speciality-mix of the supply has to keep pace with the speciality-mix of the demand. This can be seen in the case of Housing industry itself. Adoption of prefabrication techniques, improvements in construction techniques, use of new and sophisticated building materials would call for the development of a wide variety of skills. Again, programmes of large scale housing programmes

would need the services of Architects and Town Planners in larger numbers. As already mentioned steps would be taken to develop facilities for training in new and highly specialised fields like Nuclear Power Generation, etc. after the assessment of demand in these fields is completed.

3.4 The demand forecast methodology has to be improved, and the information base, whose inadequacy has come in the way of using more sophisticated methods in use in advanced countries has also to be strengthened. The Institute of Applied Manpower Research has been examining the efficiency of the different norms and approaches—global or sectoral—for forecasting demand. Estimates of demand made in India so far have been obtained on the basis of relationships between engineering employment and one of the factors like investment or output or workforce whether at the global level or at the sectoral level. An attempt to obtain demand estimates on the basis of a single relationship between engineers, investment, workforce and output is underway in the Institute.

3.5 Apart from regular collection of information needed for manpower planning purposes, it is also necessary to create manpower awareness at all levels. The perception of manpower needs is usually possible only at the operational levels. It is only if such need, where valid, gets communicated to levels at which remedial action is possible, that the information-link in the manpower organisation can be considered satisfactory. There should also be a regular and quick feedback of information on the achievement or shortfalls in physical targets from the different sectors of the economy to authorities concerned with planning of technical manpower. It is probably correct to say that manpower awareness of this kind is generally not to be found at the level of the firm/department and where such an awareness exists the vital movement of information upwards does not take place. In regard to other inputs like finance, raw materials or power, there is of course far greater alertness. Perhaps a periodical review of some kind from the manpower side may help in manpower awareness getting built into the planning process.

Assessment of Manpower Requirements in Building and Construction Fields***

By

Dr. S. P. Agarwal†

1. BASIC DEFINITIONS

1.1 Construction is an industrial activity which has been defined in the International Standard Industrial Classification. It includes construction and maintenance of a large list of items (e.g. buildings, houses, roads, railways, bridges, telegraph and telephone lines, dams, canals, tanks, tubewells, wells etc), provided there are certain establishments for which this is the main activity. It is to be noted that the construction industry does not include construction, repair and demolition work undertaken as an ancillary activity by the staff and for the use of an enterprise classified in any other division of the International Standard Industrial Classification. For example, excavating, overburden removal, shaft sinking and dredging, when undertaken in connection with mining, are classified under mining and quarrying. Similarly, if a factory which is classified under manufacturing constructs parking areas for the cars of the factory staff with the help of their own workers, the people engaged in this construction activity will still be classified under manufacturing because they belong to a manufacturing establishment. Therefore, from the point of view of International Standard Industrial Classification of all persons engaged in construction, we have to consider the main activity of the establishment which employs them. In many instances people engaged in construction in larger establishments form a sort of a sub-establishment. The question of recognising such sub-establishments for the purpose of Industrial classification is under consideration of the U.N. Group but a final decision in this regard has not yet been taken. (The definition being in terms of establishments is one of the causes why data on employment in construction differ from one source to another).

1.2 Manpower engaged in construction activity is generally classified in terms of occupations. For example, the construction of a house requires a large number of brick-layers, plasters and masons which are occupational categories. Some of the important occupations which are required in the construction activities are architects, civil engineers, surveyors, draughtsmen, accountants and auditors, painters, decorators and commercial artists, brick-layers, plasterers and masons, carpenters, blacksmiths, fitters, wiremen, truck-drivers, watchmen and chowkidars. Besides, construction establishments will also have their directors, managers and supporting clerical staff including typists, book-keepers, cashiers, etc.

2. TYPES OF CONSTRUCTION ESTABLISHMENTS

Construction establishments could be in the

public sector like C.P.W.D., State Public Works Departments, Railways, Posts and Telegraphs, etc. Construction establishments could also be in the private sector like consulting architects, construction firms, contractors, etc. In some cases a public sector undertaking gives a contract for construction to a private sector firm and therefore both public sector and private sector personnel are engaged in construction activity for which payment is ultimately made from public funds. Manpower employment pattern differs according to types of construction establishments.

3. TYPES OF CONSTRUCTION AND BUILDINGS

There are several types of construction and buildings. For example, the simplest thing that we think of is the construction of a residential house. Other types of construction include factory premises, roads, railways, telegraph and telephone lines, dams, canals, tanks, tubewells, wells. Within each type of construction there can be other sub-classifications, for example, 'pucca' construction, 'semi-pucca' and 'kuccha' construction. Within pucca construction there are further varieties in terms of the use of cement, steel, pre-fabricated material and so on. A multi-storeyed building requires a different type of construction activity, equipment as well as manpower from the construction of a single-storey building. Thus, there are technological variations in construction and buildings which affect manpower employment pattern.

4. ASSESSMENT OF MANPOWER REQUIREMENTS IN BUILDING AND CONSTRUCTION FIELDS

We have noticed earlier that the construction activity includes construction as well as maintenance. These two aspects can be related to different variables for purposes of manpower assessment. The most common variable with which the construction aspect is related for manpower assessment is investment. By constructing a building we are creating an asset and therefore the expenditure incurred in the construction of the building is a part of our investment. For maintenance purposes we have to take into account the totality of the buildings, roads, bridges, dams, etc, which have been constructed so far and which have to be maintained by the manpower engaged in it. Therefore, the most appropriate variable with which manpower engaged in maintenance should be related is the total capital stock of items constructed so far.

5. SPECIAL FACTORS INVOLVED IN MANPOWER ASSESSMENT FOR CONSTRUCTION

Some of the special factors which have to be

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taken into account are indicated below :

- (a) **Price changes of building materials, wages, etc.** While relating manpower in construction to the investment made in that activity, we should try to convert investment figures of different years to common price level. For example, we know that construction materials have become more costly during the last few years and therefore what we could construct with the help of 1 crore of rupees a few years ago will require more than 1 crore of rupees now. Some work on these lines has been done by the C.S.O. and the C.S.I.R.
- (b) **Changes in Technology**—We mentioned above that there are different types of construction, some of which utilise the traditional methods while some require modern technology. While looking into the future we should try to visualise to what extent modern technology may be utilised by different establishments.
- (c) **Changes in Productivity**—The productivity of workers engaged in construction depends partly on technology and partly on other factors including the availability of building materials, their skill and also on the weather. In countries like U.K. and U.S.A. the rate of productivity improvement in the construction activity has been estimated but no such study has so far been made in the Asian Countries.

6. CONCEPT OF GROSS, NET AND ADDITIONAL FIGURES

While calculating manpower requirements for construction we have to be very clear about gross, net and additional figures. For example, if we have a construction work force of 1,000 persons in 1967 who can handle and complete construction works of X crores of rupees during that year, we

will not require any additional workers except for replacement needs for our construction investment in 1968 also if the amount earmarked for that purpose in 1968 is only X crores of rupees. This means that employment in construction has to be viewed in relation to the time which is required to complete the project in hand. Since construction work has several phases and these require different types of workers in varying numbers, the estimates of manpower for construction are usually made in terms of man-days. For example, a Working Group of the Ministry of Works and Housing estimated in 1965 that for completing construction work worth Rs. 1 lakh, the following number of man-days are required: Masons 1390, Carpenters 765, Blacksmiths 190, Fitters 170, Misc. (Painters and Whitewashers etc.) 165, Wiremen 85, Unskilled 5450. The total number of man-years were then obtained by dividing the number of man-days by 300.

7. The manpower required for construction during a certain year may be taken to be equal to $A \times X$ Investment made in construction during that year, $B \times X$ value of capital equipment constructed earlier and to be maintained during that year, where A is the average manpower required for the construction of one unit worth of investment and B is the average manpower required for maintaining one unit worth of capital stock constructed up to that time. The total capital stock at any point is generally difficult to determine and therefore we may denote its value at a certain point of time by K . We have already spoken of adjustment for price changes in the amounts earmarked for construction for different years. We have also referred to the need for adjusting for changes in technology and productivity. If suitable assumptions can be made for these and if we have data for three different years we will get three equations to estimate A , B and K . In this way we can estimate manpower requirements for construction and maintenance in future.

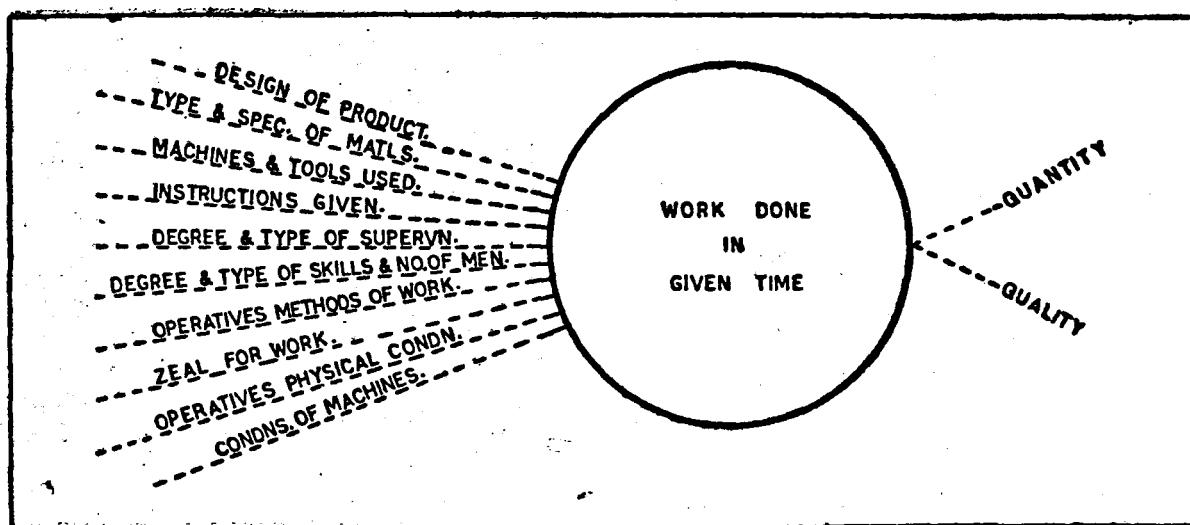
Importance of Productivity in the Building Industry and How to Achieve It***

By
Shri A. Niazi†

1. Productivity is defined as the ratio of output to input. It is usually measured in terms of quantity of output per unit of labour-time put in to produce that quantity. Output per unit of labour-time is in turn dependent on the capability of labour to produce. Attempts to increase productivity have, therefore, to be directed towards increasing the capability of labour to pro-

duce more in a given amount of time.

Capability to produce is determined by the prevalent socio-economic situation, technology and organization of work. The effect of the various factors on productivity can be graphically illustrated as follows :



Arrows on the left hand side of the circle represent the factors that determine the quantity and quality of output (arrows on the right hand side) as a result of work done in a given time. The time taken to do a certain job is determined by the factors indicated by arrows on the left of the circle. Cost has not been shown as a separate factor because it is in fact made up of the factors that have been listed.

It will be noted that some of the factors are totally out of control of the industry and some can be only partially influenced by it. For example, operative physical condition is essentially governed by the general standards of life in the country. An individual unit can bring about only marginal improvements through programmes of labour welfare. Similarly, choice of the type and specifications of materials and machine is subject to the availability of these items. Productivity is not only a means of enhancing the standards of life but also of generation and conservation of financial resources for building up the necessary technolo-

gical base. Though it is a long term objective, the productivity movement, particularly in developing economy has to be multi-directional and should help accelerate the economic growth.

However, most of the items listed in the diagram can be influenced by adoption of Scientific methods of enquiry and decision making. It is pertinent, in that context, to examine these factors individually and establish their effect on productivity in the Building Industry.

2. DESIGN OF PRODUCT

The ultimate product of the Building Industry is the building. The shape, size and provision of living or working facilities all contribute to the time and cost required to construct. Design determines the material cost, comfort, labour and all other elements of cost and utility. The Panel for factory buildings formed by the Building Projects Team had the following observations to make with regard to the design of a particular factory building.

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Sl. No.	Items	Views of the Project Authorities	Views of the penal	Effect on Cost and Consumption of Materials
(1)	(2)	(3)	(4)	(5)
1	Double sheeting for roof.	Helps in heat insulation and provides for induced ventilation. The extra cost is a small portion of the cost of the project.	With heights of 9·14 m. (30 ft.) to 22·86 m. (75 ft.) the insulating effect of the double sheeting is insignificant. Ventilation can be had through louvres.	The area of Factory is about 14 lakhs sft. The area of sheeting will be 15 lakhs sft. Taking cost of Asbestos sheeting and purlin, clamps etc. as 10·76 sq.m. (Rs. 1 per s ft.) the saving if double sheeting is not done is Rs. 15 lakhs. This apart saving in structural steel in purlins will be about 600 tons (Taking purlin to be of 10·76 lb. per s.m. of covered area) If all corrugated sheets are to be used the saving in cost will be much more.
2	Heights of buildings, 4,48,000 sq. ft. of workshops have a ht. of 50 ft. up to crane rail.	This is necessary from future functional requirements.	If layout plan is available only some portions need be of 15·24 m. (50 ft.) height. Others can be 9·14 m. (30 ft.).	Assuming 1/2 of this area can be reduced to 9·14 m. (30 ft.) height, the saving in steel will be about (1·50 tons) and saving in cost will be Rs. 12·25 lakhs.
3	Jib cranes about 850.	All columns at 15·24 m. (50 ft.) c/c have a Jib crane. The central columns have two such cranes one for each bay. Necessary from point of view of flexibility, only some cranes will be actually put but columns designed to take a crane at any time.	This is too much. With a layout diagram and a properly prepared flow chart is possible to decide which of the columns must be designed for jib cranes. Saving thus effected will be quite considerable.	There are 492 columns. Even if 100 of these are designed to take jib cranes which itself is on the high side, the remaining 392 will be of simple design which can be about 1/4 of the present section. Assuming all columns to be only 9·14 m (30 ft.) to gantry level the saving in steel will be about 400 tons, cost reduction will be Rs. 6 lakhs.
4	Design of trusses total area 15 lakh sft.	All trusses are of the northlight type including rackers. The live load is taken as (15 lbs./sft.) apart from wind and other dead loads.	151·46 lbs./sq. m. is too heavy. The rackers can be designed differently as lighter trusses.	Assuming we save 10·76 sqm (1 lb. sq. m.) in the racker it comes to 5·38 lbs. per sq. m. distributed all over as there are equal number almost of rackers and girders. The saving in steel will be about 300 tons and cost reduction will be Rs. 4·5 lakhs.
5	Welding (total area 14 lakh sft.).	Gantry girders may be welded. All other structures to be riveted only.	It is better to rivet the gantry girders and weld the entire roof structure and columns.	Even if trusses alone are welded the saving in steel will be 15% after accounting for the extra cost of fabrication. This comes to saving of 10·76 lbs./sq. m. or 600 tons. The saving in cost will be Rs. 9 lakhs. Due to reduction in weight by all those framings will accrue in foundations which has not been mentioned.
6	Flooring Area 14 lakh sq. ft.	20 cm. (8" cement concrete reinforced wherever necessary).	This is too thick. C. R. R. I. to be consulted. Most of the flooring need be only 10 cm (4") thick, locally increased thickness can be adopted. This can be fixed from the layout and flow of diagrams.	Even assuming the thickness to be 12·7 cm there is a 7·6 cm. saving thickness i.e., at Rs. 5·38 per s. m. saving in cost will be Rs. 7 lakhs for the factory & saving in cement about 3000 tons.
7	Canteen building area 64,000 sft.	This is also of steel construction.	This is unnecessary, concrete construction is better.	Saving in steel will be 240 tons. Extra cement required will be 280 tons. We assume there will be no financial saving.

Another example is that of the Construction of silos in a factory. The same Panel suggested a

change in the design which resulted in savings as follows:

Item	Conclusions	Saving in cost	Saving in steel	Saving in cement	Remarks
1. Silos	As detailed in report	Rs. 25 lakhs	1,500 tons	3,000 tons	This is in comparison with an approximate estimate prepared for silos by the Project Authorities.

3. TYPES AND SPECIFICATIONS OF MATERIALS

Materials are essentially chosen by the designer—the architect or the owner—and to that extent this item is a part of design. However, material accounts for a substantial part of a building's cost and therefore, merits a separate consideration. The

factory building referred to above was examined in detail as is evident from the recommendations. It will be noted that each of these recommendations result in saving of steel or cement or asbestos sheeting apart from saving in labour. The abstract of savings in materials and costs for the same building read as follows:

Item	Conclusions	Saving in cost (Rs. lakhs)	Saving in steel (tons)	Saving in cement (tons)	Remarks
1. Roofing	To adopt single sheeted roof with aluminium.	13	700*	..	*The saving here is more than shown in Appendix I owing to saving in purlins because of aluminium sheeting.
2. Height of buildings	Only maintenance and foundry blocks have been reduced in height.	1	50	..	
3. Jib cranes		5	300	..	
4. Redesign of trusses and racker		6	350	..	
5. Welding		9	600	..	
6. Flooring	Suggestions of the Panel will be incorporated as detailed in the report	7	..	3,000	
7. Canteen building			240	-280	There will be saving both in Steel & Cement, but this cannot be worked in the absence of detailed designs.
8. Saving in foundation		1	..		
	Total	42	2240	2720	
Redesigning of Phase II		90	8,000		Indeterminate frame analysis will form the basis of design

The Panel further highlighted the possibilities of savings in material by suggesting the use of reinforced concrete or steel adopting statically indeterminate structure instead of the usual rivetted steel construction. Design in reinforced cement concrete was expected to lead to a saving of 6,000 tons of steel in Phase 1 alone. The total savings in cost for the phase were worked out to be Rupees five million.

The Indian Productivity Team on Factory Build-

ings after a visit to U.S.A., Italy and Japan has suggested the use of a number of materials to economise and to functionally improve the buildings. These materials include ready mixed concrete and light-weight aggregates.

Another aspect to be considered in relation to materials is standardisation and reduction of variety. The following table illustrates the potentialities of variety reduction in the Building Industry.

TABLE TAKEN FROM BRITISH PRODUCTIVITY TEAM REPORT

Asphalt	102	11	89
Reinforcing bars	32	11	69
Boxboard (thicknesses)	244	96	61

Boilers : steel; horizontal; firebox heating	2,328	38	98
Brick, common rough and smooth face brick	75	2	97
Brick, sand lime	45	1	98
Ducts : pipes and fittings for warm air heating and air conditioning	5,580	759	86
Metal lath	201	57	70
Lockers, steel	65	23	64
Radiators, large, tube, cast iron	33	13	61
Slate, roofing	1,260	309	75
Taps : lavatory and sink (Brass)	1,114	76	93
Units, concrete building	45	22	51

4. MACHINE AND TOOLS

Mechanisation is one means of increasing the capability of labour to produce. A review of productivity in the Building Industry in Britain (British Productivity Council) for example, mentions that the use of rail mounted type of crane (or tower crane) helped save 1,000 man-hours and approximately £ 100 per house. The Indian Productivity Team on Factory Building has also recommended greater adoption of fork lift tracks, hoists and derricks in construction jobs.

Many mechanical aids can be locally fabricated. Similarly, the design of other aids like the rafts for economy in storage, transport, assembly, dismantling and work as well as for greater safety deserves careful attention. As a matter of fact the design of raft was among the first exercises in methods improvement and was initiated by Frank Gilbrath who was himself in the Building Industry.

5. INSTRUCTIONS

The provision of instructions is related to planning. Insufficient instructions imply insufficient attention to details by the planner. The planner in the case of building industry, can be the owner, the architect, the chief engineer, overseer or the Contractor. Some workers are instructed by gang leaders or supervisors who in turn get instructions from the engineers. The contractor bases his calculations and programmes on the basis of what the architect plans. An architect prepares his drawings to meet the requirements of the owner. Insufficient thought to what is required from the people who are engaged in planning creates confusion, leads to loss of time, material and money and affects the zeal and enthusiasm to work in a variety of ways.

The British Productivity Team, the Indian Productivity Team and the Review of Productivity in Building Industry in Britain have all stressed on the effect of detailed pre-planning on productivity. The architects in U.S.A. include in the drawings large scale construction details sufficient for intelligent bidding and for purposes of correlating all parts of the work. In addition, minutely detailed schedules are prepared and incorporated on the drawings in respect of doors, windows, fittings and all furnishings in order to secure clearer definition of the architect's intentions. Whenever

possible and in all cases where lump-sum bid is required, all the working drawings, specifications and schedules are completed in respect of the work of every trade and specialist service before tenders are invited. Each tenderer is provided with a complete set of information prepared by the architect. The purpose and reason for this practice in U.S.A. is described in "Architects specifications—How to write them" published by the American Institute of Architects as follows :

- (a) To enable the estimator to calculate the cost of all materials and labour required, and to do this quickly and accurately. The term "Estimator" includes the general contractor, sub-contractors, manufacturers and material dealers, all of whom may need to 'take off' the items of their work for estimate.
- (b) To guide the builder's superintendent in directing the construction of the building, avoiding errors and conflicts of opinion.
- (c) To enable the architect, his supervisor or superintendent to check the character and quality of materials and workmanship during erection and give him the authority of the written word in place of personal opinion.
- (d) To furnish instructions for the fabrication of shop and millwork, including information as to samples, tests and guarantees or warranties."

Clear instructions are similarly required by engineers and workers with respect to what is expected of them, the time within which they should complete the job and the source(s) of securing help if needed by them. This aspect of instructions has a reference to the planning of organisation, and execution of programme of the works.

The factor of supervision is tied up with planning and execution of work. It consists of instructing people, motivating them, helping them and providing the necessary man-power skills, materials and tools in time. It is also the responsibility of the supervision to train people and to develop in them the required skills.

6. OPERATOR'S METHODS OF WORK

The exact method of work adopted by a worker is largely governed by the material and the tools

he has to use. However, a number of improvements are possible in the working Method without changes in tools or materials or by slight modifications in these items. For example, the work among members of a coordinated group can be so divided that it leads to maximum utilisation of the workers as well as of the machines and implements used by them. A team of concrete mixer, carriers and layers, for instance, lends to such improvements. Layout of the work site and sequence of operations are other such instances where methods can be improved considerably without changes in other items. Sometimes, however, slight modifications in handling equipment and other aids facilities work method improvement.

7. ZEAL FOR WORK

Desirable labour—management relations, fair play, consistency in decisions relating to personnel problems play a major role in enhancing the morale of the working people. Methods of sharing the gains of productivity, such as financial incentive schemes and increase in wages commensurate with increase in productivity also motivate the workers to contribute greater effort.

8. TECHNIQUES FOR HIGHER PRODUCTIVITY

8.1 Productivity is essentially a management responsibility. This fact should be clear by a consideration of the factors that effect productivity and which have been discussed above. Almost all of them are within control of management. Labour plays only a secondary role in determining the level of productivity.

A number of techniques are available to the management to improve the efficiency of the concerned organisation. Before discussing the techniques, however, it is better to consider the role of techniques in the process (if it can be called that) of management.

8.2 One of the functions of management is to make decisions to solve its problems. The process of making decisions consists of:

Defining the problem,

Collection and examination of facts to determine alternatives,

Evaluation of alternatives,

Choosing the best alternate,

Giving effect to the chosen alternative,

Maintaining a check on progress.

The various techniques are meant to assist the management in the decision making process.

8.3 Some of the important techniques that have been tested all over and have proved valuable in attempts to raise productivity are discussed below:

8.3.1 *Work Study*—This is a general term and is used to embrace the two inter-dependent techniques of 'Method of study' and 'Work Measurement'. Work Study consists of systematic activities undertaken to investigate record, measure and improve what the people do, the tools and equipment used by them and the conditions of their work. It is in that sense a very important and powerful aid

in the decision making process of the management. Its uses and importance can be further clarified by a detailed consideration of the definition of Work Study.

Work Study is systematic because it follows a procedure for analysis of the problem which ensures consideration of its major components while at the same time allowing for examination of all factors that operate on the situation. It is in fact a disciplined manner of thinking about the problem and its solutions.

Its use in investigation can be more easily explained through an example. A management may be aware that the workers do not produce what they can in a day's work. The purpose of investigation then is to determine the causes for such a state of affairs and the extent of effect of each cause. For example, an 'Activity Sampling study' (a method of Work Measurement) may be carried out in this situation to get a measured evaluation of the manner in which workers spend their time. Such a study in a particular situation may reveal that they apply themselves to the work allotted to them for 40% of the available time and the remaining 60% is made up as follows:

(a) Collection of tools, getting instructions or materials and going to the allotted work station	5%
(b) Waiting for materials	10%
(c) Waiting for helpers, handling equipment or for other members of the team to finish their work	10%
(d) Delays due to other interfering factors, such as talking to supervisors, etc.	5%
(e) Away from work or idle at work place	30%
TOTAL	60%

Such studies, therefore, assist the management to formulate their problems in a more cogent manner. In the case of these results, for example, it is evident that further studies are required as follows:

(a) Development of a better method for planning and materials processing to reduce the time in collection of materials and tools, waiting for materials and for helpers.

(b) Better allocation of work among members of a team and re-adjustment of the facilities or use relationship for handling of materials.

(c) Development of motivational factors, such as financial incentive schemes, improvement in conditions of work and arrangement of other personal facilities to reduce idleness.

Irrespective of the technique that may be used, the purpose of an investigational study is to define the problem, establish the factors that give use to the problem and help deciding the future course of action. In one particular organisation engaged in construction work throughout the state the problem presented itself in the form of the Chief

Accountant having to withdraw money prematurely from fixed deposits to enable the Divisional Engineers to pay to the contractors. It was proposed to resolve the problem by centralising the procedure for payments. However, on further investigation the cause was found to be insufficient planning which did not permit forecasting the monetary requirements from week to week.

Work Study may also be used to record the existing or proposed methods of work indicating the sequence of activities, the relationship between group and members of a group, coordination between men and machines, etc. Such records are helpful in further examination of the facts, training of personnel and for imparting instructions.

Measurement is most often the measurement of work to establish the time that ought to be taken for performance of a certain work. This information is useful in many ways, such as those listed below :

- (a) Determination of requirements of labour;
- (b) Planning of the whole work;
- (c) Establishment of standard costs; and
- (d) Development of financial incentive schemes.

Apart from the uses mentioned above, Work Measurement data are essential for exercising control over performance for they enable assessment of what can be achieved and on that basis to fix targets of achievement.

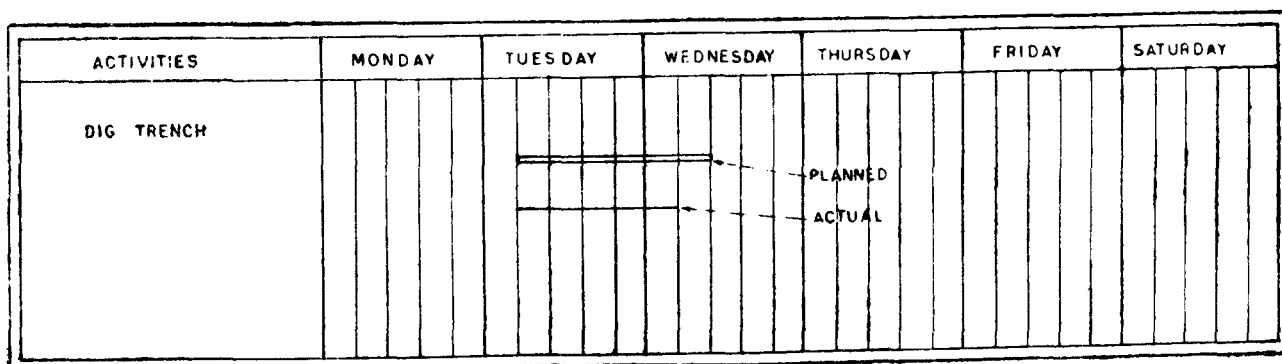
However, Work Study is most commonly used to improve on the existing situation. This aspect of Work Study application requires systematic examination to generate alternatives which are then subjected to feasibility and economic tests to select the alternatives which most effectively satisfy the technical, financial and human objectives. The type of improvements include those mentioned earlier in relation to the results of Activity Sampling.

8.3.2 *Planning and Control*—Reference has been made earlier to the need for planning in context of the necessity to impart complete instructions. Planning and Control would consist of the following steps :

- (a) *Pre-planning or technical planning*—This step refers to preparation of design in all its details and of presenting it in a manner and with the help of symbols which would be understood by every one concerned with the job. In relation to building industry, it is the work of the architect. It is needless to say that completion of this work in advance of commencement of execution helps to reduce loss of time, labour and material.
- (b) *Splitting of the works into smaller parts* (activities) and placement of these parts in a logical and economic sequence for execution.
- (c) *Scheduling of each activity to indicate its beginning and finishing timings.*
- (d) *Controlling the commencement of each activity*—through a properly designed system for release of authorities.
- (e) *Following-up to check and report the progress of work in order to make adjustments in the plan in light of deviations if any.*

The essence of planning and control is, therefore, thinking and arranging things in advance of actual execution and a constant check and review in light of the progress made.

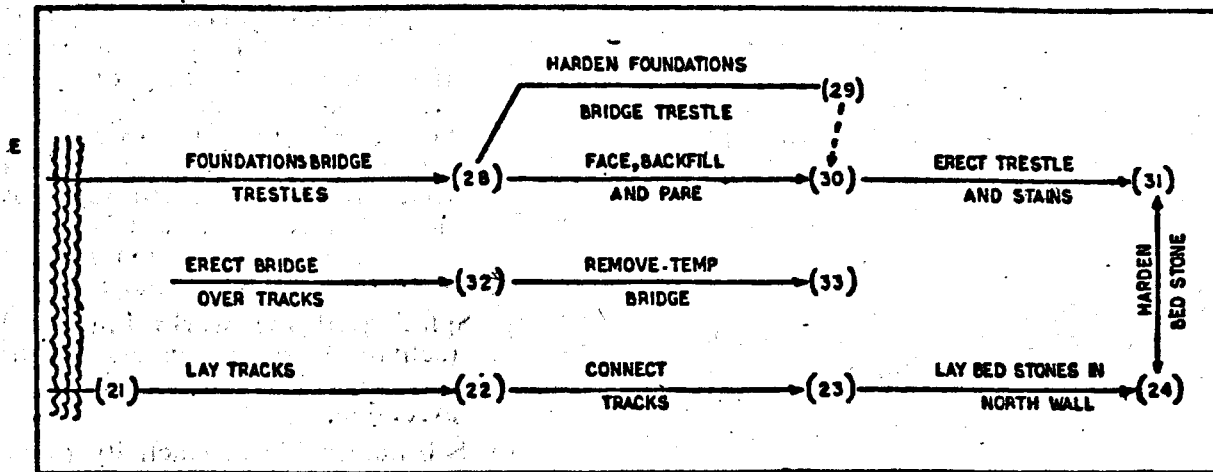
Gantt Charts are now commonly used to schedule and to maintain a check on progress. The principle of a Gantt Chart is that work performance is assessed in terms of time and a certain length of bar drawn across a page represents the time required or taken for an activity. For example, the activity of digging a trench of certain given dimensions using specified tools and number of men, may require ten hours. If it is scheduled to begin on Tuesday at 10 a.m. and end on Wednesday at 12 noon after ten hours of work it will be shown in the Gantt Chart as indicated in the figure. Progress is also similarly shown which in this case indicates that $4/5$ ths of the work was completed in 10 hours, i.e., by 12 noon of Wednesday when the progress was reviewed. The British Productivity Team has made a special mention of the use of this technique in building industry in the U.S.A.



Pert—Programme Evaluation and Review Technique (Pert) or the technique of Critical Path Scheduling (CPS) are essentially planning techniques. Their importance and applicability to the building industry makes it necessary to discuss the techniques under a separate head.

PERT and CPS are both based on the theory of net-works which are nothing more than a gra-

phical representation of the inter-dependencies of various activities in a project. A net-work looks something like what is given in the figure. Graphical representation of the works in the manner and the knowledge of time required for each activity enables scheduling of the activities in a logical sequence and to assure the use of resources to the minimum.



PERT or CPS are most readily applicable to large projects involving a number of inter-related activities. The benefits that are possible from the application of these techniques can be assessed from the following examples from building industry in India.

Construction of factory shed, installation of services and machines and trial of machines	190 days	175 days
Construction of a residential bungalow	24 months	15 months

Project	Duration as planned without PERT	PERT Planned Duration
Construction of cloth folding department and processing house	18 months	9 months
Construction of a small electronics factory building	270 days	170 days

9. CONCLUSIONS

Improvements of the type mentioned in the paper enable construction of more buildings from the same financial, material and human resources. They also help in reduction of cost of accommodation. If taken up as a drive all over the country, productivity is a guarantee for economic development and raising of the standards of living in our country.

Regional Differences and Characteristics in The Use of Building Materials in India for House Construction***

By
Miss P. Sen Gupta†

Lack of decent dwellings constitutes one of the serious deficiencies in the standard of living of an overwhelming proportion of the people in India. Houses in countless numbers are inadequately constructed and lack essential facilities. It hardly needs stressing that a disproportionately large proportion of houses in India are built in agricultural setting and they are constructed by the indigenous building materials which are readily available and their architecture is influenced largely by the age-long religious and social traditions prevailing in the region. In this paper an attempt will be made first to analyse the types of building materials available in the country and their distribution pattern and secondly to bring out the regional differences in the use of building materials and the characteristics house-types in rural and urban areas of the country.

1. TYPES OF BUILDING MATERIALS AND THEIR DISTRIBUTION PATTERN

1.1 The building materials which are used in India fall under two categories—indigenous and processed. The indigenous building materials are grass/leaves/reeds/bamboos, stone, mud, timber, etc., while the processed building materials are the burnt bricks, tiles, corrugated iron or other metal-sheets, cement, concrete, asbestos sheets, etc.

The indigenous building materials are in great demand in the rural areas, while the processed products are used mainly in the urban areas. Among the various building materials used in the country, mud is the predominant wall material and grass/leaves/thatch are the predominant roof materials.

1.1.1 *Indigenous Building Materials*—The distribution pattern of indigenous building materials in the country reveals that environmental factors, such as climate, topography and geology have a great impact upon their occurrences.

- (i) Grass/leaves/bamboo/reeds are available in abundance in the extremely humid north-eastern part of the country embracing Assam, NEFA, Nagaland, Manipur, Tripura, the Sub-Himalayan area of West Bengal and Bihar and Malabar and South Konkan coast.
- (ii) Mud is available almost all over the country, but its quality and thickness vary according to topography and geological character of the rocks upon which it is formed. The northern plain and coastal

plain are overlain by a very thick mantle of muds. In the Plateau part of Peninsular India mud-formation is vigorous only in the river-basins and structural depressions under humid conditions. The areas with a harsher, stonier and arid topography have a few inches of soil-cover. The western half of the Maharashtra Plateau, northern part of Karnataka Plateau, the lava Plateau of Saurashtra and Kutch are the areas with a very thin cover of soil. In the highly mountainous areas, frequent wash of soils retards the accumulation of muds on the tops and slopes of the hills.

- (iii) Stones which rank third in utility for house-construction among the indigenous building materials are basalts, sandstones, limestones, marbles, laterites, shales, slates etc.

Basalts—The Deccan trap area (Maharashtra, Gujarat and South-western part of Madhya Pradesh & northern part of Karnataka Plateau) is the store-house of basaltic rocks.

Sandstone, Limestone & Marbles—The Makrana sandstones and marbles of the Aravalli hills, are excellent building materials for walls available in the country. The Bhagwanpura limestone which is a metamorphosed pure dolomite and forming a great outcrop from Chittorgarh southwards about 1,000 feet thick is a high quality building material for house-construction. Some of the decorative buildings of Chittorgarh in Rajasthan are built of this colourful limestone. Some of the limestones of Vindhyaan age as found at Sabalgarh near Gwalior which display different colours have been used in the inlaid decorations in some of the beautiful mosques at Agra. The white Vindhyan sandstone of Khatu in Jodhpur yields an excellent flag stone eminently suitable for delicate carving and making the perforated windows and stone screens common in the buildings of Rajasthan¹.

Sandstones from Mirzapur district are used in the architectural moments of Sassaram and other places in Uttar Pradesh and Bihar. The Vindhyan sandstone specially of the Bhandar series, constitute a great store house of excellent building materials. They are worked in the districts of Bundi, Kotah, Dholpur, Bharatpur, Jaipur, Bikaner in Rajasthan. The stones are of light green, grey and red colours and may show streaks and spots or cream tints. Some are thick bedded, yielding slabs

Map Officer, Registrar General of India, New Delhi.

table for columns and beams as used in Buddhist stupas in Saranath, Sanchi, etc. The Moghul forts at Delhi and Agra, the Akbar's palace at Fatehpur Sikri, are built of red sandstone of the Vindhyan series.

The Cuddapah ranges in southern Andhra Pradesh also contain sandstones and limestone fit for house construction. The limestone of the Palnad region (Guntur district) particularly the Narji limestone are excellent building and ornamental stones. They have been used in the Buddhists sculptures of Amravati'.

The Himalayans in the north-west and north-east contain sandstone, schists, shales and slates which are also used for building houses.

Ferruginous Laterites—They are found in the Western Ghat area of Kerala and Mysore State where warm and humid climate with well distributed rainfall and good drainage lead to the formation of laterites through weathering of crystalline rocks. They are used in Kerala State for houses.

1.1.2 Processed Building Materials—(i) The processed building materials are usually the products of factory industry the raw materials for which are stones, metals and slags of the metallurgical industries, etc. Limestone is the basic raw material for cement and concrete. There are six distinctive regions with limestone reserves for supporting cement industry in India—(i) the Shillong Plateau (ii) north-eastern peninsular plateau, (iii) Saurashtra Plateau, (iv) Madurai-Coimbatore region, (v) Karnataka and Rayalaseema area; and (vi) the outer-Himalayan area. Within a span of fifteen years the capacity of cement manufacturing production in India increased almost four-fold from 3.16 million tons in 1951 to 12.2 million tons in 1965-66. Nevertheless the production is not sufficient to meet the demand of the country.

Bihar is the leading producer of cement in the country and it supplies cement to its neighbouring States of West Bengal, Orissa and Assam. Factories of Katni-Satna area of Madhya Pradesh supply cement to Uttar Pradesh. Rajasthan, one of the biggest producers of cement in the country, supplies its neighbouring States of Punjab, Delhi, Uttar Pradesh and Madhya Pradesh. The requirements of Western Maharashtra are met from factories in Gujarat and Northern Mysore. Cement produced in Madras is sent to Kerala and Mysore.

(ii) *Burnt and unburnt bricks and tiles* are produced in the areas where mud is available in abundance. Their production is much more widespread than cement.

(iii) The production of *corrugated metal sheets* in the country is small due to the limited supply of metals.

2. REGIONAL DIFFERENCES IN THE USE OF BUILDING MATERIALS IN HOUSE CONSTRUCTION

From the foregoing analysis it is clear that India possesses diversified building materials distributed all over the country. The use of these building materials has varied not only from rural to urban areas but also from one region to another.

A geographic study of the use of building materials in different parts of the country would reveal that environmental and socio-economic factors have a great impact upon the choice of building materials for house construction in the country as discussed below:

2.1 Rural Houses—Rural houses in India are constructed mainly with the indigenous materials and in traditional skill. According to the 1961 Census about 56.9% of the census houses in rural areas used mud as wall-materials and 46.0 per cent used grass/leaves/reeds/thatch as roof materials.

2.1.1 Matting-Walled/Thatched Houses—In rural areas of Assam, Sub-Himalaya districts of Bihar, Manipur, Tripura, Nagaland, NEFA, Andaman & Nicobar Islands and Sikkim, the abundant availability of grass/leaves/reeds/bamboos, etc., has stimulated the use of these vegetative materials for wall and roof constructions. More than 90 per cent of the rural houses in this part of the country used grass/leaves/reeds/bamboos for wall construction. The walls of these houses made of bamboo-mats or reeds plastered with muds and their roofs are thatched with grasses and leaves set in bamboo-frames in slanting manner to shed off rainfall. In Upper Assam Valley, in United Khasi & Jaintia Hills district & Nagaland a good proportion of (33.4 per cent) rural houses have wooden walls.

2.1.2 Mud-houses—Rural houses with mud-walls and tiled roofs are spectacular in the eastern part of Madhya Pradesh, Uttar Pradesh, south-western part of Bihar and Gujarat Plain. In the first three areas many of the houses are impoverished huts reflecting the mass scale poverty of the people, while in the latter area the houses are well constructed and durable reflecting the better living conditions of the rural people. The entire east coast region together with its contiguous districts stretching from Bhagirathi delta down to Cape Comorine, the Terai region of Uttar Pradesh and Bihar and Rajasthan plain show marked preferences to mud huts with the roofs of thatch. There are, however, some exceptional areas where houses are of burnt bricks and tiled roofs. These are the districts adjacent to the metropolises of Calcutta (24-Parganas, Howrah, Hooghly) and Madras (Chingleput, North Arcot and South Arcot), and in the Krishna-Godavari deltas. About 56.9 per cent of the dwellings in the rural area of India are mud houses and 46.0 per cent of the houses are thatched with grass/leaves.

Such are the general features in the selection of wall and roof materials in humid eastern part of the country, but with regard to the layout and construction methods there is a marked variation not only from State to State but also from one district to another. Socio-economic factors other than environment govern the design and layout of these houses. A good number of rural houses in Terai region of West Bengal show rectangular mud-plinth with walls of bamboo-mats and thatched gables, pitched high to shed off the rain and ingeniously designed to face the strain of cyclone and the houses in Bhagirathi delta are of muds with convex roofs of thatch. Against these rectangular bamboo or mud huts of West

Bengal may be compared to the conical huts of Andhra State. In the coastal districts of Srikakulam and Vishakhapatnam these conical huts are with a very steep roof of Palmyra thatch reaching the ground. In Nellore districts some of the conical huts have no walls. They are small and low conical sheds hardly 1.8 to 2.4m (6'-8') diameter made up of Palmyra leaves with a very small entrance". They are "inhabited by the tribe Yenadis—who are the agricultural labourers as well as domestic servants of the area". A distinct change in house type is visible in Krishna-Godavari deltas where peasants are relatively well-to-do. The houses are more airy and roomy. They are rectangular in shape, with mud-walls and roofs covered with paddy straws arranged and tied ingeniously by ropes which are also made of straws.

2.1.3 Stone-Houses—Stone ranks third in importance as the building materials of rural houses in the country. About 12 per cent of the rural houses in the country are of stone walls and 11.6 per cent use stone in urban areas as wall material. Stone houses are common in the Aravalli hills and its foreland areas & in the western part of Saurashtra and Kutch, in south central Peninsular Plateau (12 districts of southern Maharashtra, six districts of northern Mysore, three districts of Rayalaseema Plateau) and in the north-western Himalayas. The dominant factor in the selection of stones for house construction in these areas is their enormous reserves of building stone; some of them are of excellent quality ornamental stones.

The stone houses in rural Rajasthan are thatched with corn-stalks or grasses; those in Saurashtra and Maharashtra have tiled roofs. Houses in the Himalayan region have walls usually of limestone and sandstone with roofs of slates, shales, schists, etc. The Kashmir Valley is an exceptional area with a mosaic of houses of unburnt bricks, burnt bricks, and mud with roofs of grasses, leaves and wooden chips. The dry Karnataka Plateau of Mysore and Rayalaseema area of Andhra Pradesh (Kurnool, Anantpur, Chittoor districts) show 50 per cent of the rural houses built of stone-walls and the roofs of flat stone-slabs supported by wooden rafts.

2.1.4 Burnt-Brick Houses—The use of burnt bricks for house construction is visible only in those districts where rural economy is more developed. The Punjab Plain, the Krishna-Godavari delta of Andhra Pradesh, the Hooghly delta of West Bengal, Coorg and Bangalore districts of Mysore, North Arcot, South Arcot, Nilgiri and Chingleput districts of Madras State, Thanai and Poona districts of Maharashtra State, Dhanbad and Patna districts of Bihar show an appreciable proportion of their houses built of burnt bricks. The availability of mud in abundance coupled with the demand for burnt bricks has given rise to a number of brick kilns and factories in the rural part of these areas. Nevertheless, burnt brick houses in rural areas are only 9.2 per cent of the total. Except those in Bangalore and Coorg districts, these houses are thatched with grasses/leaves/straws or with bricks and lime. Houses in the remaining districts have tiled roofs.

2.1.5 Unburnt-Brick Houses—Only 7.5 per cent of the houses in rural areas use unburnt bricks as wall-materials. The major concentration of

this type of houses is in the western part of Uttar Pradesh and Punjab Plain and its contiguous area of Rajasthan. In Uttar Pradesh the roofs of these houses are made of clay interwoven with leaves and twigs or dried leaves supported by wooden beams. In other areas the houses have flat thatched roofs.

Concrete Houses—The houses made of cement and concrete are rare in the rural areas. Except the houses of well-to-do people and those constructed for public utilities and other services, such as hospitals, schools, offices, the use of cement and concrete for rural houses is insignificant. Only 0.1 per cent of the census houses in 1961 was built of cement and concrete.

A geographical study of the rural houses with regard to their wall and roof materials and their layouts and designs reveals that no house is typical of the State or the country as a whole. The house structure varies not only with the regional setting, but also with social and economic conditions. Houses in some regions present an infinitely depressing picture and much of the rural houses throw light on the impoverished state of the rural people in the country.

2.2 Urban Houses

2.2.1 The great majority of the towns in India have still very strong rural elements. About 71.7 per cent of the total 2,700 census towns in 1961 show population size less than 20,000 and they support nearly one-fifth of the country as urban population. Much of these small towns are slightly bigger than the market villages with some administrative functions. Houses in these small towns are far from the urban pattern. Two or three streets line with thatched or tiled mud huts occasionally alternating with burnt brick/stone/concrete houses are the typical urban feature of small towns in India. This feature stands out most prominently in the under-urbanised States and Union Territories. In the States of Assam and Orissa, eastern part of Madhya Pradesh, Manipur, Tripura, Nagaland where such small towns domineer the urban landscape, the urban houses in overwhelming proportion resemble the houses. In Manipur 89 per cent, Tripura 85 per cent and Assam 58 per cent of the urban houses have walls of bamboos or reeds plastered with muds and roofs thatched with grasses/leaves. In Orissa and Eastern Madhya Pradesh mud forms the predominant wall materials for 40 per cent of the urban houses and tiles, the predominant roof material for 80 per cent of the houses. A similar feature is visible to some extent in urban areas of Madras, Mysore and Andhra Pradesh States. About 13 districts out of 20 in Andhra Pradesh, 8 districts out of 13 in Madras, 10 districts out of 19 in Mysore show more than 40 per cent of the urban dwellings as mud-huts compared to 21.5 per cent for the country as a whole.

2.2.2 Industrialization and urbanization with the increasing level of living in cities and metropolises of India have created a great demand for permanent dwellings made of burnt bricks, stones, cement and concrete. Modern housing in some of the metropolitan cities goes beyond the construction of single or double storeyed buildings of burnt brick/stone/cement. The staggering growth

of population necessitated the construction of multi-storeyed buildings of burnt bricks/concrete for housing the ever-increasing size of the population.

2.2.3 The frequencies of permanent dwellings in urban landscape are more in the western half of the northern plain and the peninsular plateau than in other parts of the country. The Punjab Plain and north-western districts of Uttar Pradesh exhibit more than 80 per cent of their urban-houses made of burnt-bricks, but the roof materials are not always of permanent nature. The use of grasses/leaves/straws as roof materials is very common. In Gujarat and Rajasthan the urban houses are conspicuous by the use of stones which are available in quantity and quality in the locality.

2.2.4 The most distinctive contributions to modern urbanism are the hill stations, cantonment areas, the new industrial and administrative towns and metropolitan cities and their conurbation areas, where more than 90 per cent of the

houses are of permanent structure with modern amenities. The touch of modern urbanization is also visible in many of the Class I cities (Population 1,00,000) specially the administrative headquarters of the State. The old part of the city with a heterogeneous mixture of permanent and semi-permanent houses stands in marked contrast with the new part of the city with planned development of roads and houses of modern architecture.

3. It may be concluded that housing conditions are poor in many parts of the country. A large section of the people do not have a conventional permanent dwelling where they can live a decent life. In the rural areas, rustic houses, which are built crudely by indigenous materials, are universally inhabited. Houses which are made of waste materials are quite common in the suburbs of metropolitan cities, with heavy immigration, such as Calcutta, Bombay, Madras, Delhi, etc. Involuntary doubling-up of households is a social problem caused by the shortages of housing in all the big cities and metropolises of India.

TABLE 1

Percentage Distribution of House-holds by Predominant Material of Wall (Total)

Grass, Leaves, Reeds or Bam- boo	Timber	Mud	Unburnt Bricks	Burnt Bricks	C. I. Sheets or other Metal Sheets	Stone	Cement Concrete	All other Material
1	2	3	4	5	6	7	8	9
11.34	1.25	50.60	7.01	16.70	0.39	11.90	0.41	0.40

TABLE 2

Percentage Distribution of Households by Predominant Material of Roof (Total)

Grass, Leaves, Reeds, Thatch, Wood or Bamboo	Tiles, Slate, Shingle	Corrugated Iron, Zinc or other Metal Sheets	Asbestos, Cement Brick and Lime Sheets	Concrete and Stone	All other Ma- terial	
1	2	3	4	5	6	7
41.41	35.31	5.50	0.42	3.12	4.36	9.88

TABLE 3

Percentage Distribution of Households by Predominant Material of Wall (Rural)

Grass, Leaves, Reeds or Bamboo	Timber	Mud	Unburnt Bricks	Burnt Bricks	C. I. Sheets or other Metal Sheets	Stone	Cement Concrete	All other Material
1	2	3	4	5	6	7	8	9
12.5	1.3	56.9	7.5	9.2	0.1	12.0	0.1	0.4

TABLE 4

Percentage Distribution of Households by Predominant Material of Wall (Urban)

Grass, Leaves, Reeds, Thatch Wood or Bamboo	Timber	Mud	Unburnt Bricks	Burnt Bricks	C. I. Sheets or other Metal Sheets	Stone	Cement Concrete	All other Material
1	2	3	4	5	6	7	8	9
6.0	1.1	21.5	4.6	51.5	1.5	11.6	1.7	0.5

TABLE 5

Percentage Distribution of Households by Predominant Material of Roof (Rural)

Grass, Leaves, Thatch, Wood or Bamboo	Tiles, Slate, Shingle	Corrugated Iron, Zinc or other Metal Sheets	Asbestos, Cement Sheets	Bricks and Lime	Concrete and Stone	All other Material
	2	3	4	5	6	7
64.0	35.4	4.1	0.2	1.5	2.0	10.8

TABLE 6

Percentage Distribution of Households by Predominant Material of Roof (Urban)

Grass, Leaves, Reeds, Thatch, Wood or Bamboo	Tiles, Slate, Shingle	Corrugated Iron, Zinc or other Metal Sheets	Asbestos, Ce- ment Sheets	Brick and Lime	Concrete and Stone	All other Material
1	2	3	4	5	6	7
20.0	34.9	12.1	1.5	10.6	15.4	5.5

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VIII

**HOUSING POLICY, SCHEMES, PROGRAMMES &
ADMINISTRATION**

International Action for Housing and Its Relation to World Regional Population Growth*

By
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SUMMARY

Section I of this paper deals with the growth of population and its rate of increase in the world as well as the regional distribution of the world population. In Section II the process of urbanisation in the world as well as its regional characteristics have been explained along with the effect they have on the need for housing and aggravating the problem of housing in underdeveloped countries. Section III presents an exercise about the housing needs for the world population during the remaining years of the present century with specific emphasis for the years 1975 and 2000. As a part of the exercise, calculations of investments required for house construction in the world as well as in Asia have been made. As a result the exercise demonstrates the gravity of the task involved. Section IV makes a hypothetical study of the capacity to construct houses for different income groups in terms of capital investment in rural and urban areas of India on the basis of the data thrown out by the NSS draft Report No. 82 based on NSS Round—12. This study underlines the seriousness of the problem of providing houses in rural and urban areas of the less-developed countries. Section V, in the background of the calculations reached from the points discussed in earlier sections concludes that 'for solving the housing problem in less developed countries the co-operation of other nations, particularly the richer nations is at once called for'. It lists various ways and means for international action to help out the less developed countries in arresting the worsening of the housing situation in less developed countries.

1. WORLD AND REGIONAL POPULATION GROWTH

1.1 It is axiomatic that population in all its ramifications forms raw material for shaping and studying all human affairs and activities. Demographic movements mould the society and they in turn also get moulded by the society. Hence, a brief account of the world population and its movements is called for. Based on the careful researches of Carr. Saunders for the period 1650 to 1920 and thereafter on the compiled data by the Population Division of the United Nations it is estimated that world population more than quintupled in 1960 as compared to a population of 545 million in 1850—showing an average annual rate of increase of 0.53 per cent. However, breakdowns of population data for short periods suggest quite a different picture. For 1650—1750 the average annual rate was 0.29 per cent increasing later on to 0.88 per cent for the fifty-year period of 1900—1950; again, during the present century for still shorter periods the annual rate is of a fluctuating character—having been 0.59 per cent for 1900—1920 and 1.11 per cent for 1930—1940 with a slight tapering off for the decade 1940—50 on account of Second World War. But this rate of average annual increase again jumped to 1.72 per cent for the decade (mid-1950 to mid-1959)—and now World population for mid-1959 is estimated at 2907 million and for mid-1960 at 2972 million.‡

1.2 Against the setting of the changes in world population and its average annual rates of increases, in respect of percentage distribution of the population over different major regions, there is another type of fluctuating trend. Nonetheless, a great majority of world population has remained always inhabited in Asia. During the course of last three

centuries the regions in which there was increase in percentage share of population are Europe and North America as well as South America; whereas share of Asia and Africa fell because of great movements from Africa to North America and Europe. In spite of this, a comparatively stable geographical distribution of population is observable after the World War I and up to the end of the forties. However, due to the enunciation and implementation of the programmes of social and economic development in the newly independent nations of Asia and Africa and in the under-developed countries of South America, the population growth has been accelerated in these regions—often jeopardising the success of much cherished developmental plans. All these three regions are less-developed continents and are inhabited by three-fourths of the world population and any increase in their rates of population growth tends to eat up the very vitals of economic growth and welfare. For example, it is estimated that population in Latin America, and Asia is now growing at about 2 per cent per annum—as it is already more than 2 per cent in India and China. Even in the U.S.A. and the U.S.S.R. the rate of growth is about 1.7 per cent. China, India, the U.S.A. and the U.S.S.R. have amongst them half the population of the world and the rise in population growth rates of these regions and countries does convey that the size of world population will grow at much larger rate and volume every decade.

1.3 According to UN population projections¹ of world population, Asia, Latin America and Africa will have a further rise in their shares of world population at the cost of North America and Europe (including the U.S.S.R.) as can be seen from the projected data in Table 1.

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NOTE :—The views expressed in this paper are of the Writer and do not necessarily represent the views of the National Buildings Organisation.

‡For 1960, in Table-3, the world population has been taken at 2960 million.

¹The Future Growth of World Population—pages 23-24 (Population Studies No. 28, 1958). (It may be noted that now the population will be larger for 1975 and 2000 as the growth rates have further increased.)

TABLE I—Estimated Population and its projections for the World and the Continents

(nearest million)

Year	World	Africa	North (a) America	Latin (b) America	Asia (c)	Europe (incl. USSR.)	Oceania
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1150	2497(100)	199(8.0)	168(6.7)	163(6.5)	1380(55.2)	574(23.0)	13(0.5)
1975	3828(100)	303(7.9)	240(6.3)	303(7.9)	2210(57.7)	751(19.6)	21(0.5)
2000	6267(100)	517(8.2)	312(5.0)	592(9.4)	3870(61.8)	947(15.1)	29(0.5)

a America North of Mexico.

b America South of the U.S.A.

c Excluding Asiatic part of the U.S.S.R.

NOTE.—Figures in bracket indicate the percentages of world population.

1.4 In Latin America and Asia as the projections show, the increases are of 263.2 per cent and 180.4 per cent respectively for 2000 AD as compared to 1950 AD. Asia's share of world population would rise to 57.7 per cent in 1975 and to nearly 62 per cent in 2000; and that of Latin America would rise to 9.4 per cent in 2000. However the shares of Africa and Oceania will remain almost constant. On the other hand, the shares of North America and Europe (including USSR) will dwindle.

1.5 The present century, in the background of the past and in the perspective of the future, would be a unique phase in human history both for progress in science as well as for the rapid growths in the number of human beings. No previous century experienced an increase in the number of human species as rapid as would be for the present century, nor can it be conceived of the vast changes in social and economic institutions which will be required to sustain this size of the population. It raises questions as regards the shape of things in respect of levels of living of the world population in general and of population in different regions in particular; and it is significant to remember that the problem cannot be looked merely in terms of regions, because science has annihilated the distances and has made the regions and the whole world interdependent and interrelated.

1.6 Three-fourths of the world population, inhabiting Africa, Asia and Latin America, possessing less riches and power than those of North America and Europe are raising their stock at a faster rate; they are also conscious of their poverty, poor health and housing conditions, high rate of illiteracy, etc. and are in ferment for better life and human dignity. They are also aware that all their efforts and objectives for economic growth and higher levels of living will be thwarted by the unprecedented increases in their population. Their efforts to the maximum can raise them to European standard of living in about 40 years if the population remains unchanged—which in itself is impossible and it exemplifies the nature of the herculean task which these regions are faced with. In short, in these regions the population is growing at an 'explosive' rate; and in particular, the situation in Asia is much more of an agonising character, because here also the population quintupled in three centuries (1650

to 1950) keeping company with world population growths or in reality shaping the rate and size of world population growths notwithstanding eight-fold increase in population of N. America and Oceania as the latter in terms of its small size was of no consequence for the size of the world population. The basic fact underlying the great increase has been the industrial revolution and in its trial the "demographic gap" caused due to "death control" and this experience is likely to continue unabated in Asia without any clear prospect of declines in births.

2. POPULATION DISTRIBUTION AND URBANISATION PROCESS

2.1 Regional, national, physical, economic or social planning of less developed continents (and more so in Asia) must necessarily deal with these population increases in retrospect and in prospect. The knowledge of the distribution and composition of these population increases is of a great value for planning purposes. The process of urbanisation, *i.e.* the dynamics of the distribution of population in urban and rural areas or the migrations that take place from rural to the urban areas is of special significance. The concept in respect of designation of areas as urban or rural is so closely bound up with historical, political, cultural and administrative considerations that there is always a difficulty in developing uniform definitions. For example, the way in which cities are delimited differs from country to country. The urban agglomeration, has sometimes been defined as including the suburban fringe or thickly settled territory lying outside of but adjacent to the city boundaries. Again, in many countries cities are considered synonyms with localities having fixed boundaries with an administratively recognised urban status which is usually characterised by some form of local governments—known by various designations, such as, cities, towns, boroughs, municipalities, and by some form of local government; and in others, *e.g.* in Japan, Ryukyu Islands and France the 'City' is defined as an administrative division composed of a populated centre and adjoining territory which may be distinctly rural in character or may contain other type of quite separate urban agglomerations.

2.2 The differences are sometimes so extreme that an urban status is granted to places with as few as 250 inhabitants in Denmark, while in Korea the lower limit is 40,000 persons. In Northern Ireland

and Belgium, urban population means places with urban status, regardless of size; in Israel, it implies predominantly non-agricultural centres, in Malta, it is defined as built-up areas devoid of agricultural land. In India, for 1961 census the designation of the town (or urban area) has been put to a stricter definition by applying three criteria: (1) a population of not less than 5,000, (2) a density of not less than 3.86 per ha (1000 per sq. mile); and (3) the employment of not less than 75 per cent of the adult male population in non-agricultural pursuits. This new test has eliminated many areas of a pronounced rural character which had previously passed as towns; thus causing a heavy pruning of towns. It is this definition which, as given by provisional data, has kept the proportion of urban population at little over 17% for 1961—a figure that was thrown out in 1951 census in different set of definition.

2.3 Hence, so long as the type of locality involved remains unchanged from year to year, the time changes in the proportion of the population living in places of 20,000 or more and in places of 100,000 or more provide a useful index of urba-

nisation. They also are useful for analysing world and regional trends. Since they are relatively free from the complexities introduced by national definitions or urban status.

2.4 The regional differences in the pattern of absorption of urban population have existed, demonstrating the variations that exist due to history as well as on account of economic and social set-up of the regions. In the West the population increase was absorbed by the consequential urbanisation in the wake of industrialisation. The industrialisation in the West was the main contributory factor for the urbanisation of the world during the 19th century; but during the 20th century, world urbanisation was largely influenced by the growth in the urban population of Asia. "Between 1900 and 1950 the large-city population of the world increased by 254 per cent; that of Europe and North America however, already at a relatively high level in 1900, increased by only 160 per cent compared with an increase of 444 per cent in Asia".² The intensity of this fact can be further demonstrated from data in Table 2.

TABLE 2—Rate of World Urbanisation (Population in Cities of 100,000 and over) by Selected Regions since 1800

Periods	Per cent increase in population of cities of 100,000 and over		
	World	Asia	Europe (incl. whole of the USSR) and America
(1)	(2)	(3)	(4)
1800—1850	76	24	184
1850—1900	222	59	337
1900—1950	254	444	160

(After Philip M—Hauser—*ibid*)

2.5 The intensity in absolute figures can further be seen more in Asia where more than 1/3rd of the total urban population (of larger cities) resides and also it is here that about 1/3rd of the larger cities of the world numbering over 1400³ are located. Combined strength of the larger cities in Europe and North America is somewhat smaller than in Asia. Again, it might be stated that according to expert estimates between 1950 and 1975, increased population in Asian cities will account for over half of the world increase in residents of cities of both 100,000 and over, and 20,000 and over; and by 1975 in Asia alone city population (of towns of 20,000 and over) will be about 40 per cent of the world population. However, considering the size of the population, it is clear that the "degree of urbanisation" is much higher in the advanced countries of Europe and North America than is the case in Asia. An important point of distinction that emerges is that the process of urbanisation in Asia has been shaped more due to the 'push' factors whereas in Europe and America it was more due to the 'pull' factors. In Asia and

so also in other less developed regions of the world, urbanisation process in its trial, brought in problems having elements alien to the indigenous cultures and having explosive and artificial character of unhealthy agglomerations full of obstacles and paralytic ingredients for the growth of human personalities; and urban blight and unhealthy housing has been the rule barring few exceptions.

2.6 In spite of the ugly situation for 'housing' in urban areas, it stands very much behind in the queue as against various other candidate-sectors of industry, transport, power and agriculture in the planning philosophy of these countries. The future of urban development, and, therefore, of housing conditions in the less developed regions of the world offers a grim picture. Taking the case from the view of the growth of population and its concomitant of urbanisation, the urban population in Asia (for towns of 20,000 and above) is likely to increase by another 4374 million by 1975 A.D. as compared to 1950 or by 220 per cent. About 560 million of Asians would live in the cities of

²Implication of population trends for regional and urban planning in Asia and the Far East—by Philip M. Hauser Page 23 "Regional Planning—Housing, Building and Planning" Nos. 12 & 13" (United Nations—1959).

³According to the data compiled from UN Demographic Year Book 1960.

20,000 and over or 26% of the total Asian population as compared with little over 13 per cent in 1950. The new urban population will require about 120 million new houses of modest size (on an average each costing about Rs. 10,000/- only) costing about 1,200,000 million approximately equal to twelve times the total capital investment envisaged for the Third Five Year Plan of India. In India, the population in cities of 20,000 and over is expected to be at about 100 million, showing an increase of 57 million people requiring only in these towns about 12 million houses costing Rs. 120,000 million. Again, if the observed rule of urbanisation continues, the Asia's large city population will increase by 234 millions in 1975 as compared to 1950 data, when various problems of metropolitan complex would arise besides that of housing.

2.7 It may be summed up that Asia is less urbanised than any of the other continents, save Africa. Her population now having more than 55 per cent of the world population has only about one-third of the world's inhabitants residing in cities with 20,000 or more persons. Further, in Asia it is less than 15 per cent of her population that lives in cities of 20,000 or more, compared with the world average of 21 per cent, 42% in North America (North of Rio Grande) and 35 per cent of the population of Europe (excluding the USSR).⁴ Similarly, only 8 per cent of Asia's population lives in cities of 100,000 or more, compared with the world average of 13 per cent; 29 per cent in North America; and 21 per cent in Europe. With the exception of Japan, Hong Kong and Malaya (including Singapore) the countries of ECAFE region are one of the least urbanised, in spite of the fact that in absolute figures they have many large cities and large urban population than either in Europe or America.

2.8 Despite the low degree of urbanisation and urbanisation rate, Asia may in one sense be called over-urbanised. Many of the Asian countries have

a larger urban population than is justified by their degree of industrialisation or general level of economic development or in terms of the proportion of the population engaged in non-agricultural pursuits. This phenomenon is exhibited and that too as a matter of compulsion because of the low land/population ratio arising from rapid population growth in relation to agricultural resources; people leave rural areas as the existing social, land tenure, and technological situation in rural areas do not afford a livelihood on already overpopulated land or seasonality of employment in agriculture or due to the obsolescence of handicrafts. The special factor of choked-up population in Asian cities has been accentuated as a result of disruption and disorganisation produced by Second World War and swelling of urban population by refugees, and the psychological lure of city for providing military service, etc. Planners in Asia have, therefore, to bear in mind the great need for economic and urban development, and for that purpose programmes for providing infra-structure investment including that of investment in housing have to be prepared well in advance.

2.9 In terms of the national needs, housing the citizen must become the responsibility of the State, just as public health and national defence⁵ are; and, therefore, house-building should not be looked into as a profit or loss proposition. The cost of building houses must be regarded as legitimate and imperative investment for nation's health, happiness and progress. Even as an economic activity, house-building, in nature of things, is a major and potentially thriving industry with beneficent effects on several other industries, such as manufacture of cement, electricity, sanitary fittings, building materials etc. This industry also relatively provides much larger employment, and that too in a shorter time, than any other comparable large scale industry. In terms of national income generation in India, income from Railways is about 2 per cent, from factory establishments 7.3 per cent and the comparative figure for income from house building is about 4.3 per cent.

⁴Following comparative data confirm the point :

Table—Male Working Population per sq. km. in different countries.

Country	Male working population per sq. km.
Brazil	1.0
Ireland	7.8
Greece	8.9
Spain	14.0
Turkey	14.3
Poland	14.5
China	26.9
India	26.8

NOTE.—Adopted from Palvia's "An Econometric Model For Development Planning"—1953 (pages 13-14).

⁵To private builders, house construction is just an investment and on it the earning of rent must be sufficiently larger. This raises the problem of discrepancy between "social rent" and "economic rent" and the payment of capital and rent subsidies as well as grant of loans at reasonable rate of interest to those who cannot afford a higher rate of rent.

2.10 The problem of housing is of great concern for urban areas and their needs are not only greater but they go on increasing at faster rate in developing countries in consonance with the tempo of industrialisation leading to overcrowding and slum-conditions⁶. While in rural areas, where the majority of people live, open space, air and sunshine are luckily still free goods and only the principles of elementary facilities, such as protected water supply, conservancy and drainage are more important than the putting up of new houses or huts, as compared to urban areas, where families are huddled in unsuited and unhealthy houses and it is here that correlation between overcrowding, high morbidity and mortality is observable.⁸

3. BROAD FACTS ABOUT PROVIDING DWELLINGS AND INVESTMENT VOLUME FOR THE WORLD AND ASIAN POPULATION (1960-2000)

3.1 In the past too much attention has been given to technical research, which is in no way less important. But too little attention was given to social, psychological, biological and other problems—and specially those directly related with human life in all its aspects. This imbalance has found expression in the wide differences that exist in the material environment of various regions. To remove these differences an all-round 'building' is necessary, *i.e.* the building of the health, character, courage, etc. as well as the physical building of houses in good surroundings. In a public opinion survey there will be few people who will not agree that hunger and sickness must be combatted with all available means and that education, work and recreation should be given such attention as to ensure a reasonable chance for everyone to achieve individual development and to live with others in harmony. Further, if it is realised that individual development and social harmony can be achieved only when the whole of the world's population is reasonably housed then many people will be inclined to say that the necessary means for this are lacking. Therefore, providing of reasonably healthy houses for the world's population becomes an imperative and inevitable priority.

3.2 In this context it may be worthwhile to calculate how much residential buildings have to

be done to house everyone of the human society in 1975 and 2000. The statistical data are far too small and shoddy. Therefore, only some insight in the magnitude of the problem involved can be had through an arithmetic exercise. On the basis of the data in respect of world population for 1975 and 2000 as given in Table 1, the proposed exercise has been done in Table 3.

3.3 As the estimate of annual housing building, for the world in fifties was 8 million, the rate of annual construction just to provide for the increase in population will have to be higher; it has been taken at 9 million per annum for the decade 1951-60; 17 million per annum for the 15-year period 1961-75; and 20 million per annum for the 25-year period 1976-2000. But it is important to note that in order to provide for the total population of 2000 A.D. a reasonable stock of dwellings of reasonable quality of present size of housing stock of 1000 or 1100 (after making adjustment for hopeless dwellings of today, depreciation, obsolescence, etc.), it will be necessary to build in the next forty years about 25 million dwellings per year. Here, however, we have made calculations of investment only for dwellings required for increase in population. But if a true picture is to be obtained it shall be necessary to adhere to a figure of 25 million dwellings per year to know the actual size of investment wanted. This size of calculations are left to the imagination of the readers, and if necessary can be built from the data which have been given as regards fresh dwellings required to house only the increase in population.

3.4 World population during 1950 was 2500 million and for 1960, 1975 and 2000 it is estimated (for the present calculation) respectively at 2,960 million, 3830 million and 6270 million, showing an average annual increase in population of 46 million for the decade 1951-60 and 87 million for the period 1961-75 and 100 million for the period 1976-2000. To house these population increases, 9 million houses per annum—at the standard rate of 5.2 members per house—should have been built for the decade 1951-60, requiring an annual investment of Rs. 90,000 million on housing alone. (The house standard taken here is by no means of American or European standard, but of the standard of low income groups of India).⁹ Simi-

⁶ "The possibility of limiting the number of occupants per house of certain size or floor area by statutory means be explored. Just as we prevent overcrowding in buses or cinemas and theatres in the interests of safety and good health, overcrowding in houses also should be prevented." (C. Chandrasekhar).

⁷ The village houses do offer some sort of shelter against sun and rain to dwellers, but they have no latrines, no protected water supply and no public cleansing. Men and cattle live in close proximity; mosquitoes and flies swarm; and rats abound in the huts and hovels. The interior of the house is generally clean, but the surroundings are dirty. The village pond is green with algae and is constantly polluted. The river is also used for all purposes and is polluted. The soil is polluted. The village school is noisy, poorly furnished and often devoid of urinals, latrines and drinking water. Hospitals and dispensaries are miles away, badly built, ill-equipped and inaccessible to the sick. The village market is held on the open ground which is sodden in rains. Public eating houses are uncommon, but an insanitary tea shop or "coffee hotel" is easily found".

(Ministry of Health (India) Report on the Environment Hygiene Committee, Simla, 1950).

⁸ There are rooms so dark that even during the day the inmates cannot see each other in passages or in the single living rooms without the help of a light or fire. Fresh air is completely lacking. Very often there is no passage of air from room to room, many of which are built back to back. Ventilation is of the poorest standard imaginable. The single room serves as a living room, bedroom, sick-room, kitchen, dining room etc. and to add to this the number of persons living in the single room ranges from four to ten. The sallow complexion, the emaciated body, the pale faces of the inmates immediately tell their tale. If further proof were needed, one has only to study the official vital statistics to understand the extent of the toll in human life taken by this ill-conceived housing, a good deal of which even by the present inadequate and long obsolete standards laid down by the Old Municipal Act of 1888, can be classed as unfit for human habitation. It is tolerated because there is no alternative housing available and the inmates would be on the streets if the tenements are declared and marked unfit for human habitation."

[Housing Panel (Bombay), the Greater Bombay Scheme, Bombay 1946].

⁹ Here we have taken Rs. 10,000 per house based on the value of the house for low-income group of people in India—though Ettinger put a figure of \$3750 per house. Owing to differences in quality, levels of cost, climate and the like, the price of 'low cost housing' ranges from \$200 to 2000 each in the densely populated and poor tropical and sub-tropical regions, from \$3000 to 5000 each in Europe and from \$8000 to 10,000 each in U.S.A.

larly for the 15-year period of 1961-75, 17 million houses costing Rs. 170,000 million per annum shall have to be constructed; and 20 million houses costing Rs. 200,000 million annually shall have to be constructed for the last quarter of the present century.

3.5 To focus attention on the gravity of the problem calculations have also been made for housing requirements and investment for Asia (in Table 3) for the decade 1951-60, 15-year period (1961-1975) and for the 25-year period 1976-2000). For these periods respectively the population is estimated to increase in Asia annually at the rate of 25 million, 50 million and 60 million. For the corresponding periods the annual rate of house construction will have to be 5.95 million, 9.77 million and 12 million respectively with the annual investment of Rs. 59,500 million, Rs. 97,700 million and Rs. 120,000 million.

3.6 If balanced growth of all the sectors of economic activity in the world is the objective for achieving human welfare the total annual investment on the 'Construction Sector' and the economy should bear certain order of notional proportionality. This ratio is usually 1 : 2. Therefore the annual investment for 1951-60 on 'construction' and on the 'world economy' should have been of the order of Rs. 225,000 million and Rs. 450,000 million respectively (with proper and equitable distribution according to size of population over different continents and regions). Of this the respective annual amounts for the decade 1951-60 in Asia should have been of the order of Rs. 148,750 million and Rs. 297,500 million respectively for 'construction' sector and whole of the Asian economy with proper

and equitable national distribution according to population size. Similarly, for the 15-year period 1961-75, the annual investments on 'construction' and 'world economy' should desirably be of the order of Rs. 325,000 million and Rs. 650,000 million; for Asia, the respective amounts of annual investment being Rs. 195,400 million and Rs. 390,800 million. Again, for the 25-year period of 1976-2000, the annual investments on 'Construction' and 'World Economy' should desirably be at Rs. 500,000 million and Rs. 1,000,000 million; for Asia the respective amount of annual investment for the period being Rs. 300,000 million and Rs. 600,000 million.

3.7 The 15-year period of 1961-75 includes the Third Plan period of India. Taking roughly the population size of India equivalent to one-fourth of Asian population, the respective annual target of houses should be 2.44 million, with the annual housing investment of Rs. 24,455 million and construction investment of Rs. 48,910 million and an annual investment of Rs. 97,820 million, with a view to having a balanced development of all the sectors of the economy. This would mean that the Third Plan investment should have been put at a little less than Rs. 50,000 crores which is little less than five times the planned investment in the Indian economy as envisaged during the Third Plan. These figures, as already stated are in the nature of an arithmetic exercise to provide an idea about the magnitude of the problem in the face of increasing population and urban growth. They are indicative of the task involved to eradicate the stigma of slum-living from the major part of the world and humanity.

TABLE 3—World's Total Population, Housing Requirements and Gross Investments Required in 'Housing' 'Buildings and Civil Engineering' and the 'World Economy' (1960, 1975 and 2000)

Year	Total population (in millions)	No. of houses per annum required (in millions)	Gross Investment (in million rupees)					
			Housing		Building & Civil Engineering		World Economy	
			Annual	Whole period	Annual	Whole period	Annual	Whole period
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1960	2960 (46)	9.00 (5.2)	90,000	900,000	225,000	2,250,000	450,000	4,500,000
1975	3830 (87)	17.00 (5.1)	170,000	4,250,000	325,000	4,875,000	650,000	9,750,000
2000	6270 (100)	20.00 (5.0)	200,000	5,000,000	500,000	12,500,000	1,000,000	10,000,000
ASIA								
1960	1628 (25)	5.95 (5.2)	59,500	595,000	148,750	148,750	297,500	2,975,000
1975	2210 (50)	9.77 (5.1)	97,700	1,465,500	195,400	2,931,000	390,800	5,862,000
2000	3870 (60)	12.00 (5.0)	120,000	3,000,000	300,000	7,500,000	600,000	15,000,000

NOTES (1)—Population of Asia as a percentage of world population is 55.2%, 57.7% and 61.8% respectively, for the years 1960, 1975 and 2000. But for convenience figures at 55, 57.5 and 60% have been taken. Figures in brackets in Col. (2) show the annual averages of the size of the population growth.

(2) During 1950 the world's annual construction of houses is estimated at 8 million in Col. (2) and this has been desirably raised to 9 million annually for the decade 1951-60; 17 million for the period 1961-75; and 20 million for the period 1976-2000. The figures in bracket in Col. 3 show the average number of members per dwelling.

(3) Cost of construction of each house has been supposed on an average at Rs. 10,000 in Col. 4 and 5 based on Rs. 10,000/- the allowed cost for each unit under 'Low Income Group Scheme' of the Govt. of India. This is lower than what was estimated at \$3750 (or Rs. 17715) by Ettinger in his book: Towards a Habitable World.

(4) Usually the investment co-efficient in housing is 0.4 of the total gross investment in Building and Civil Engineering works. Therefore, in order to find the investment figure for the latter, the housing investment figure has been multiplied by 2.5 to arrive at the figures given in Cols. 6 and 7.

(5) The investment in the Construction Sector is usually 50% of the total investment (though it is higher for under developed countries, as now estimated for India at 66%). Therefore, the figures of Cols. 6 and 7 have been multiplied by 2 to find the total gross investment figure in Cols. 8 and 9.

4. A CASE STUDY OF INDIA AS REGARDS HOUSE CONSTRUCTION CAPACITY IN TERMS OF CAPITAL INVESTMENT vis-a-vis VARIOUS INCOME GROUPS

4.1 The descriptive global picture about housing and its insoluble size and in particular that of housing for low income groups in urban areas and in rural areas may not prove so convincing unless the description and conclusions are supported by some statistical data having the force of economic content in them. Then alone some policy formulation can be attempted. For this purpose, here a use has been made of Indian data available from NSS Round-12 (vide Draft Report No. 82 for the period March-August 1957). It is an illustrative case study regarding the data of expenditure levels in rural and urban areas. For this some relevant but hypothetical income groups have been arrived; and certain savings rates have been assumed for the corresponding expenditure groups. Based on the common belief that a minimum of two years¹⁰

income (except for two lowest income brackets) is required for investing in the construction of a house, capital cost figures of the house for different groups of families have been worked out. For lowest income groups the cost of the house has been assumed not on the basis of their two-yearly income but on the basis of minima of loan amount fixed under various subsidised and aided self-help schemes during the Second and Third Plan of India, excluding elements of subsidy and 'self-labour' invested. A rate of interest of 5% has been added to the loan amount for the relevant period of amortization. The capital cost and the interest due has been counted at simple interest, after adjusting for the annual amortization made. This enabled determination as regards fixing the value of annual instalments that have to be paid by different expenditure (or income) groups of families. The percentages of the annual instalments in terms of annual income have been worked out. The data as deduced for rural and urban areas are given in Tables 4 and 5 respectively.

TABLE 4: *Distribution of Households by Monthly Household Expenditure Level, the Cost of Adequate Housing and the Amount of Annual Instalment of the Refunds for House Building Loan taken (Rural areas)*

(In Rupees)

Sl. No.	Monthly household expenditure level	Percentage of household with monthly household expenditure level in col. 2.	Approximate average monthly expenditure of the household with expenditure level in col. 2.	Annual expenditure	Annual saving	Annual income	*Cost of adequate housing	S. Interest on (9) at the rate of 5% for 30+1 years	Total (9+10)	Instalments 11/30 years (8)	Percentage w.r.t. (8)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(10)	(11)	(12)	(13)	
1	0—25	16.1	25	300	0	..	300	1,500	1,163	2,663	88.77	29.59
2	26—50	41.8	38	456	0	..	456	1,500	1,163	2,663	88.77	19.47
3	51—100	33.6	75	900	5	45	945	1,890	1,465	3,355	111.83	11.83
4	101—200	7.4	150	1,800	6	108	1,908	3,816	2,957	6,773	225.77	11.83
5	201—300	0.8	250	3,000	8	240	3,240	6,480	5,022	11,502	383.40	11.83
6	301 & over	0.3	400	4,800	10	480	5,280	10,560	8,184	13,744	624.80	11.83

*Estimated as equal to 2 years household income except for household with expenditure level at Sl. No. 1—2 for which the cost of adequate housing has been put as equal to the loan granted under Rural Housing Scheme.

Source for Cols. 2-3.—NSS Draft Report No. 82 Tables with notes on Housing condition, Twelfth round, March-Aug. 1957.

4.2 The financing aspect of house construction in rural areas can be seen in the statistical exercise as stated earlier, based on the data emerging from NSS 12th Round (vide NSS Draft Report No. 82). From the data it can be seen that 16% of the households have an annual income which is lower than the per capita national income, which means that the per capita income of these households is less than 1/5th of the per capita national income. For the other 42% of the households the per capita income is about 1/3rd of the per capita national income. This signifies that 58% of the households in rural areas are at a sub-marginal level and their problem of financing house construction is impos-

sible in itself as is obvious from the fact that their annual instalments of repayment over a period of 30 years come to nearly Rs. 90.00. Against the annual household income of Rs. 300 and Rs. 456 respectively, for the former group the amount of annual instalment is 29% of the annual income and for the latter group it is more than 20%. The savings of these two income groups are almost 'nil' and rather the likelihood is this that they have negative savings. Therefore, the question of repayment in respect of these two income groups comprising 58% of the total rural households is almost impossible; it would be really miraculous if repayment flows to the 'public coffers' to discharge the loans.

¹⁰ The housing cost of a dwelling is 4 times of annual income in Western Europe for normal dwelling; in the USA, it is 3 times. Again the cost of dwelling; in Western Europe is 4 times the annual earnings of a male industrial worker. In less developed countries the gap is likely to be much more than 4 times; for example in Greece, Portugal, Turkey the multiple is 10.4, 13.5, 10.7 respectively of the national income per capita and in Italy and Ireland more than 8 times. Even in developed countries like Belgium, Denmark, Finland, Sweden the multiple is 6 to 7 times. In eastern planned economies the multiples are between 6.2 to 10.2 the lowest being for the USSR and the highest for Poland, except Yugoslavia where the multiple is as high as 34.

TABLE 5.—Distribution of Household by Monthly Household Expenditure Level, the Cost of Adequate Housing and the Amount of Annual Instalment of the Refunds for House Building Loan Taken (Urban Areas)

(In Rupees)

Sl. No.	Monthly household expenditure level	Percentage of household with monthly household expenditure level in Col. 2.	Approximate average monthly expenditure of the household with expenditure level in Col. 2.	Annual expenditure	Annual savings		Annual*Cost of adequate housing 5% for 30+1	S. Interest on (9) at the rate of 5% 30+1	Total (9+10)	Instalments 11/30 years	Percentage w.r.t. (8)	
					@ %	Total						
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
1	0—25 . .	4.4	25	300	..	..	300	3,300	2,558	5,858	195.27	65.09
2	26—50 . .	19.8	38	456	..	..	456	3,300	2,558	5,858	195.27	..
3	51—100 . .	42.3	75	900	—	..	900	3,300	2,558	5,858	195.27	21.70
4	101—200 . .	23.0	150	1,800	5	90	1,890	3,780	2,930	6,710	223.67	11.83
5	201—300 . .	5.5	250	3,000	6	180	3,180	6,360	4,929	11,289	373.30	11.83
6	301—400 . .	2.9	350	4,200	8	336	4,536	9,072	7,031	16,103	536.77	11.83
7	401 & over .	2.1	600	7,200	10	720	7,920	15,840	8,276	28,116	937.20	11.83

*Estimated as equal to 2 years household income except for household with expenditure levels at S. No. 1—3 for which the cost of adequate housing has been put as equal to ceiling cost prescribed under subsidised Industrial Housing Scheme outside Bombay and Calcutta.

Source. For cols. 2-3—NSS Draft Report No. 82 Tables with notes on Housing Condition, 12th Round-March-August 1957.

4.3 For the rest of the 42% of the rural households which almost comprise of annual income levels of little less than Rs. 1,000 (34%) and little less than Rs. 2,000 (about 7.5%) the annual instalments of repayment come to Rs. 112.00 and Rs. 226.00 spread over 30 years. The proportion of these annual instalments in relation to their incomes amounts to 12% which by itself is not much. But considering that the savings of these households may be of the order of 5 to 6%, it is difficult to manage the feasibility of complete repayments unless roughly an annual subsidy of about 50% of the annual instalment amount is made available or a lump-sum subsidy amounting to 50% of the housing cost is mobilised through 'mutual self-help'. For the remaining 1% of the rural households comprised of two income groups, the difficulty of repayment is not so serious, still the 'need for subsidy' cannot be ruled out. Thus in general, rural housing problem can be solved in one of the two ways, i.e.—either by out-right subsidy of at least 50% or by concerted efforts at evoking enthusiasm for 'self-help'. The degree of 'self-help' envisaged under the Third Plan for village housing schemes is of the order of 33.33%, and in the nature of things, it is not practicable to activate housing construction in the rural areas, even if the government goes all out to stretch its hand of financial accommodation, unless the 'self-help' proportions in total cost of house construction are increased.

4.4 The situation as it emerges from the NSS Draft Report No. 82 as regards housing problem in urban areas is better so far as income levels are

concerned because under the identical two lowest income groups the percentage of households is only 24% as against 58% in rural areas. For the households in the income group of over Rs. 1,800 per annum the percentage of urban households is about 11% as against just 1% in the rural areas. Yet it is puzzling that to resolve problems relating to provision of housing the position is much more intractable in urban areas than what is in rural areas primarily due to high cost of house construction as well as land-site in the urban areas. The annual instalments for the first two (lowest income) groups rise to Rs. 195 as against Rs. 88 in rural areas. The instalments to be repayed by the household as proportions of annual incomes go as high as 65% and 43% against the prevalent negative savings of these households. This makes consequently repayments highly impossible. For the third income group having an annual income of Rs. 900 per annum the degree of annual instalments to the income is 22% against no savings. In rest of the four income groups having annual household incomes of Rs. 1800, Rs. 3000, Rs. 4200 and Rs. 7200 the percentage of repayment to the income is 12% and here also it is not possible to rule out the possibility of the 'need for subsidy' payments.

4.5 The cases presented about the degree of financial strength of the rural and urban population leads to the conclusion that solving of housing problem is a herculean task and requires effort which would require calling upon the suitable schemes of 'mutual self-help' in case of rural housing and to some extent for urban housing as well. This is imperative to

relieve the pressure of competitive demands which are made on State resources, and specially so in less developed regions where the financial resources are very difficult to mobilise beyond a certain point.

5. NEED FOR INTERNATIONAL ACTION TO ARREST DISPARITIES IN HOUSING STANDARDS

5.1 The greater part of the population living in less developed countries which is on the borderline of minimum existence as explained—has been increasing by 2% annually; they can hardly just save and invest enough even to maintain the existing level of income per head of population. Whereas in the rich countries, where population is increasing on an average by 1% per year, it is possible to invest enough to raise the levels of prosperity further. From the demographic revolution which is taking place in terms of fast increases in world population and faster rate of urbanisation, it is getting more and more clear that three-fourths of the world which is ill-fed and ill-housed will be put in still worse situation if action is not taken in good time by the affected people as well as by the minority of one-fourth of world's well-placed population to help their bretheren. The fortunate minority of the world population have to be convinced and castigated; they have to be persuaded and pursued, not only to devote in achieving their own greater prosperity but also for the other people whose number is three times their own. It is also equally true that in the world, slums cannot be eliminated within next one or two decades; but for achieving balanced development of the world it is necessary for the technologically advanced regions of the world to transfer their technical 'know-how' and equipment for encouraging the constructional activities for providing more houses at faster rate in less-developed regions, otherwise the imbalance would threaten to assume alarming proportions. It can be stated that in the present situation we face 'a strange mixture of achievement and much failure, of order and much chaos, of hope and much despair'. Further, it is really a terrifying thought that much of the human knowledge and skill is now being turned to chime (*i.e.* internecine wars) or used in some way

contrary to the interests of positive development of human society. The direct and indirect activities of the various international institutions—WHO United Nations, IBRD, etc. are directed towards raising public health and public hygiene. But in less developed countries public health would benefit considerably if it were possible to build large numbers of simple but hygienic residential areas and other community facilities—providing buildings, such as schools, hospitals, etc.

5.2 What emerges really is this that without international action (including financial aid), underdeveloped countries are not in a position to take investments for equipping themselves with social infrastructure and in the absence of it there hovers a lurking fear of increasing tension with disastrous consequences unless by some mechanism, proper international distribution (if not of income and wealth, but at least of welfare) is brought about. Movement of capital and 'know-how' from rich to the poorer countries is the urgent need in forms of grants as well as loans at low rates of interest. All this can be done by the rich countries through the reduction of conspicuous consumption and by reducing investments in their home countries and by slashing down expenditures on armaments. Of these the third possibility is potent with fruitful results as is shown in the paragraph that follows.

5.3 It is estimated that in 1957 sum of the national incomes in the world was \$ 900 milliards* out of which total gross investment was about \$ 230 milliards—representing \$ 150 milliards for civil investment and \$ 80 milliards for defence expenditure—*i.e.*, the defence expenditure was about 8.8% of the world income. If progressively the percentage on defence expenditure is reduced for creating an atmosphere of peace and amity in the world to half the 1957 percentage, and if it is possible to divert the surplus available for improving social infra-structure of the less developed countries, some hopeful situation might emerge. In the arithmetical exercise that follows the growth of world income has been assumed to grow at 3% per annum for our present calculations in Table 6.

TABLE 6.—A Fifteen-Year-Plan for Reducing Investment on Defence and Diverting it for Housing and Other Social Infra-Structures in less Developed Countries (1961-1975)

Year	Sum of national incomes in the world (in milliards of \$)	Defence expenditure as a percentage of (2)	Defence expenditure (in absolute terms in milliards \$)	Defence expenditure if kept at 1957 <i>i.e.</i> at 8.8% (in milliards \$)	Difference between (5)—(4) (in milliards \$)
(1)	(2)	(3)	(4)	(5)	(6)
1961	1013	8.8	89.1	89.1	0
1962	1043	8.5	88.7	91.8	3.1
1963	1075	8.2	88.1	94.6	6.5
1964	1107	7.9	87.3	97.4	10.1
1965	1140	7.6	86.6	100.3	13.7
1966	1173	7.3	85.7	103.2	17.5
1967	1207	7.0	84.4	106.2	21.8

*A Milliard=1000 Million.

(Contd.)

TABLE 6—*contd.*

(1)	(2)	(3)	(4)	(5)	(6)
1968	1241	6.7	83.1	109.2	26.1
1969	1276	6.4	81.7	112.2	30.5
1970	1310	6.1	79.9	115.2	35.3
1971	1345	5.8	78.0	118.4	40.4
1972	1380	5.5	78.9	121.4	42.5
1973	1416	5.2	73.6	124.6	51.0
1974	1453	4.8	69.7	127.9	58.2
1975	1480	4.4	65.1	130.2	65.1
		TOTAL	1229.9	1636.7	421.8

5.4 Besides effecting savings in defence and conspicuous consumption expenditures as well as lowering of levels of investment by the rich countries at home, there is a necessity for pooling of knowledge and experience in the field of housing of different nations as well as of evolving out new techniques and effective policies as regards housing finance, building materials, organisational machinery, low cost housing, etc. Now we have in different regions of the world specialised organisations or branches in the organisations to deal with housing problem. The American Union for Housing (*i.e.* CINVA) in Latin America, the "Housing Sections" in the Economic Commission for Europe and in the Economic Commission for Asia and the Far East as well as at the Headquarters of the United Nations are the positive examples in this direction. In Asia, on account of its size as well as the member of its inhabitants being more than 55% of the world population, two Regional Housing Centres have been set up—one in Bandung (Indonesia) for Hot and Humid Zone of ECAFE Region and the other in New Delhi for Hot and Arid Zone of ECAFE Region. It may be mentioned that the National Buildings Organisation at New Delhi has been acting as the Regional Housing Centre for Hot and Arid Zone of the ECAFE Region for quite some time. In this regard it may be stated that the UN Headquarters have drawn up certain guiding principles for conducting housing census, estimation of housing needs and setting up of indicators of housing levels of living. What is, however, essential is the realisation on the part of less developed countries to set up similar national organisations maintaining liaison with international agencies to deal with the problems of housing finance, community facilities, 'aided self-help', urban renewal, etc.

5.5 For arousing international conscience and for activating international action with a view to improving housing conditions of less developed regions, the ECOSOC had recently appointed an 'Ad-hoc' group of Experts to advise on various aspects of Housing and Urban Development in relation to general economic growth. This group of experts met in February 1962 at New York and drew a set of recommendations as regards, housing finance, urban renewal, low cost housing, etc. The Group had also recommended the esta-

blishment of World Housing Organisation. Sometime, in Mid-May, 1962, United Nations Social Commission approved of setting up a Housing Commission, consisting of experts to advise on various aspects of housing in less developed regions of the world. All these are hopeful signs of potent action in future.

5.6 For continuous work which may be helpful towards operational research and action, it is of essence that there should be some international agreement in respect of methods of collecting and expressing of production data relating to housing and building activities. There should also be undertaken pilot investigations by the countries with a view to exchanging the results of investigation covering both traditional and non-traditional methods of house-construction. Again, there are various aspects of standardisation and modular coordination where further action as a result of follow-up and supplementary inquiry would be useful. Also there should be realisation as regards the importance of reorienting education and training of personnel and international exchange of experience. Further, with the passage of time, there would appear to be scope for an examination of the economies in different countries in respect of using new materials or improved forms of traditional materials, particularly in the context of light-weight building materials. All this arises because the cost of housing problem in almost all countries is the high cost of house-building.

5.7 The less developed countries require financial assistance from rich countries or from International Financing Institutions particularly for the following purposes:—

- (a) Setting-up plants for light-weight aggregates and their complementary clay evolution laboratories; each such assembly of plants and laboratories is primarily aimed at reducing cost of building and improving quality of construction and also effect savings and fight scarcity of land by constructing vertically—and financial assistance made available will be potent with economy and increasing of building activity.

- (b) United Nations have felt the need for carrying out 'housing census' by all the Member-countries. The less developed countries, and specially those which are big countries in area and in the size of the population, the census operations involve the need for trained personnel and huge financial expenditure. But as this important socio-economic survey is highly basic to the economic and social development, financial assistance from abroad will be of tremendous value for evolving basic policies.
- (c) Various institutions, such as Population Research Centre, UNESCO Centre, Indian Statistical Institute catering for different subjects, etc, have been getting foreign assistance. As regards the housing sector and its relation to family and demographic aspects, social aspects, etc, there do not exist organised agencies for channeling of financial assistance in order to make specialised studies. In this direction foreign financial assistance would be highly fruitful.
- (d) 'Self-help' housing projects in rural areas as well as for lower income groups in urban areas require a lot of spade work and patience in getting the projects executed. Foreign assistance in this field already successfully channelled in Puerto Rico, Jamaica, Taiwan, Israel, etc, are examples for inviting foreign assistance in all the less developed countries as well. In India, as the problem of rural housing is of a stupendous nature, self-help and 'aided self-help' methods for encouraging housing construction need to be associated with the production of building materials locally, partly by establishing mechanised building materials plants and partly by producing materials in indigenous ways. Thus both for housing construction as well as producing building materials and establishing net-work of such pilot centres throughout the country on 'self-help' lines with foreign assistance can prove of real advantage.
- (e) For importing various capital equipment and machinery for building purposes, such as, mixers and mortar mills, material hoisting plants, cranes, conveyors, elevators, hoists, excavators, trenches, winches, etc, foreign assistance, if available, will go a long way in activising housing construction.
- (f) In order to train the nationals in different aspects of housing as well as to impart training to the officers and workers of ECAFE region countries by the New Delhi Regional Housing Centre for Hot and Arid Zone of ECAFE, financial assistance from abroad in the form of fellowship-award to nationals of Asian countries and nomination of visiting expert professors from abroad would be necessary.
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International Action For Housing During The Development Decade**

By

Prof. L. R. Vagale†

1. INTRODUCTION

1.1 The General Assembly of the United Nations passed a resolution¹ in December, 1961 designating the current decade as the United Nations 'Development Decade', in which Member-States and their peoples would intensify their efforts to mobilise and to sustain support for the measures required on the part of both developed and developing countries to accelerate progress toward growth of the economy of the individual nations and their social advancement. The aim was to attain, in each underdeveloped country, a substantial increase in the annual rate of growth of national income of 5 per cent. The Secretary General of the U.N., who was requested to formulate specific proposal for action to achieve this objective, stressed in his Report² that housing and urban development should receive high priority in national and international programmes during the development decade. The report pointed out that the failure in the developing countries to provide satisfactory housing and community services to remedy existing deficiencies and to keep pace with the rapid growth in population was causing a decline in levels of living and impeding economic growth and social progress. The Secretary General's report also recommended the establishment of a Committee on Housing, Building and Planning with a view to evolving policies and programmes for action.

1.2 The United Nations actively initiated international action in housing and urban development in February 1962 and the commemoration was marked by a meeting of the *Ad Hoc* Group of Experts on Housing and Urban Development. In their Report³ the Group noted that substantial international activity in the field of housing and urban development was being undertaken by the U.N. and its specialised agencies as a part of the long-range programme of concerted action. The Group also recommended that the improvement of housing and urban development should have high priority in the decade of development and that the U.N. should sponsor a ten-year programme for urban and rural improvement, combining international aid, national efforts, local finance and self-help. They suggested that a U.N. fund or pool of equipment, technical services and financial resources should be established. The Group recommended that the U.N. fund or pool be managed by a permanent organisation within the U.N. composed of compe-

tent experts. It further recommended that the unit of the U.N. Secretariat dealing with housing, building and urban and regional development should be strengthened.

2. WORLD POPULATION AND TRENDS IN ITS GROWTH AND DISTRIBUTION

2.1 The human race has been multiplying itself too fast. Declining death rate and a high but stable birth rate, have caused population 'explosion'. During the past 10 or 15 years insecticides and anti-biotics have made possible enormous advances in the mass-control of mortality in the under developed countries. In 1960 the world population was estimated at 2972 million and by the middle of 1964 it is expected to reach 3000 million. Between 1900-1950 the world population increased at 0.88 per cent per annum. However, during the last decade (1950-60) the annual growth rate increased to 1.72 per cent.

2.2 Apart from this unprecedented increase in population, the dynamics of demographic distribution is alarming. The distribution of population is extremely uneven. The bulk of the world population is concentrated in Asia, Africa and Latin America. These continents are also registering a higher growth rate than Europe and North America. Demographers have projected that the population of the world would be about 3828 million by the year 1975 and this would reach 6267 million by the year 2000. The bulk of this population would inhabit the Asian Continent.⁴ To cite a single instance, the population of India has increased by nearly 84 per cent over a period of sixty years, 1901-61. The decade 1951-61 alone has, however, registered an increase of 21.50 per cent.

3. URBANISATION AND ITS IMPACT

3.1 The process of urbanisation and the dynamics of population distribution in urban and rural areas are of special significance, as they have tremendous impact on planning, housing and building. Not only is the world population increasing very rapidly but also the urban centres are growing much too fast in size and number, creating new demands for housing and urban services which cannot be met easily. It is estimated that between 1900 and 1950 the population of major cities (cities having 100,000 or more people) increased by 250 per cent. The urban population of Asia is likely to increase by 220 per cent between 1950 and 1975. About 560

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1. Resolution No. 1710(XVI) dated 19th Dec. 1961.

2. The United Nations "The United Nations Development Decade—proposals for action" Report of the Secretary General, New York, 1962.

3. United Nations : Department of Economic and Social Affairs. "Report of the *Ad Hoc* Group of Experts on Housing and Urban Development". New York, 1962.

4. Refer to Dr. C.M. Palvia, "International Action for Housing and its Relation to World Regional Population Growth" Paper presented at the Short-term training course on Sociological and Economic Problems in Housing, N.B.O. May, 1962.

million Asians would live in the cities of 20,000 or more inhabitants. Whereas 13 per cent of the total Asian Population lived in urban areas in 1950, it is estimated that this percentage will increase to 26 by the year 1975.

3.2 For instance, in India the urban population has been increasing faster than the rural population for the past few decades. The urban population constituted 12.1 per cent of the total population in the year 1931. But by 1961 it increased to 18.3 per cent. The bulk of the urban population in India lives in a few major cities. In 1961, 78.8 million people lived in 2690 urban communities, large and small. Of these only 107 large towns or 4 per cent of the total number of urban communities accounted for 35 million people, or 44 per cent of the total urban population in 1961. It is also significant that the percentage increase in urban population was as high as 48.0 in Class I cities, whereas the corresponding increases in Class II and Class III cities were 27.6 and 40.6 per cent respectively. India had 74 Class I Towns (population 100,000 or more) in 1951. However the number of towns in this category increased to 107 in 1961.⁵

3.3 Urbanisation is not a new phenomenon. However, its rate has greatly increased since the second world war. In most of the developing countries there is a considerable excess of manpower, without corresponding means of employment in industries and non-agricultural pursuits. The migrants from rural areas, displaced from their traditional environment are, by and large, unaccustomed to and unprepared for urban life and also they lack urban-consciousness. Their educational and employment level, skill and income being very low, they cannot afford housing and community services of reasonably good standards. They are, therefore, crowding together in the slums of the metropolitan cities or in shanty-town settlements on their fringes and experiencing great social stress and emotional strain. It is, therefore, necessary for the national governments and the United Nations to recognise and accept the inevitability and the necessity of urbanisation as a consequence and, indeed, as a means of economic growth and social advance and to see that the urbanisation takes place in a planned manner. It is also necessary to recognise the need to reduce the gap between urban and rural living conditions, so that excessive migration to cities may be reduced.

3.4 In the countries of Europe and Northern America the same course of industrialisation and urbanisation, which occurred during the later-half of the 19th Century and the earlier part of the present century, was characterised by neglect of urban planning and physical capital requirements, especially housing, public utilities and services. This resulted in sharply declining standards of living in the midst of heavy investment in factories and machinery, increasing human misery, ill-health, poor environmental sanitation, popular unrest and low productivity of capital invested. The developing countries of Asia and Africa are now tending to follow the same course, because of acute capital shortage and to neglect homes, schools and essential services in the interest of plants and factories.

4. DIMENSIONS OF THE HOUSING PROBLEM

4.1 Statistical information regarding the quantitative and qualitative needs of housing in the developing countries is scant. Nevertheless, it can safely be assumed that they have acute shortage in housing and urban services and that the need for new dwellings to liquidate the existing deficiencies and to effect continuing blight and obsolescence, is colossal. It is estimated that about half the total population of the three continents of Asia, Africa and Latin America—well over 1000 million people—are homeless or live in housing which is a health hazard and an affront to human dignity. Major cities in these areas have extensive slum settlements in which 20 to 30 per cent of the city population lives in rudimentary shelters, with no social overheads. Urbanisation is indeed an expensive process, the cost of building the required urban infrastructures is well beyond the capacity of the developing countries. Rural areas are even more deficient in the basic services and facilities.

4.2 It is estimated that by 1965, the developing countries in the three continents will require annually 25 million dwellings or about eight to nine dwellings per 1000 inhabitants. To give an example, India and in 1951 a deficiency of 3.2 million dwelling units in the urban sector, which increased to 6 million units by 1961. The national sample surveys revealed that apart from this enormous quantitative deficiency, a substantial portion of the existing housing stock was sub-standard. Against this background of huge backlog and increasing need for dwellings, it should be remembered that even the most advanced countries do not have at present an output exceeding five to six dwellings per annum, per 1000 persons. It is, therefore, evident that, if the developing countries have to provide adequate housing and city-services to their enormous populations, the annual output in housing has to be increased manifold, both in quantity and quality. Construction of such a vast scale, even at a modest cost, would necessitate investment resources equivalent to 10 per cent of gross national product or in many cases the entire investment resources available in the less developed countries. It, therefore, seems certain that the present housing situation will deteriorate rather than improve in the immediate future, unless new and drastic measures are undertaken.

5. FINANCING HOUSING AND URBAN DEVELOPMENT PROGRAMMES

5.1 Until recently housing and urban development were regarded as national problems to be solved by national efforts and resources alone. However, with the rapid growth of population, urbanisation and the realisation of the inter-relation between housing as well as urban development and economic and social progress, international attention is now being focussed on the magnitude and complexity of the problem, in comparison with the available national resources. The dimension of the problem demands that regional, national and international resources should be mobilised in a concerted effort to arrest the deterioration in the housing conditions and raise them to a level consistent with economic and social goals in the United Nations Development Decade.

5. For details refer to : Vagale, L.R. "Population Trends in India and their Implication in Town Planning, Housing & Urban Development". Paper presented to the Asian Population Conference, New Delhi, Dec. 1963.

5.2 In the developing countries there is a chronic shortage of capital or investible resources. In addition, investment in housing has to compete with other fields in investment, which are more remunerative and hence more attractive. In this competition housing gets relegated to a low priority. It is evident, therefore, that the key to the problem of housing finance is to mobilise, to the maximum possible extent, the resources of the masses, so that the investible surplus and savings may be invested in housing. It is necessary to create multiple—'incentives for and an 'environment' conducive to investment in housing and urban development. Some of the methods suggested are :

- (a) Setting up housing finance corporations, savings banks, and mortgage companies, etc. ;
- (b) incentives to non-profit organisations ;
- (c) lower bank rates and deferred mortgages;
- (d) development of building and building-materials industries;
- (e) tax concessions and adequate rent returns;
- (f) Compulsory channelling of savings into housing through high public budget allocation; compulsory purchase of bonds; obligation on savings banks, insurance companies and other similar bodies to invest in housing;
- (g) adopting suitable urban land policies aimed at curbing land speculation and creating land reserve.

5.3. Quite often economists and administrators seem to think that investment in housing is 'un-productive' as it has a high 'capital-output ratio' and a small 'growth-potential'. Therefore, they give a low priority to investment of public funds in housing and urban infra-structures. In this connection, it may be mentioned that the Economic and Social Council of the U.N. considers that :

- (a) in a developing economy, housing should be accorded its due priority as a productive investment not only for its own sake but also on account of its capacity to increase productivity throughout the entire economy and to provide employment to a large number of persons;
- (b) economic growth should be accompanied by the necessary investment in housing and urban development as a means of achieving balanced economic and social progress;
- (c) social, economic and locational priorities should be established for adequate investment in housing and urban development;
- (d) investment in housing and urban development should be accorded a high priority and a defined role in the general development pattern.

6. INTERNATIONAL CO-OPERATION

6.1 The national efforts of developing countries in housing could gain substantially from international experience and knowledge of the United Nations and its specialised agencies like the Economic and Social Council, the Economic Commission

for Asia and the Far East, the World Health Organisation and the International Bank for Reconstruction and Development. Assistance can be given in the form of an international flow of materials, equipment and skills, training and education, exchange of information, research, etc.

6.2 The Economic and Social Council emphasises that international assistance in housing, building and planning should be given in accordance with sound criteria for social and economic progress, an equitable geographic distribution and the best interest of the recipient countries. The aid should be given in such a manner that it contributes permanently and continuously to the solution of housing and allied problems.

6.3 The United Nations has suggested that there should be a more effective and systematic integration of housing and urban development programmes with general national development programmes and regional development schemes. Housing and urban development programmes should be conceived within the framework of regional and national planning, which set out the broad pattern of physical development of the regions, especially with respect to land use pattern, transportation, net work, industrial location, etc.

7. EMPHASIS ON HOUSING NEEDS OF LOW INCOME FAMILIES

7.1 In the developing countries, the problem of supplying dwellings at rents within the means of low-income families is particularly acute as the national income per capita is less than Rs. 500 per annum. For instance, it has been estimated that in India a working family cannot afford to pay more than 10 per cent of earnings in rent; this would not be adequate to meet even 25 per cent of the annual cost of a dwelling built to minimum standards. It has also been estimated that only 5 per cent of the rural families and 12 per cent of the urban families can afford the economic rent of a low-cost dwelling. Only 15 per cent of all households in Ceylon and 20 per cent of those in the Philippines can similarly afford an economic rent. The bulk of expenditure of a working class family in the South-East Asian Region is on food and clothing—usually 60 to 75 per cent of the total expenditure. High house-rents will, therefore, reduce consumptions of food and clothing, which are already very low.

7.2 The U.N. Committee on Housing, Building and Planning in their first session observed that the emphasis in housing should be on low-cost housing within the means of working class families. This would require careful attention to building costs and for this pilot projects offered a means of concentrating research on practical problems. To achieve economical construction the Committee suggested revision of building codes, standardisation and modular co-ordination in building materials, etc.

7.3 The Committee pointed out that land was the key resource in the creation of an adequate physical environment for human settlements and it was necessary to provide adequate extent of developed land, at reasonable cost, to the growing population for residential, industrial, commercial, social and

recreational purposes. It is, therefore, necessary for the developing countries to evolve national, long term urban land policies as an integral part of housing and regional planning.

8. CONSTRUCTION AND BUILDING MATERIALS INDUSTRIES AND THEIR ROLE IN THE NATIONAL ECONOMY

- (i) These industries play an essential role in the process of capital formation as nearly two-thirds to three-quarters of all investment goes for construction of buildings and other structures.
- (ii) They employ nearly one-fourth to one-third of the labour engaged in all manufacturing industries and consequently play a significant role in the level of economic activity and general employment.
- (iii) These industries produce dwellings, urban services, utilities and community facilities. They also carry the major share of building factories, agricultural structures, transport and power projects and other public works.

8.2 The development of the building industry should, therefore, be put on a sound footing by undertaking such measures as (a) training building technicians and building workers, (b) improvement of building site organisation and (c) introduction of new building materials and techniques of construction.

9. HOUSING STATISTICS SURVEYS AND RESEARCH

9.1 Accurate, comparable and detailed data regarding Housing in its varied aspects is scant in the developing countries. In the absence of the factual data it is not possible to assess accurately the housing needs and deficiencies in quantitative and qualitative terms. There is considerable scope and need for international action in the field of statistical methods, operational surveys and evaluation techniques, with a view to enabling the governments of developing countries to formulate policies and programmes in housing and urban development.

9.2 The Secretary-General of the U.N. in his proposals for action underlines the importance of research as an integral part of national policies of planning, housing and building and the urgent need to devise ways and means of applying research findings to solve housing problems and disseminating technical knowledge. Research in housing and regional planning should be accompanied by inter-disciplinary study of the relevant technical, aesthetic, political, administrative, social and economic aspects.

9.3 The Secretary-General's Report points out that pilot projects suitably conceived and executed have great demonstration and educational value in the developing countries and lists the following seven main areas in which pilot projects may be formulated :

- (a) improved design and building techniques;
- (b) improvement of the construction and building materials industries;

- (c) Urban and rural development;
- (d) physical planning,
- (e) financing;
- (f) self-help and mutual aid; and
- (g) training education and research.

10. CURRENT INTERNATIONAL ASSISTANCE

10.1 The U.N. and its specialised agencies have given assistance to several pilot projects in housing and urban development which have demonstration value and which offer scope for training of the required personnel.

10.2 The Committee on housing, building and planning points out that there are broadly five types of trained personnel required in housing and urban development programmes, namely (a) the policy makers and chief administrators of such programmes; (b) the top executives of national, regional and local programmes; (c) the professional staff, such as architects, engineers, town planners, economists and sociologists; (d) technicians at the intermediate level, such as clerks-of-works and foremen and (e) skilled workers. In this connection the need for an inter-disciplinary approach, particularly at the post-graduate level, was stressed. This was especially important for training in the urban and regional planning field. The International Labour Organisation, the World Health Organisation, the Economic and Social Council and other agencies of the U.N. have been promoting the objectives of the U.N. through action programmes. For instance, the INA finance municipal water supply schemes and pilot housing projects. The IBRD has given a number of loans for industrial projects which include the necessary housing and the townships. Regional Housing Centres⁶ and Physical Planning Institutes have been established with the assistance of U.N. experts and equipment.⁷ The U.S.A. has created a development fund of \$ 500 million to be managed chiefly by the Inter-American Development Bank (IDB) for agrarian reform and improvement, housing for low-income families and public utilities like water-supply and sewerage.

11. CONCLUSION

Most of the Asian and African countries which won their independence recently, have set out on the path of industrialisation and economic growth. They are facing the problems of enormous growth in population, urbanisation and social upheavals. Housing and urban development are posing formidable problems to these countries. Housing and urban development can no longer be considered as merely local, regional or national problems. They cannot be solved by regional and national efforts alone. Regional, national and international resources should be mobilised in a concerted effort to arrest further deterioration in the housing conditions. The ultimate objective should be to provide dwellings in adequate numbers and standards which are consistent with the economic and social goals in the U.N. Development Decade.

6. The National Buildings Organisation, New Delhi is also serving as the Regional Housing Centre for the Hot and Arid Zone of ECAFE.

7. For instance, Afghanistan, Ghana and West Indies have been receiving assistance of U.N. Experts for urban and regional planning and housing.

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Role of Social Housing Schemes in Social and Economic Development†***

By

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1. INTRODUCTION

1.1 It is a commonplace observation that next to food and clothing, shelter is one of the primary necessities of man. The primitive man probably found shelter from the rigours of the climate in caves and under the branches of trees. When man became skilled enough to manipulate the materials at his command he started to build shelters for himself. Housing thus made a beginning. For modern man a house is the physical basis of personal and family life and therefore an essential ingredient in social organisation. It is also an element in and an expression of his personality. A definite address is necessary for a man to attain his full integrity. Further, although it is not always possible for any of us to find lodgings of the kind we like, every one of us has an opportunity to arrange and utilise his resources according to his tastes and requirements. A man of narrow and restricted outlook is apt to prefer small and dingy quarters but a man of wide and progressive outlook with broad tastes and interests may require apartments corresponding to his tastes and sensibilities.

1.2 It is only very recently that the provision of housing for the people at large has been considered to be one of the primary responsibilities of the Government. In the old days, Governments provided accommodation for their armed forces; this was necessary to maintain their efficiency. They also supplied houses to their noblemen and officers to safeguard their rank and grandeur. Even then the Governments could not be entirely indifferent to the conditions of the housing available to the common man since insanitary and unhealthy living conditions might give rise to plague and pestilence. The ancient treaties on statecraft therefore contain directions about the building, planning and arrangement of towns and the architecture of houses but this was only in the nature of guidance and moral exhortation to the rulers rather than of binding rules to be enforced in all cases. The rigours of climate seem to have brought the problem of housing to the forefront in the Western countries long before it attracted attention in India. State housing or local authority housing was initiated in the U.K. in the nineteenth century. The first Housing Act in U.K. was passed in 1851 but it was the situation created by the Second World War which brought the housing situation in that country to a head. During the war, bomb attacks destroyed many cities in most European countries and made thousands homeless. When in U.K. the Labour Government took office in 1945, one of the matters to which they gave urgent attention was the provision of housing. The position at present is that the range of building in the United Kingdom has progressed so fast that it has almost overtaken the rate of growth of population. Other countries in Europe and elsewhere have also made notable

advance in housing in recent years. For example, it is stated that in Ireland the problem of housing has been solved. In South-East Asia, Japan, Malaysia and Singapore are some of the countries which have made notable progress.

2. MAGNITUDE OF HOUSING PROBLEM

2.1 In India the problem of housing has attracted the attention of the Government ever since Independence. In connection with the decennial census efforts have been made to find out the precise position regarding housing, that is to say, the number of houses in good condition, the number which requires repairs, etc. Efforts are also being made to maintain an up-to-date record of the progress in building in all the States. The findings which have been incorporated in all the official reports make dismal reading; it has been estimated that about 114 lakh houses in urban areas and 600 lakh in rural areas required reconstruction in 1966. Estimates of houses which require reconstruction depend to a large extent on subjective judgement and we should not therefore be unduly alarmed by these estimates especially of defective rural housing. Nevertheless it is a fact that the population in both our towns and our villages is growing rapidly while house construction is not growing in proportion and there is a deficit which progressively becomes greater as years pass.

2.2 The deficit is estimated at present at 714 lakh houses. It is obviously impossible for a Government to try to find resources to build houses to make up this deficit within any reasonable period. The Government must therefore tackle the problem in two ways. First, efforts must be made to create favourable conditions in which private individuals will be encouraged to build houses for themselves or for sale or renting. If the housing stock is increased, it will naturally push down prices and rents and thus bring houses within reach of more persons. Secondly, Government must either construct houses for the general population or make direct efforts to give financial and other assistance for housing those sections of the population which either have a peculiar contribution to make to the national well-being and are therefore deserving of preferential treatment; or are in a more vulnerable and weaker position than others and thus deserve special sympathy. Apart from housing for the Army and for its officers, the Government of India first attempted direct construction of houses when it achieved Independence to provide accommodation for the large numbers of refugees from Pakistan. This effort has not been repeated in respect of general or social housing although in the States the Local Governments have taken up large programmes of construction either direct or through their agencies, such as Housing Boards. In Delhi this role is filled by the Delhi Development Authority.

† Opinions expressed by the author are personal and need not necessarily reflect official or Government thinking.

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3. EVOLUTION OF HOUSING POLICY

3.1 The time is far off when the Government of India can think of adopting a national housing policy for the people at large; nevertheless, the Government has been trying to encourage research in building materials with the object of finding new materials which are better and cheaper than the traditional ones, and of systematising and simplifying the methods of construction so as to save time and labour and thus reduce costs. In the old days traditional house construction in India was done with the help of earth, kutcha bricks, stones, lime mortar, wood, grass, thatch and similar materials. Modern construction relies greatly upon steel and concrete, glass and plastics. New synthetic materials, such as cellular concrete, etc., also are coming into general use. The material which is suitable in a particular condition depends upon the local situation and circumstances; while steel and concrete may be technically the most suitable material in the industrialised countries it does not necessarily follow that we should adopt it in all house building in India without discrimination. Our efforts should be to utilise the latest research in converting the locally available materials into durable and economic forms suitable for our tastes and needs. The Government of India have set up the National Buildings Organisation, a specialised body to collect and popularise the latest knowledge on the work done in solving these problems and it has been doing notable work in this direction. In many countries of Europe special attention has been devoted to this matter. In Poland and Sweden, for instance, a species of cement has been evolved utilising the waste material which is thrown out from the thermal generators. A variation of this is to utilise sand ground into power for mixing with cement. This material is produced in the form of cellular concrete slabs, panels, etc., which are lighter and more durable and consequently more economical for building. The Madras Housing Board has entered into an agreement with the Polish firm CEKOP for the production of cellular concrete according to the industrial processes evolved by that firm. The technical knowledge and the plant will be imported from Poland and installed with the help of Polish technicians. The maintenance will be the responsibility of the local engineers who will be trained in Poland for the purpose. A similar agreement is being negotiated for a cellular concrete plant at Bandel in West Bengal. It is hoped that after these plants have gone into operation it might be possible to set up elsewhere similar plants fabricated in India without having to import either the equipment or the technical knowledge. In many parts of India, bricks produced by normal processes are very dear. Mechanical brick plants have been set up for producing bricks which will be more precisely fashioned and durable than the ordinary bricks. It is expected that this will result in considerable economy in the long run even if the new products are immediately more costly. The National Buildings Construction Corporation Ltd. has set up a mechanised brick making plant in Delhi with Rumanian assistance which is on the eve of starting production. Several other projects for utilising waste products, bloated clay and various aggregates producing building materials are under consideration. The National Buildings Organisation has a special Division to deal with the subject of building materials under the charge of a Joint Director. At the recent Conference of Hous-

ing Ministers held in Madras a recommendation was made that a Plan scheme should be formulated to assist the State Governments in the production of building materials. The proposal is that in addition to the technical guidance and assistance which is already forthcoming, the Government of India should provide the State Governments with financial assistance in an agreed proportion in such endeavours. It is expected that the measures mentioned above will help the building industry to construct houses more economically and on a larger scale than at present and thus do something to ease the housing situation.

3.2 In addition, it is also desirable that the Government should assist the intending occupants of houses by subsidising the sale price or rent. Since housing is a primary necessity of all sections of the people it would have been better if the Government had been in a position to evolve a National Plan for provision of houses to all citizens. As this is not possible at present, the Government has had to restrict the scope of its assistance to certain sections of the population.

4. GOVERNMENT SCHEMES FOR HOUSING

4.1 The beneficiaries of the Government schemes have been chosen on two grounds. In the first place are the people who are entitled to special consideration on account of the contribution which they are making to the national welfare. In the front rank under this head come the Government employees. It is obvious that the machinery of the Government cannot function unless the persons who man it are maintained in a reasonable state of health and well being and therefore able to work with sufficient peace of mind and health of body. From this point of view the provision of residences of suitable standard for Government employees is not a favour done to the employees but a step taken in the interest of the Government itself. Even then the quarters built for the Central Government employees do not cover more than a fraction of the requirements. Some of the employees who are left out of consideration are given house rent allowance in lieu to enable them to rent private accommodation at market rates.

4.2 Subsidized Industrial Housing Schemes

4.2.1 Another category for whom special treatment has been given are the employees of the industrial undertakings. It may be that from one point of view it is the responsibility of the factories and other industrial undertakings to provide accommodation for their employees in the same manner as the Government does in respect of its own employees. It is not, however, always possible for the private factory owner to undertake the construction of residential quarters in sufficient numbers to house all his employees. Industrial production is the most important method of increasing national wealth, and the health and contentment of the workers is the essential pre-requisite for maintaining and increasing such production. The Government has, therefore, given special assistance to the factory owners to house their employees. The scheme which was evolved under the name of the 'Subsidized Industrial Housing Scheme' has been functioning for about 15 years. The scheme provides for the construction of accommodation of various kinds, such as open developed plots, skeletal houses, multi-storey or single-storey tenements and hostel and dormitory accommodation. The normal

form in which accommodation is provided is that of regular two-roomed house or multi-storied building. The construction can be undertaken either by the State Governments themselves, agencies authorised by the State Governments, such as State Housing Boards, by the employers or by co-operative societies of employees. The amount of financial assistance which is given for these houses is in the form of a capital subsidy and varies to some extent as between these types. The rent chargeable is also different and varies between Rs. 6.00 for an open developed plot and Rs. 31.50 for a small two-roomed house (Multi-storeyed).

4.2.2 The scheme for the provision of subsidised houses for industrial labour includes housing for mine workers also but not for plantation workers, for whom there is a separate scheme. According to the Plantation Labour Act, 1951, it is an obligation of the planters to provide houses for their workers. The plantations are mostly situated in remote and hilly areas and the workers come from distant parts of the country to work in them. Unless the employers provide accommodation it would not be possible for the workers to make their own arrangements. It was intended to provide accommodation for all workers in stages according to a phased programme and the employers are expected to provide accommodation for 8 per cent of their workers in one year. It was observed that they did not do so but pleaded financial difficulties. The Ministry of Labour therefore negotiated with the State Governments to provide Pool Guarantee funds to help the plantations. As this was not sufficient it has been decided to provide a subsidy to the planters to the extent of 25 per cent of the estimated cost of the residences in addition to a Government loan covering 50 per cent of the cost. The owner of the plantation has to find only a quarter of the cost in addition to the land.

4.2.3 One feature of the Subsidised Industrial Housing Scheme is that the scale of accommodation authorised in tenements consists of two rooms. Left to themselves, workers would be found huddled together with one or more families in one apartment. This does not provide the minimum privacy and decency necessary for family life. The late Prime Minister Shri Jawaharlal Nehru took much interest in this matter and gave orders that the standard scale of at least two rooms per family should not be whittled down in any circumstances. This principle has also been followed in the standards of accommodation laid down in the Slum Clearance Scheme referred to later. Recently however, the Government of Maharashtra have pointed out that the provision of accommodation on this scale would involve charging of high rents from the slum dwellers which they might not be in a position to pay. They therefore suggested that large double room apartments of area 29.5 sq. m. (320 sq. ft.) may be provided in which two families may be accommodated for the time being; when their economic conditions improved it may be possible to revert to the original system of providing two rooms for each family. The Government of India have reluctantly agreed to this proposal. A similar issue arose in connection with the accommodation provided for plantation labour in North India and South India. The view was to take some time ago that the ceiling of expenditure for standard accom-

modation provided for the plantation labour in Northern India States should be Rs. 3,000/- and for plantation labour in South Indian States it should be Rs. 2,400/-. Recently, this has been stepped up to Rs. 3,800/- and Rs. 3,000/- for North and South Indian States respectively. This requires a little explanation. The standard accommodation for plantation labour in each State is laid down by the Tripartite Conferences appointed for this purpose and the ceiling laid down in the scheme of the Government of India, is only an upper limit for the purpose of calculating financial assistance. The scales of accommodation are actually laid down by the Tripartite Conferences and not by the Scheme. The criteria of classification as between the North and South Indian States is not clear. There are certain States in an intermediate position, such as, Maharashtra, Orissa, Andhra Pradesh, etc. The prescription of different standards for North and South India under the official auspices may lead to some misunderstanding. An effort is therefore being made to evolve a uniform standard for all the States. Apart from this it is possible to hold that in places where the climate is relatively mild, a family can manage with less accommodation than in places with a more rigorous climate. For instance, in West Bengal and Assam where winter is severe especially in the hills, it is reasonable to insist upon the provision of two enclosed rooms per family for maintaining standards of health and decency. In the Southern climate where the weather is not too cold throughout the year it may be possible to manage with one room and a broad verandah to be used as a living room. In this matter therefore it is desirable to proceed with circumspection and leave the criteria flexible. When accommodation is provided for workers according to prescribed standards laid down by authority, it is necessary to insist upon the provision of ordinary comforts which would not add inordinately to the expenditure. An instance is the provision of electric lights. This matter was raised some time ago in connection with accommodation for plantation labour. The view officially taken was that since the addition of electric lighting will not be disproportionately costly, this amenity should be given in all cases. It may be said further that where possible, a sink or wash basin and bathing facilities should also be compulsorily provided for all dwellings. We cannot, of course, yet go to the extent of the standards laid down in the U.K. under the Housing Act of 1959 according to which certain standard grants were authorised towards the cost of providing five standard amenities, namely, a fixed bath, a shower, a wash basin, hot water supply, a water closet and food storage facilities.

4.3 Slum Clearance and Improvement Schemes in Urban Areas

4.3.1 The question of improving housing in cities and towns the improvement and clearance of slums is very important because it impinges directly on the problems of health and well-being.

4.3.2 In large cities, whether in India or abroad, one is immediately struck by the vast differences in standards of living between the richer and the poorer people. According to modern methods of thinking, even if differences in living conditions have to be tolerated, it is essential to provide at least the minimum standards of health to all citizens even if they cannot aspire to luxurious standards of comfort. The slums, as they exist at present, are not only an eye-sore but injurious

to the health not only of their inhabitants but of everybody else. In India, however, positive steps to improve the conditions of slums have been taken only recently. The general tendency has been to leave this matter to be dealt with by the municipal authorities. Our Slum Clearance Scheme defines 'Slums' as 'any area where dwellings predominate which by reason of overcrowding, faulty arrangement or design of buildings, narrowness or faulty arrangement of street, lack of ventilation, light or sanitation facilities, inadequacy of open spaces and community facilities, or any combination of these factors, are detrimental to safety, health or morals'. Apart from improvement, the scheme permits the drastic remedy of demolition and clearance if the slum are hopelessly bad. However, if the action contemplated by the Scheme is to be effective, the public authorities have to be fortified by legal powers to be conferred by legislation. There is a Slum Clearance and Improvement Act passed by our Parliament, but this is in force only in Delhi and Tripura and even here it has been inoperative or ineffective. The Scheme, as already mentioned provides for action in two directions. Where a slum area is capable of being improved without drastic action it provides for the grant of loan to the municipal authority for effecting the improvement. It also authorises the acquisition of slum areas which are declared to be clearance areas. In such places the concerned areas are demolished and new structures conforming to the minimum standards are constructed in their place. The private landlords in the slum areas, if the areas are improved, obviously stand to benefit by the increased annual value of their property. On the other hand, they have not sufficient incentive to improve the area on their own initiative. In fact they often resist any effort to improve the condition of their buildings. It is often noticed that even the residents of the slum buildings resist governmental action to move them out and resettle them in modern sanitary habitation because in many cases they earn their livelihood in the vicinity and any shifting to a distant area will dislocate their means of livelihood. The Slum clearance Scheme of the Government of India therefore provides that State Governments who apply for financial assistance under the scheme should ensure that the bulk of the persons living in the slum areas will be accommodated in the same area after they are improved or modified. The Slum Clearance Scheme which is in operation as a social housing scheme under the development plans only attempts to deal with the problem in a restricted manner. It is often found that in the urban areas the locality occupied by slums can be more usefully utilised in some other manner, for instance, for construction of a wide road or park or for some other public purpose. In such cases, it is inevitable that the inhabitants of the slums should be moved to other areas. Such a scheme of urban removal cannot be dealt with under the limits of the Slum Clearance Scheme and other plans of urban development have to be invoked to deal with such situations.

4.3.2 The squatter problems or the problem of uncontrolled urban settlement, as it is now often called, may perhaps be considered as one aspect of the slum problems. This problem is found in various forms in all countries particularly the undeveloped countries. In India so far as we know a consistent attempt to solve the problem has been made only in Delhi where the phenome-

nal growth of the city within the last 20 years has given rise to large scale influx from the villages and the country-side. The tendency of these newcomers to occupy vacant public or Government lands and to build for themselves shacks and jhuggis which are insanitary and offensive to the eye has given rise to a major problem. It was in 1959 that an effort was first made to survey the magnitude of the problem and to attempt a solution. A census of the squatter colonies conducted by the Delhi Administration showed that the number was about 50,000 families. Some of these were Government or municipal employees or employees of other local bodies or authorities. It was hoped that such persons would be given accommodation by their employers. Some others were construction workers and other such fluid sojourners and did not require any permanent arrangement. The other inhabitants of the squatter colonies were removed to transit camps and given land of 20.9 sq. m. (25 sq. yards) each, which is barely sufficient for physical accommodation of a small family, where they were allowed to build temporary hutments. It was hoped that it would be possible to move them to more permanent and satisfactory accommodation before long. The intention at first was to give them 66.9 sq. m. (80 sq. yards) each per family on a long term lease or, in the alternative, to accommodate them in double roomed tenements in multi-storeyed buildings. In 1960 it was hopefully expected that in one or two years the problem would be liquidated. It is estimated that till March 1967 only 21,733 eligible squatter families had been cleared out and accommodated elsewhere. Obviously this only touches the fringe of the problem. Meanwhile, it has not been possible to limit the problem to the dimensions contemplated in 1960. The proposal now is that the main points of the Scheme as approved should be retained but jhuggi-dwellers who are not qualified for alternative accommodation under the Schemes because of being late-comers should be moved to earmarked sites on the outskirts of the City of Delhi where they will be provided with the bare minimum requirements such as community latrines, hand pumps for water, etc. Care will also be taken to utilise the cleared lands for public purposes as soon as they are freed from the unauthorised occupants. The problem posed by the unauthorised occupation of public lands has attracted much attention in the recent international Seminars. It is usually referred to as the problem of "uncontrolled urban settlement". The phenomenon is found in various undeveloped countries. In France squatter settlements are referred to as *Bidonvillas*, in Peru they are called *Barriadas* and in Turkey *Gecekondu*; in Leopoldville (Congo) they are referred to as *Villas extra-coutumiers*; and in Venezuela they are called *Ranchos*. However, described, the problem is essentially the same. Some learned authorities consider that the phenomenon is a demonstration of protest by the non-propertied classes against the failure of society to provide them with adequate house room. The tendency at present is to regard this not as a problem which can be localised and dealt with by measures of control but as part of a dynamic question bound up with the continuous urbanisation of the rural areas owing to economic and social causes. The United Nations Committee on Housing, Building and Planning which recently met at Geneva reviewed the matter and the general view taken was that the social angle should

also receive consideration in dealing with the subject. The Committee considered that since the wholesale removal and redevelopment of such areas might be beyond the resources of the Government of the developing countries, it would be desirable to take up improvement of such uncontrolled urban settlements by giving the highest priorities to services like water supply, drainage, roads, electricity, etc. It appears therefore that in tackling the problem a twofold approach should be adopted: while haphazard settlements in valuable urban property required for other purposes should be cleared, an opportunity should be given to settlers to create new urban settlements adjacent to the existing towns and to develop the essential sanitary and civic conveniences. According to our own Scheme now under consideration, it is possible that the periphery settlement proposed might in time develop into new urban suburbs if we take care to see that the development is systematic and properly controlled.

5. RURAL HOUSING SCHEMES

5.1 One of the matters which has recently attracted considerable attention is the improvement in the living conditions of the inhabitants of the rural areas. While most of our population still live in villages, the political centre of gravity has always been the town. In social welfare measures the needs of towns have usually received much more attention. It is only within the last 15 years that the need to improve the living conditions of the villagers has been accepted as an urgent social task. Any visitor to our villages cannot fail to be struck by the large amount of dilapidated and decrepit dwelling units in general use. What makes the problem more disquieting is the insanitary and unhygienic conditions in which many of these houses are situated. Before the First Five Year Plan was formulated, a Committee, known as the Environmental Hygiene Committee, went into the conditions in the villages and came to the conclusion that it was beyond the capacity of the Central Government to take up the task of rebuilding houses in the villages. The only satisfactory way, according to the Committee, of improving the layout of the villages and the houses in them was to replan them afresh in perhaps new places but this was a task of great difficulty and would encounter stiff resistance also. The Committee therefore thought that all that could be done was to improve communications, open up roads where there were none, provide water supply and grazing grounds for cattle and persuade the villages—

- (1) to put in a few windows and keep them open;
- (2) not to live with the cattle; and
- (3) to put up latrines of sanitary type.

A model house could also be constructed in each village for educative purposes. The First Five Year Plan also did not take up the task of housing the villages as a national programme. This was left to the State Governments with the suggestion that they should adopt the principle of aided self-help more or less on the model followed in Puerto Rico in somewhat similar circumstances. Any assistance given should be in the form of building materials and technical information and guidance and in the construction of houses the villagers should be induced to utilise locally available building materials. Subsequently, a formal

social housing plan, entitled the 'Village Housing Projects Scheme', was drawn up in 1957. The essential feature of the Scheme was that in a phased programme 5,000 villages were to be selected all over the country for improvement and development over a period of 10 years. A social and economic survey of the village was to be done first. The villagers who wished to rebuild or improve their houses were to be given loans estimated to represent originally 50% and later 80% of the total cost. This was to be repaid over a period of 20 years. The State Government was to provide technical assistance and there were to be model houses constructed by the six Rural Housing Wings distributed all over the country. It was emphasised that the improvement of housing in villages was not to be attempted in isolation but as part of a concerted effort to improve social and economic conditions in the rural areas. Subsequently, the emphasis was shifted from wholesale replanning and rebuilding of villages to the improvement of the existing village. Grants were authorised from the funds provided for two purposes, namely, (i) the improvement of drains and streets in the villages and (ii) the provision of free house sites for the landless agricultural labourers. It was hoped that by the joint effort of all the organisations concerned with the improvement of rural conditions, the economic condition and living standards of the villagers could be improved.

5.2 Experience did not entirely fulfil the high expectations which were raised about the village Housing Projects Scheme. In the period of about ten years which was elapsed after the Scheme was inaugurated an amount of 18 crores of rupees has been allocated to the Scheme in the Development Plans out of which only an amount of about Rs. 8½ crores has been utilised. The total number of rural houses constructed with the aid of funds provided under the Scheme is about 35,200. When the matter was investigated recently by the Estimates Committee of Parliament the reasons for the poor show made were gone into in detail. Various reasons were advanced for the lack of progress. The Central Government blamed the State Governments for their indifference and apathy; the State Governments pleaded that the conditions for the grant of loans were too elaborate and difficult for the villagers to fulfil and that the amount available as loan was too small. The Estimates Committee concluded that sufficient interest had not been taken in the Scheme by anyone and also that the conditions necessary for the success had not been thought out realistically. They suggested that the part of the scheme relating to the provision of house plots to agricultural labourers should be taken out and made into a separate scheme. It is understood that the manner in which the scheme should be revised is now engaging the attention of the Planning Commission. It is clear, however, that if any improvement in the living conditions of the villagers is to be achieved, the first condition is that the villagers should want to improve their conditions. For this purpose examples of elegant and gracious methods of living with limited means should be provided to them. In the present conditions the villagers are not given any incentive to utilise any part of their income, which they can spare from urgent necessities, for the purpose of

improving the quality of life in the present instead of frittering it away in festivities or hoarding for the future. Further the exhortation to rely upon local materials and indigenous patterns as far as possible have remained mainly text book maxims; in practice they have not been followed. It is possible that in spite of the wise guidance from the National Buildings Organisation, the technical advice available for house construction everywhere is heavily weighted in favour of steel, concrete and cement both in towns and in villages. In fact houses in both towns and villages built with modern engineering assistance look alike. We have to show more originality of thought and adaptability, in utilising materials easily within our reach, if any noticeable improvement is to be made quickly. At the same time we have not taken sufficient trouble to make use of modern sanitary and hygienic knowledge. Although the demonstration houses and technical assistance are there for the asking, there is no firm guidance to villagers to build according to those patterns. In most of the houses built in the villages round-about Delhi, which members of the Estimates Committee visited about a year ago, it was found that the villagers continued to keep their cattle in living rooms and that there were no sanitary arrangements provided. In most of the cases the loans given for house building had not been repaid at all; this may well be the case all over the country and it is possible that much of them may have been utilised for other pressing purposes than housing. It seems clear that in the present circumstances positive improvement in the living conditions of the villagers cannot be brought about merely by Govt. effort since what is lacking is not merely financial resources but also the will to improve. It may be that if voluntary non-official organisations were to take a hand and give their attention to moral persuasion and education in these matters, the results may be spectacular.

6. HOUSING SCHEMES FOR ECONOMICALLY POORER SECTIONS

The lowest income strata of the population is referred to in the official phraseology as the "economically backward section of the community" and houses for these persons are provided with subsidy to the extent of 50%. Since 1st April 1966 the Scheme is being operated in conjunction with the scheme for the provision of subsidised houses for industrial workers as an integrated scheme.

7. LAND ACQUISITION AND DEVELOPMENT AND OTHER SCHEMES

7.1 We have so far dealt with Housing Schemes of the Central Government formulated with the intention of assisting specially handicapped or deprived sections of the general population. There are also some other schemes whose object is to provide housing for the comparatively economically better placed persons. These are schemes for the provision of loans to persons in the middle income group with incomes between Rs. 6000 and Rs. 15000 and the similar scheme for the lower income group. These schemes are operated in conjunction with other scheme known as the 'Land Acquisition & Development Scheme'. In the major States funds for these Schemes are provided by the Life Insurance Corporation. The intention is that the State Governments or municipal authorities or improvement trusts should utilise part of this money to purchase lands in the vicinity of towns on which future suburbs or

housing colonies can be developed. The land is levelled and developed, that is, services such as roads, sewers, electricity, etc. are provided, house plots are marked out and either sold outright or leased out to intending residents or colonisers. The money realised from private persons is used to recoup the original advance from the Life Insurance Corporation or the Government resources as the case may be; the replanned funds are then used for the development of further land which is also used in the same manner. Thus the initial loan or grant is used over and over again for development of successive areas; in brief, it is utilised as a 'revolving fund'. The land thus developed is used for housing colonies or persons in the low income group or middle income group, or other housing.

7.2 In the social housing schemes of the Govt. of India which provide for the payment of subsidy there is generally no intention to part with ownership rights to the tenants. Certain of the schemes, for example, the scheme for industrial workers and for slum dwellers, does contemplate the sale by hire-purchase of the houses but these have not been generally adopted or operated except in isolated cases. There has been some difference of opinion about the desirability of allowing the sale of such houses. The practice in this respect also varies in other countries. One school of opinion which is mostly favoured by American authorities on housing favours the grant of ownership rights to the tenants on the view that what a man will put into his dwelling environment is directly influenced by the security of tenure which largely determines what he can get out of it. There is an opposite view that where accommodation is scarce it would not be desirable for the State to part with the right of ultimate control. Most of the so-called Board housing constructed by local bodies in the United Kingdom was let out on rent but recently the outright sale of some of these houses appears to have been approved. In this country the question has arisen in an acute form in regard to the house construction for industrial workers. If such housing is in the premises of the factory, it is obviously not possible to allow the present generation of workers to part with the ownership rights to outsiders who may not be workers in the factory at all. On the other hand, it is true that if ownership rights are provided, it will help to create a stable and permanent labour population in our industrial towns. This is indeed a weighting argument which cannot be lightly brushed aside. But the two viewpoints can be reconciled only if there is a continuous supply of housing for industrial labour. Even if this is the case, so far as the particular problem is concerned, the decision should depend upon where the industrial housing is located. If it is in the premises of the factory and the interests of security or efficient operation or other reasons make it necessary that only workers in the factory should live in those premises, then the ownership rights cannot be alienated to the workers. On the other hand, if the houses for labour are in general residential districts and there is a continuous supply of housing, there is no objection to allowing the workers to purchase the ownership rights in their houses.

7.3 It is necessary to say a word or two about the manner in which the subsidy schemes are operating in India. In other countries State

financial assistance in respect of social housing schemes is usually given either in the form of rent subsidy or of a cash grant to make up the deficit in rents. If the system followed is rent subsidy, the owner of the house is given a grant to make up the difference between the rent which is recovered from the tenant and the economic rent which the owner can ordinarily expect. If a cash grant is given to the tenant, it is calculated so as to make up the difference between the rent charged and the amount which he can reasonably be expected to pay having regard to his general economic condition. The last alternative particularly can be operated only on the basis of a careful review of the economic condition of the individual families and presupposes a very sophisticated standard of administration. The best way of conducting such a review is through impartial non-political expert bodies. In our country there are obvious difficulties in setting up or administering such a system. The subsidy needed is therefore given in the form of capital subsidy, that is, the cost of putting up residential structures of various kinds is estimated and a proportion of

the cost is made over by the Central Government to the State Governments or to other constructing agencies as a lump sum. The rent which is recovered from the tenants is based upon the cost to the constructing agency in which the capital subsidy from the Govt. of India is taken into account. One drawback of this system is that it involves larger lump sum expenditure from the budget than annual grants. However, as already stated, our present situation does not allow of either of the alternative procedures being adopted.

We in India are thus far from the ideal situation in which a general housing scheme for all classes of people can be framed and houses made available to all sections based upon their requirements. As the general economic situation improves and national wealth increases it may be hoped that we shall be able to adopt such a system. At the same time we may hope that an active private house construction industry will come into being and operate steadily to fill up the gaps, in Government schemes for Housing.

Problems in Housing Management**

By

Dr. C. M. Palvia†

1. NEED FOR HOUSING MANAGEMENT

1.1 The efficiency of management of farms, industry and business—including labour and personnel management is either well developed or its importance is well understood in different countries and in various economic and political systems. However, the management aspects of housing have not received the attention they deserve nor has their importance been well understood, despite the fact that housing accounts for approximately 20 per cent of the gross fixed capital formation and 3-5 per cent of the gross domestic product in various economies. Table in Appendix 1 illustrates the proportion of housing construction to total construction expenditures, to gross fixed capital formation, and to gross domestic product, in a number of countries. Housing, building, and other construction now account for as much as three-quarters of capital formation in countries at various stages of economic development and it is estimated that world construction during the next forty years will equal the total of construction during the last 6,000 years¹.

1.2 In developing economies two types of industrial developments are crucial: (i) Basic, heavy and long-gestational capital goods productive apparatus and giant irrigation works, roads, railway and communication forming the infra structure should be granted higher priority as a long term objective, and (ii) consumer goods industries and immediately productive (of tangible goods) development projects should also be granted a high priority to serve as an anti-inflationary measure as well as to provide larger supply of current consumption goods to meet the rising consumption demand—a consequence of large capital outlay and the multiplier effect. In this situation, housing programmes, essential as they are, as one of the most concrete measures of raising living standards, should find a place in the overall investment programme as they contribute in improving labour productivity.

1.3 Better housing not only improves the health, well-being and mobility of the labour force and raises its productivity, but also ensures the provision of productive employment in building, building materials and other associated industries. Furthermore, the proper management of housing, in addition to being conducive to human welfare, contentment and employment, saves capital and preserves the sizable capital stock of the community, thereby reducing depreciation and obsolescence.

2. THE QUESTION OF HOUSING IN DEVELOPING COUNTRIES

2.1 The developing countries of Asia, Africa and Latin America contain three-fourths of the world population, which is slightly over 3,000 million persons. Asia alone accounts for more than 55 per cent of the world population. In these areas, the "demographic gap" has been widening, owing to the abatement of health hazards. There is a rapid rate of population growth, ranging from 1.8 per cent to over 3 per cent *per annum*. Thus, the population of Asia, Africa and Latin America could increase 30 per cent during the nineteen sixties. In addition, the urban population is increasing so sharply that, between 1960 and 1975, nearly 200 million persons will be added to urban areas in these continents, thereby doubling the existing urban population. With regard to this problem—the size and number of large urban areas—the situation in Asia is particularly serious. More than one-third of the cities of the world having a population of over 100,000 are in Asia and the number of these cities is growing rapidly. For example, the 1951 census stated that there were seventy-five cities in this category in India, the number has risen to 108, according to the 1961 Census.

2.2 The rapid growth of population and the movement from rural to urban areas increase social maladjustments, housing shortages, slums and shanty towns. In developing countries, a migrant from the rural areas is faced with problems of adaptation to urban life, unstable employment, social tensions, etc. Even in developed countries and in very old cities throughout the world, the living conditions of slum dwellers and rural migrants fall far below acceptable standards of urban living and these persons experience serious difficulties in adapting to modern ways of life in the rapidly expanding urban centres. However, it is among the rural migrants to the cities in developing countries that these problems are most acute, because their incomes are usually so low that they are not in a position to pay rents for dwellings of acceptable standards. Not only is there a severe housing shortage, but also approximately one-fourth of the urban houses and three-fourths of the rural houses in developing countries with a higher proportion in Asia require replacement because of unfitness in one or many respects. As an example of the housing deficiency, the density of households in India is about 125 for each 100 houses in urban areas and 112 for each 100 houses in rural areas. Furthermore, the overcrowding is increasing, owing to the growth in population and to urbanisation. The situation

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Views in the paper are in the personal capacity, the Organisation to which the author belongs is not responsible for the views expressed.

Material in this has been borrowed extensively from the earlier two papers prepared by the author in connection with the meeting of Group of Experts on Housing Management and Tenant Education, Wellington, New Zealand (U.N.) on (i) Socio-economic aspects of housing and (ii) Housing Management and Tenant Education in India.

(1) "Report of the First Session of the Committee on Housing, Building and Planning", 21 January to 1 February 1963 (United Nations document E/3719/Rev. 1), paragraph 25.

in the developing countries, presents a striking contrast to that found in some of the more advanced countries, such as Belgium, France and the United States, where the number of dwellings is greater than the number of households.

2.3 To cope with the annual increase in population and to arrest further deterioration of the housing situation, an annual construction rate of 8.6 million dwellings—4 million in urban areas and 4.6 million in rural areas is required by 1965 in the developing countries of Africa, Asia and Latin America. It is virtually impossible for the people themselves to improve their housing conditions, owing to the low level and inequality of incomes in both rural and urban areas and the fact that house construction requires long-term financial arrangements. Private enterprise does not find it commercially feasible to provide better housing in such circumstances, while philanthropic housing, when it exists, can be only an extremely small effort in the face of the tremendous task involved. As a result, the role of the State in housing assumes greater significance in developing countries, justifying the intervention of the public authorities in the housing field, in an effort to eliminate the social menaces of slums and overcrowding. In all countries, therefore, housing is receiving both capital and recurring subsidies from public funds.

2.4 Regardless of its stage of development, public housing confers certain special advantages that are not available in private housing. It effects saving in the costs of housing and related essential community services, while providing a tangible objective for saving and thrift that can help to promote the saving habit in a community. Public housing acts as a catalyst for consumer co-operatives and other co-operative movements when co-operative, non-profit, public or semi-public institutions engage in the development of housing estates or colonies. It stabilizes housing market forces through the dissemination of basic market statistics and promotes the growth of the building industry, thereby generating employment in the building trades. Public housing benefits the underprivileged sections of the population and ensures the observation of higher social priorities. It initiates and inculcates a spirit of broad social outlook and enlightened management, and, at the same time, develops a spirit of community feeling that contributes to the organised growth of law and order. Such housing also imparts general education in the ways of living and the eradication of factors of social tension, and offers a training ground for leadership through the group organisation method. Also, it often educates in the principles of home economics. The organization of socially motivated housing activities assumes different forms. It is either directly administered by the State, by a statutory authority created by the State or by a local authority. Thus, it may include co-operative societies, non-profit organizations, self-help societies, etc, which are primarily concerned with ameliorating the plight of the masses that either have no housing or are enduring bad housing conditions. The available public funds should be spread as widely as possible to permit the mobilization and utilization of individual and institutional resources.

2.5 Public housing through socially motivated organizations, which has been accelerated during the post-war period, has demonstrated the efficacy

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and urgency of public housing in both developed and developing countries. The trend is in favour of socially motivated organizations, although there has been a slight decline in the share of such dwellings in some countries where high levels of housing have already been reached. In advanced countries, the number of houses annually constructed for each 1,000 of population has increased and now averages from five to six houses for each 1,000 in a few countries, including New Zealand, the number is ten or more, (see Table 2 in the Appendix). While the annual housing output has increased in the developing countries, it is still too small—approximately one house for each 1,000 of population in, for example, India and Indonesia—to prevent the deterioration of the housing situation. Possibly one of the factors accounting for this slow growth is that little international finance is available for the construction of housing in these countries, although such financing is available for other sectors of development. As a result, one finds that in some countries the volume of new home ownership is slowly declining and rental housing is growing at a faster rate. The share of multi-unit dwellings in total dwelling contribution is increasing. These two trends—the increased proportion of rental dwellings and the increase in multi-unit dwellings—bring to prominence the question of housing management and tenant education and pose serious problems in the maintenance of housing stock and the cultivation of social spirit and community feeling.

2.6 The general aspects of housing and the particular aspects of public housing discussed in the foregoing raise various aspects in 'housing management'. They are: (i) judicious use of land and enunciation of proper land policy, particularly for urban areas; (ii) proper management of financing; (iii) maintenance administration and (iv) Tenant Education because of the increasing share in public housing and the impersonal character of ownership of public housing.

2.7 The question of land policy and urban land policy is taken up with the question of investment financing and management financing. The main burden has been that in all countries, public funds are flowing in the housing sector in larger and larger volume. Both in 'free' and 'centrally planned economies', 50% to 60% of capital funds for housing come from the public funds; in the U.S.S.R. public funds share goes as high 70%. Besides capital funds, as stated earlier, subsidies in terms of rent, tax and interest are also supplemented from public funds to nurse 'social housing'.

3. MANAGEMENT OF PUBLIC HOUSING IN INDIA

We will confine our attention to the way the management of public housing in India is being done. This again will be confined to management of housing by the Government of India for their employees because this type of management has a long stay in this country. Some facts of 'public' and 'social housing' management associated with the housing schemes under the quinquennial plans would also be referred to at suitable places.

The management of residential accommodation provided by the Government of India for their employees indicates some broad points in respect of 'housing management' handled by public autho-

city.² Central Government's housing construction and management, financed out of general revenue, is conducted through three agencies: (a) Central Public Works Department or State Public Works Department, who construct and are also responsible for maintenance and up-keep. (b) the allotment authority, i.e., the Directorate of Estates; and (c) the rent collecting authority: (i) administrative department in the case of non-gazetted staff, and (ii) the office of the Accountant General, Central Revenues for gazetted staff. What follows afterwards details the broad functional aspects handled by these agencies.

3.1. Maintenance and Other Recurring Changes

3.1.1 Housing investment is usually large in any economy irrespective of the economic levels reached and the kinds of economic systems prevailing. Therefore, careful attention is imperative for the maintenance and up-keep of housing investment which is really an investment in citizenship. The Public Works Department(s), besides constructing the housing projects and determining the value of construction capital cost of public housing, is/are also responsible for their maintenance and up-keep. In public housing, there are different types of houses with different age structures; some are old, some are middle-aged and some are young. Maintenance and up-keep expenditure is determined by the public authority, largely on the basis of original capital cost. A schematic idea about maintenance and other recurring expenditure is available from Tables 3

and 4 in respect of permanent and temporary structures in the 'general pool' of residential quarters of Government of India, constructed at different periods of time. It can be seen that the percentages of expenditure to the original cost for annual and special repairs on account of buildings, water supply and electricity connections, are higher in the case of old buildings—whether permanent or temporary—and are lower in the case of new buildings. So also charges in respect of each of the items (except electricity connections) are more in case of temporary buildings.

3.1.2 According to the periods of construction, the public housing for Government employees has been divided into three categories: i.e. (1) pre-1942 permanent and temporary structures; (2) permanent and temporary structures constructed between 1942 and 1947; and (3) all permanent and temporary structures constructed after 1947.

3.1.3 On pre-1942 permanent and temporary structures (as shown in Table 1) expenditure proportion to capital cost for the 'annual' and 'special repairs' is 4% and 5% respectively. For buildings constructed during the years 1942-47, the proportions to original cost for 'annual and special repairs' on permanent and temporary structures are 2.5% and 3.75% respectively. For third category of houses, i.e., those constructed in post-Independence period, the percentages for 'annual and special repairs' as regards permanent and temporary structures are 2% and 5% respectively.

TABLE 1—Percentages to Original Cost of Residential Buildings for Calculation of Annual and Special Maintenance and Repair Charges

Age of the House	Repair charges					
	Permanent structures			Temporary structures		
	Annual	Special	Total	Annual	Special	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Pre—1942	3.00	1.00	4.00	3.50	1.50	5.00
1942—1947	2.00	0.75	2.75	2.75	1.00	3.75
Post—1947	1.50	0.50	2.00	4.00	1.00	5.00

3.1.4 As regards water charges (as shown in Table 2) on pre-1942 permanent and temporary structures, percentages to original cost of water system charged are 4% and 4.55% respectively.

For 1942-47 permanent and temporary structures the percentages are 2.75% and 5.25% respectively. For post-1947 permanent and temporary structures percentages are 2 and 5 respectively.

TABLE 2—Percentages to Original Cost of Water Supply System in Residential Buildings (Government of India) for Calculation of Annual and Special Maintenance and Repair Charges

Age of the House	Water charges					
	Permanent structures			Temporary structures		
	Annual	Special	Total	Annual	Special	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Pre—1942	3.00	1.00	4.00	3.50	1.05	4.55
1942—1947	2.00	0.75	2.75	2.75	1.00	3.75
Post—1947	1.50	0.50	2.00	1.00	1.00	2.00

(2) Volume of private rental housing in India is meagre (largely confined to big cities), ill-organised and not amenable to uniform administration. Only possibility to ensure some standardisation can be through various heterogeneous building by-laws laid down by local bodies. Again, exploitation of tenants by private enterprise is attempted to be eliminated in some degree through various Rent Control Acts.

(3) Total number of houses is about 35,000 in the 'general pool',

3.1.5 In respect of electricity charges (as shown in Table 3) for pre-1942 percentages to original cost of electricity installations charged are 12.50% for both permanent and temporary structures. For

1942-47 structures of both the types the charges are 11.25% and for post-1947 structures of both the types the charges are 8%.

TABLE 3—Percentages to Original Cost of Electric Installation in a Residential Building (Government of India) for Calculation of Annual and Special Maintenance and Repair Charges

Age of the House	Electric charges					
	Permanent structures			Temporary structures		
	Annual	Special for fans	Total	Annual	Special for fans	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Pre-1942	9.00	3.50	12.50	9.00	3.50	12.50
1942-1947	8.00	3.25	11.25	8.00	3.25	11.25
Post-1947	5.00	3.00	8.00	5.00	3.00	8.00

NOTE.—In special charges reduction is made by 1.50 per cent if fans are not provided.

3.1.6 These annual charges, affect the rates of rents that should be calculated and later on fixed for charging from the tenants in addition to other factors which are discussed in the next Section. By and large it can be said that 'external repairs' expenses amount to about 10% of the rent and 'internal repairs' expenses range between 7½% to 10%.

3.2 Rent Policy and Administration

3.2.1 Public Works Department(s) are responsible for establishing relationship between the capital cost and the 'standard rent'⁴ that should be charged from the tenants. However, 'standard rent' is different from 'economic rent' (i.e. the rent at which a house must be let in order to cover interest on capital, sinking fund contribution and the cost of maintenance and management.) A special Cell in the Chief Engineer's Office (CPWD), on the basis of various factors mentioned above determines the 'standard rent' for various apartments. However, 'standard rent' contains elements of subsidy because in determining the capital cost of land, nor the cost of preparation of site as well as cost of layout of the garden are taken account of if the rent is fixed under F.R. 45A. So also subsidy, though to a lesser extent, is provided if the rent is determined under Fundamental Rule 45-B where department charges as well as cost of layout of garden are not taken into account.

3.2.2 In actual practice, the rent charged is either the 'standard rent' (which is 6%) or 10% of the salary of the Government servant, whichever is less which may also devolve further subsidy in some cases. In case of Government servants

drawing less than Rs. 250 p.m. the percentage rent charged is 7½ only of the salary and thus to benefit the low-income employees subsidy element gets further enhanced.

3.2.3 Difficulties have arisen in respect of rent-fixation of a structure, because houses constructed a few decades ago had cost less and, therefore, their 'standard rent' is also low. Whereas in the case of the newly constructed houses, capital cost is three times of what it was say 30 or 35 years ago. Accommodation allotted to various categories of Government servants is fixed on the basis of different salary ranges⁵ and also on the basis of 'living space'. It becomes anomalous that for the same accommodation a Government servant has to pay three times the rent (if living in new house) as compared to the one who lives in old house; resultantly, an occupant of an old house receives a subsidy or an occupant of a new house is penalised in spite of the fact that both belong to the same salary range.

3.2.4 In order to remove this anomaly of charging rents, a technique of 'pooling' of different categories has been followed. 'Pooling' signifies that the total 'living area' of old and new houses is grouped and added into one lot along with their capital cost, and on the basis of 6% rate of interest average rent (called 'unit rent') per hundred square feet is determined.

3.2.5 Variations in 'living area' referred to in para 2.1.1, occur according to the type of structures. For examples, in old houses there are larger verandahs, bigger servants' rooms and courtyards and out-houses which are either non-existent

(4) 'Standard rent' shall be either (a) a percentage of such capital cost and equal to such rate of interest as may from time to time be fixed plus an addition for municipal and other taxes payable by Government both for ordinary and special maintenance and repairs or (b) 6 per cent per annum of such capital cost, whichever is less. In some special cases, departmental charges and cost of developed land-site are also added to arrive at total capital cost of the house for determining the rent to which another amount of 17½% is added. In the case of leased residences the 'standard rent' is the sum paid to the lessor plus an addition determined under rules which provide for meeting charges both of ordinary and special maintenance and repairs and for capital expenditure on additions or alterations as may be a charge on Government and for the interest on such capital expenditure, as also for municipal and other taxes payable by Government. (Ref : F. R. 45, 45-A 45-B, and see Annex. I and II).

(5) See Appendix III.

or they are of smaller size in newly constructed houses. For determining 'living area' certain proportions of 'plinth area' in respect of different types of rooms and verandahs are taken as shown in Table 4. It can be seen that in case of accommodation under 'general pool', 'living area' of verandahs and corridors is calculated at 25% paved court-yards at 5%, of out-house rooms at 25% and of out-house verandahs at 12½%. In case of accommodation provided for Members of Parliament, verandah and court-yard proportion taken is 50% for paved court-yards and verandahs of out-houses no account is taken at all but for out-houses 100% area is taken.

TABLE 4—Calculations of Living Area in Government Accommodation

Item	Per cent of plinth area	
	General pool	Members of Parliament
(1)	(2)	(3)
Rooms	100%	100%
Verandah Corridors	25%	50%
Courtyards	5%	Nil
Out-houses (rooms)	25%	100%
Out-houses (Ver.)	12½%	Nil

3.2.6 A building or a residential flat in course of time requires certain additions and alterations both for raising its life-span as well as for making it more serviceable to the occupant. This enhances the capital cost of the house and, therefore, allowing of rents to remain at initial levels is not justified. Therefore, in the event of putting additional capital cost amounting to more than 5% of the original cost, the rents are revised quinquennially commensurate with increase in the capital cost. In pursuance to this principle, revision was done for the first time in 1952 and the 'unit rents' were fixed at Rs. 5.84 per month for officers' quarters, Rs. 7.23 for clerical quarters, and Rs. 4.2 for hutments and Rs. 6.34 for the quarters meant for Members of Parliament. Again, the rents were revised in 1958 (though the revision was due in 1957). The 'unit rent' according to 1958 revision rose to Rs. 7.50 per month for both the officers' and clerks' quarters and Rs. 4.60 for hutments and Rs. 7.34 for M.Ps' quarters. In the case of officers' quarters, the rise in 'unit rent' in 1958 was to the extent of 28% and putting into effect the rise of 28% at once would have been a heavy burden on the tenants and, therefore, it was decided by the Government to raise the rent by stages, i.e., 10% in the first year—beginning from July 1958—and another 10% in the second year and the remaining 8% in the third year; thus in the third year, beginning from July 1960, full 'unit rent' of Rs. 7.50 per month became effective.

3.2.7 There are four pools for purposes of 'pooling the rent' of old and new houses. One of the pools is for hutment quarters; second one is for the officers drawing emoluments below Rs. 500 per month (recently, this category has been equated for officers drawing emoluments below Rs. 700 per month); and the third category is for officers whose emoluments are Rs. 500 and above (recently revised to Rs. 700 and above per month but below Rs. 1300) and the fourth category is of the quarters assigned for use by Members of Parliament.

3.2.8 For proper surroundings, garden areas around residences are essential. Accordingly, some of the Government residential quarters have facilities of garden areas. For the garden areas, the rents charged from the occupants vary according to the type of residences. For example, for government officers' bungalows monthly rent for gardens is Rs. 135 per month per acre of garden area for residential flats Rs. 168 per acre per month and for the quarters of the Members of the Parliament and very senior officers' residences and for the residences of ministers Rs. 162.50 per acre per month.

3.2.9 In a welfare state while providing houses either for Government servants or for the public, it is not enough to provide cubicals or physical structures of houses, but it is incumbent and desirable to provide other surroundings within a housing estate/colony, which may be helpful in developing community life. Provision of general parks, gardens, playgrounds, children's parks, shopping centres, schools, community halls, etc, is, therefore, necessary. In Government housing colonies in New Delhi area, the parks, etc, have been provided by the Government, as New Delhi is being maintained as a 'garden city'. In other housing colonies other than New Delhi, the parks, etc, are provided by the Local bodies. Shopping centres are provided in most of the new colonies of new Delhi; for these the rents charged are according to F.R. 45(B). The school buildings are constructed in the housing colonies by the Government, but it is not debited in the budget of the Public Works Department, but debited to the Education Department.

4. ELIGIBILITY FOR ALLOTMENT

4.3.1 When the dwelling units of housing projects are ready, and their rent formulae are determined as described above, question arises of selecting the tenants. This is the responsibility of the Directorate of Estates for central government employees in the 'general pool', etc. In case of houses managed by various State authorities for State Government employees as well as by various statutory authorities in case of houses constructed under the plan housing schemes, the respective agencies are responsible for determining eligibility and allotment procedures. In equity, proper basis for eligibility would be the suffering through 'hardship'. The judgment about 'hardship' might be made on the basis of factors, such as 'over-crowding' (judged in terms of bed-room deficiency), ill-health, lack of separate home or other unsatisfactory conditions. Residential and employment qualifications in a particular area are no doubt important, but they should not deflect the judg-

(5) 'Unit rent' means rent per 100 square feet of 'living area'.

ment of the housing authority from the over-riding factors stated above. For this purpose, 'points scheme' integrated with 'group scheme' is being followed with advantage in advanced countries. This is ideal to track. But in under-developed countries where shelter is very difficult to procure for large masses, these fine refinements have to wait for some future date.

4.3.2 There are different eligibility factors for different category and type of houses constructed are managed by different authorities which entitle members of various groups for being considered for allotment of the dwelling units—newly constructed or falling vacant. For example, under the Subsidised Industrial Housing Scheme, factory workers up to the income of Rs. 350/- per month are entitled to be considered for two-room houses under the same scheme, the factory workers drawing upto Rs. 250/- p.m. are eligible to be considered for skeletal housing, open developed plots, one-room houses and small two-room houses. Again, under Slum Clearance Scheme, slum dwellers whose income is up to Rs. 250/- p.m. in the cities of Bombay and Calcutta and up to Rs. 175/- in other towns are eligible for selection. The eligibility, for considering allotment in Government quarters of various types, is regulated on the basis of certain salary ranges of the employees.

5. SELECTION AND ALLOTMENT

5.4.1 Eligibility by itself does not entitle a person to get the allotment of a house under various Schemes. Selection is made dependent either on residential or employment qualification at any place or industry. Selection is made also by drawing of lots. In each of the cases, a panel of selected tenants is made and maintained for allotting houses as and when they are constructed anew or as they fall vacant. Sometimes family units can also be allotted to non-family workers under *Subsidised Industrial Housing Scheme* in case of small two-roomed houses, preference being given to a worker with a longer service, wherein he has the option to select another non-family eligible worker of his choice as a co-tenant. They are charged the fixed rent of the tenement without any subsidy plus 50 nP. per month. In case of *Workers' Cooperative Housing*, the list is prepared on the basis of length of service for allotment. (10% of the units can be allotted by the Managing Committee of the Housing Cooperative at its discretion for out-of-turn allotment for reasons to be recorded in each case). In case of the *tenements built by the employers*, the allotment is made by the management on the recommendation of an allotment committee on which there are equal representatives of the employer and the employees. Length of service is the main consideration, but the employer is given the discretion of allowing 15% of the tenements to workers other than those who qualify for the allotment from the list.

5.4.2 In spite of this, *State Governments and Statutory Authorities* enjoy freedom to utilise 2% of the dwelling units (constructed under *Subsidised Industrial Housing Scheme*) at their option for allotment to social workers and for use as office-cum-store and residence of managers-cum-rent collectors and other maintenance staff, such as porters, electricians, water and sanitary staff—whose presence on the premises is essential for the proper administration of the housing colonies built under the Scheme.

5.4.3 Under some of the schemes, allotment is made on the basis of "higher-purchase system", the rules of allotment being the same as above. In this case, under the *Subsidised Industrial Housing Scheme*, a worker has to deposit with the State Government or the statutory housing authority a lump sum equal to half the amount of the subsidy given by the Central Government for the construction of the house including rent which remains as the deposit on which interest is credited into allottee's account, till he becomes the owner of the house. The ownership vests in the allottee only after 30 years from the date of allotment. Till then the allottee is only a lessee and the agreement has to be executed to this effect. In case of *housing co-operative societies* the rules are the same. But when the allottee ceases to be entitled to the house or when the allotment is cancelled, he or his nominee or heirs have to hand over vacant possession of house to the authority concerned and the amount paid by him is returned to him, less a deduction on account of the depreciation of the house at the rate of 2% per annum, or as may be decided upon by the Government on the original cost of the house less any other amount which may be due from him on account of interest charges or other dues. However, in case the dwelling is occupied for over 3 years and if the tenant had been an industrial worker for 10 years, or over, at the time of his retirement or death, on paying full cost of the house in relaxation of the rules and with the prior approval of the Government, the site of the house is conveyed in his favour or in favour of his heirs or nominees even if a period of 30 years has not lapsed from the date of allotment, after obtaining an undertaking that they will not transfer the ownership of the house by way of sale, gift exchange or otherwise but their freedom to let out the house to any industrial worker by obtaining previous permission is not curbed in any way.

5.4.4 Allotting of residential quarters to government servants is regulated primarily on the basis of the "priority date" (i.e. the date on which a government servant entered a particular salary range corresponding to a particular type of flat) and a panel is made accordingly out of eligible allottees and when a government servant's turn comes, the allotment is made in his favour. However, on medical grounds 'out-of turn' allotment is also made. In some exceptional cases 'in public interest' on account of over-riding factors, allotment is also made. In some exceptional cases 'in public interest' qualification' is not the determining factor, nor 'hardship' (or 'over-crowding') is an over-riding factor, though 'ill-health' and 'public interest' do respectively account for out-of-turn and over-riding allotments. The basic criterion for an allotment primarily remains the date of entry (i.e. the priority date) into particular salary range.

5.5 Sub-letting

5.5.1 In general, subletting of the house is not permissible under any of the Housing Schemes and any default on this account brings about action which may amount to cancellation of allotment, enhancement of rent or imposition of fine.

5.5.2 Sub-letting by an allottee in a government-owned house for its employees is permitted, but he can do so only after obtaining the prior permission of the Estate Office. Recently, complete freedom has been given to a Government servant for allowing any other Government servant entitled

to Government accommodation, for 'sharing' the accommodation without obtaining prior permission. The charging of rent by the former from the latter, is a question of mutual adjustment about which Estate Office is not required to bother itself. However, it is incumbent on the main tenant and the co-sharer to observe all rules requiring proper cleanliness and up-keep of the house.

5.5.3 In the houses maintained by the Maharashtra Housing Board at Bombay, sub-letting is not permitted—and if a tenant defaults he can be easily detected because identity cards to the tenants (and their family members) are issued and regular inspecting staff inspects the tenements.

5.6 Eviction of Tenants

5.6.1 A government servant is not required to vacate a house if he proceeds on training under some Government scheme. But if he proceeds on training under 'study leave', then he can keep the house for about 6 months. In the case of a tuberculosis patient in the tenant's family, even if the tenant leaves Delhi, his family is allowed to stay in the house for 8 months. In case of death of the Government servant, his family is allowed to stay for 4 months; in case of transfer or retirement for 2 months; and in case of dismissal or resignation for 1 month.

5.6.2 A number of difficulties arise in case of getting the tenements vacated. But the frequency of defaults, in the residential accommodation under the 'general pool', is not large. Here also often the difficulty arises in case of retired persons and there are at present about 500 cases in Delhi and New Delhi and these cases are being dealt under the Public Premises (Eviction of Unauthorised Occupants) Act 1958 by the Estate Officer who is vested with judicial powers under the Act. Under Fundamental Rule 45-B, penalty clauses also exist in case of people not vacating the house; the penalty being largely in the form of enhancement of rent, which increases in stages up to the maximum of 3 times the 'standard rent' or three times of 10% of the salary. The defaulters (or their families) are required to vacate the allotted quarter, otherwise they are evicted under the judicial order of the Estate Officer, and if necessary, with the help of police. An appeal against the Estate Officer's order can be filed by the aggrieved tenant in the court of the District Judge of the District in which the premises are situated.

5.7 Transfers and Exchanges

5.7.1 Before making transfers of the government servants from one place to the other or of the tenants from one house to the other, full and frank discussion with the tenants by responsible officers can go a long way towards achieving better use of houses and smoothening of public relations. However, it is difficult to arrange transfers because of insufficiency of variety in the sizes and situation of the houses available at a time, and also because it may happen that no suitable house is available for the applicant, who, on the basis of need, should be next in turn. Also rent-paying capacity may as well stand in the way. To mitigate the onslaught of misery in such a situation, voluntary exchanges between the tenants themselves might be encouraged; and where the housing authority is satisfied that these exchanges benefit the tenants

and that no over-crowding or under-occupation results, he should permit such exchange transfers. In addition, the authority should invite applications for exchanges or transfers which relieve over-crowding in one accommodation and make fuller use of the other. Directorate of Estate, if feasible, allows exchanges and transfers within the same category of houses.

5.7.2 The management of the public housing for Government servants is faced sometimes with cases of hardship. They arise largely when transfers are made of Government servants to other places of duty. As 'hardship' is not the main criterion for allotment of the houses, it has been found in practice that on transfer a government servant faces a number of difficulties and his family is highly inconvenienced and his children's education also suffers. But in the absence of alternative accommodation available at all the places of transfers and re-transfers, it is difficult for the public authority, at present, to face the problem and solve the question of hardships with which the transferees are faced.

5.8 Collection of Rent

5.8.1 Collection of rent from the tenants in case of government accommodation is made at source when the salary of a particular month is remitted. In case of non-gazetted staff, the salary is paid in the administrative office after deducting the rent due from his salary on the basis of information supplied in respect of allotment made and occupation effected of the flat for the government residential accommodation occupied by him. In practice, the amount drawn from the Treasury is net of rent deduction. Every month a consolidated list of the rent deducted and so collected from different Government servants is sent by the Administrative Office to the Directorate of Estates. The rent collected is credited to a particular Budget Revenue Head and deposited in the Treasury.

5.8.2 The gazetted staff of the Government are entitled to draw salary directly from the Government Treasury on the basis of authority issued by the Office of the Accountant General Central Revenues. In this authority deductions about rent are made on the basis of the information supplied of allotment made and occupation effected of the flat and net of this deduction the salary is drawn by the Gazetted Officer. At the time of drawing the salary, deposit slips for rent are sent to the Treasury who forward them to the office of the Accountant General Central Revenues for record. The Office of the Accountant General Central Revenues sends to the Directorate of Estates a consolidated list of the rent so deposited by the Gazetted Officers.

5.8.3 Thus, the system of collection of rents is fool-proof and rent-arrears do not arise. In the event of unauthorized occupation, the rent arrears are liable to be collected with the process of law as if they are the arrears of land revenue of the Government which offers the position of first preferential creditor to the housing authority in the eyes of law.

6. TENANT EDUCATION

6.1 As the welfare of labour does not end with the facilities provided in the factory; so also, the physical provision of houses does not end but it

is only a beginning of a good home for which further steps are required to evolve a house into a social concept of a home. The concept has to be widened so as to effect beneficially people's health, their contacts and relations with the neighbours and other members of the society. Thus, home actually means something beyond the physical environs of the house (including up-keep and maintenance, collection of rent and other aspects of housing management). If such a healthy process does not come into operation, various social problems arise, the problems being in the form of distorted emotions and feelings affecting the life and perspective of the present and future citizens, resulting in failures, defeatism and frustrations. It can be said that a good house, with its neighbourhood and community facilities and community life, performs the same function as fertilisers and irrigation do in the field of agriculture.

6.2 In order to achieve the above objective the tenants not only have to be educated but the welfare officers have to be trained so that they can look into the problems of tenants with a modicum of social education and community sense. They should be injected with the idea of not displaying in an authoritative manner so as to enrage the feelings of the tenants. They should cultivate the habit of patience, persistence and personal contacts. In this connection the practice now being followed by Madras and Mysore Housing Boards in trying to cultivate the sense of responsibility among the tenants through the appointment of Welfare Officers, is commendable. It would be useful if certain latitude is given to the housing authorities to utilize about 2% of the dwelling units in a housing project for allotment to social workers who are well-fitted to inculcate the spirit of community sense amongst the tenants. The development of parks, play-grounds, schools, shops, post-offices, etc, within a locality goes a long way in working as catalysts for social harmony and community life.

6.3 Consumer reaction studies, formation of Tenants Associations, reorientation of tenants, Rehabilitation Courses and formation of Tenants' Cooperative Associations, lessons in home economics of the house-wives, etc, are also the part of the Tenant Education and they are essential part of it. The maintenance and development of good surroundings by encouraging competition among the tenants for developing well-trimmed flower and vegetable gardens, is a desirable process in Tenant Education. The community hall facilities, as provided in the Maharashtra and Andhra State Housing Projects should be encouraged because they impart education through various welfare activities and also are of utilitarian value for celebrating various social and family functions and for celebrating various social and family functions and for celebrating important festivals. Such units offer spirit of 'oneness' amongst the tenants of housing

colonies. Such a spirit is of 'immense help' to a housing authority in enhancing the life of the property and thereby indirectly benefitting the tenant himself, which can follow in terms of reduction in rent.

APPENDIX I

Expenditure on Dwelling Construction
1957-1959

Country	As percentage of construction expenditures	As percentage of gross fixed capital formation	As percentage of gross domestic product
(1)	(2)	(3)	(4)
<i>Latin America</i>			
Argentina (1955)	48.6	27.1	4.1
Chile	58.7	39.1	3.3
Colombia (1953) ^a	19.5	11.8	2.7
Ecuador	32.6	17.9	2.2
Honduras (1955-57)	38.8	26.2	3.9
Mexico (1955)	..	17.1	2.4
Venezuela ^b	20.6	12.4	3.2
British Guiana (1954-56)	29.9	17.7	3.5
Jamaica	..	13.4	3.0
Puerto Rico ^c	36.2	22.6	5.0
<i>Europe</i>			
Denmark	37.1	15.8	2.8
Greece (1956-58)	47.6	30.9	5.1
Italy	47.8	28.5	6.1
Netherlands	41.1	20.6	5.0
Norway	32.5	14.3	4.2
Portugal	28.7	19.9	3.2
United Kingdom	36.7	17.6	2.7
<i>North America</i>			
United States	40.7	27.0	4.5
<i>Asia</i>			
China (Taiwan)	23.5	11.6	1.8
Republic of Korea	21.6	13.8	1.8
<i>Africa</i>			
Malta	29.7	18.7	4.2
Mauritius (1956-58)	43.5	25.0	3.5

Sources : United Nation, *Yearbook of National Accounts Statistics* 1957 (Sales No. : 58 XVII. 3), 1959 (Sales No. 60. XVII. 3), and 1960 (Sales No. 61 XVII. 4), except Argentina.

El Desarrollo Económico de Argentina, Anexo Estadístico (E/CN. 12/429/Add. 4) Santiago, 1958.

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External Disequilibrium in the Economic Development of Latin America: The case of Mexico (E/CN. 12/428) La Paz 1957.

Panamá : *Direction de Estadística by Censo, Ingreso Nacional Alios, 1955-1959*, Estadística Panamena. Año XX Serie "C". Venezuela, Banco Central de Venezuela, Memoria 1959, Caracas 1960.

(a) Based on figures at 1950 prices.

(b) Based on figures at market prices of 1957.

(c) Fiscal years beginning 1 July.

APPENDIX II

Completed New Construction of Dwellings per 1,000 inhabitants in Various Countries

Country	Rate per 1,000 in 1951	Inhabitants in 1960
(1)	(2)	(3)
I. Countries with privately developed economies		
Belgium	4.1	5.7
Denmark	4.8	6.1
Germany (Federal Republic)	8.5	10.3
Finland	7.0	7.1
France	1.8	7.0
Italy	2.0	6.0
Netherlands	5.4	7.4
Norway	6.3	7.4

(1)	(2)	(3)
Sweden	5.8	9.1
Switzerland	6.3	9.3
United Kingdom	4.2	5.9
United States	8.4	7.1
II. Countries with centrally planned economies		
Bulgaria	5.8	6.3
Czechoslovakia	2.5	5.6
Eastern Germany	1.9	2.9
Hungary	1.9	4.2
Poland	2.6	4.8
Rumania	3.0	7.3
USSR	6.5	14.0
Yugoslavia	1.6	4.0

Source : *Housing & Building Statistics for Europe, 1960* United Nations Publications (Sales No. 61. II. E. 5).

APPENDIX III

Calculation of Rent without Land and Garden Layout Cost

Cost of Residences

1. Cost of land	'A'
2. Cost of preparation of site	'B'
3. Cost of building including out-houses	'C'
4. Cost of electric installation	'D'
5. Cost of water supply and sanitary installation	'E'
6. Cost of layout of Garden	'F'

F. R. 45-A

Cost

1. Total cost of a residence (C+D+E)	'G'
2. Interest at the prescribed rate on 'G'	'H'
3. Maintenance both annual and special on 'C', 'D', 'E'.	'I'
4. Taxes in the nature of House and property tax	'J'
5. Rent p.a. ('H'+ 'I'+ 'J')	'K'
or @ 6% p.a. on 'G', whichever is less	
Item 5	
6. Rent per month. $\frac{\quad}{12}$	Monthly rent

APPENDIX IV

1. Cost of land	'A'
2. Cost of preparation of site	'B'
3. Cost of building including out-houses	'C'
4. Cost of building (A+B+C)	'D'
5. Cost of elect. installation	'E'
6. Cost of water supply and sanitary installation	'F'
7. Cost of layout of garden	'G'

F. R. 45-B

(a) Without Departmental Charges.

Rent

1. Interest, maintenance both annual and special at the prescribed rate on 'D'	'H'
2. Interest, maintenance both annual and special and depreciation charges at prescribed rate on 'E'	'I'
3. Interest, maintenance both annual and special and depreciation charges at prescribed rate on 'F'	'J'
4. Interest at the prescribed rate on 'G'	'K'
5. Taxes in the nature of House Tax and property tax (annual)	'L'
6. Annual rent H+I+J+K	'M'
7. Monthly rent $\frac{M}{12}$	

(b) With departmental charges

$$\text{Monthly rent } \frac{M}{12} + 17\frac{1}{2}\% \text{ on } \frac{M}{12}$$

APPENDIX V

Various Sizes of Accommodation for Government Employees in Different Salary Ranges

Type	Plinth area of House (sq. ft.)	Salary range per month of Employees (Rs.)
(1)	(2)	(3)
I	365 (33·91)	60 p.m
II	400 (37·16)	61—150
III	600 (55·74)	151—300
IV	900 (83·61)	301—750
V	1500 (139·36)	751—1500
VI	2100 (195·11) + 240 (22·29) for servants + 225 (20·90) for garage.	1500 and above

NOTE.—Figures in brackets in col. 2 are in metric unites.

Techniques of Developing Housing Programmes **

By

Wayne Daugherty†

I have taken the liberty to rephrase the subject of my paper slightly. Instead of 'Methodology of Preparing Housing Programmes', I have phrased it "Techniques for Developing Housing Programme"—quite a comprehensive subject for the confines of this paper but I shall attempt to highlight the fundamental concepts of such development. "Techniques" implies a standard procedure based upon theoretical principles. If we assume that methodology or a technique has not been outlined so far, we would necessarily turn our efforts to devising and establishing all the fundamental conditions needed to create a housing programme; what techniques to employ, and how to develop them?

I am assuming that you are involved already in a housing programme or are engaged in socio-economic or financial activities related to housing.

The agenda of your seminar indicates that you are aware of and have discussed national goals;

the influences of a national policy for developing and establishing a housing programme;

the quantitative knowledge (statistics) necessary to understand what is being done and what is still to be done; and

the tools (administrative organization, legislation) available or to be obtained in order to forge, create, develop and execute a programme.

When starting on a technique, the necessary ingredients are sketchy or lacking. As you gain experience, the results are usually good. But each technique, after testing and use, needs improvement or redirection—conditions change, need changes, attitudes of administration, political leaders and the population change.

So, I find it difficult to discuss "as technique". There are many—not one. I would prefer to touch on the influences and considerations that affect scope and magnitude of a technique.

1. FACTORS FOR DEVELOPMENT OF HOUSING PROGRAMME

1.1 Just what is a technique? I would define it as a method of performance used to develop a housing programme. It uses technical and professional skills combined with the art of analysis and judgement. The development of a housing programme involves determination of the actions to be taken, by whom, when, where. It requires a full schedule of considerations for the implementation and accomplishment of the programme. A technique has research and data collection as a base for all considerations and judgements.

1.2 A housing programme is based on a national policy of providing safe and sanitary shelter for

all persons. The goal is to be reached as fast as the economy permits, and the goal is reached by the time the nation is self-sufficient, through industrial and commercial development.

1.3 It is necessary to know something about the problems in three areas. *First* is an understanding of shelter need as related to the housing market. Adequate socio-economic statistics are essential, covering household characteristics, employment, source and amount of income, characteristics of the housing inventory, etc. The *second* area concerns legislation. National or local laws may be restrictive, non-existent, or inadequate for the programme.

1.4 The third area deals with the capacity of the governmental organizations to execute the programme. It must be dynamic and well staffed. It must be responsive to needs and be able to cope with complex problems as well as questions related to such current subjects as the supply of labour, and availability of managerial skills to direct construction and handle management functions.

2. ADMINISTRATIVE ROLE

2.1 Officials, particularly those concerned with administration and with legislation, must understand the problems, conditions, results expected from techniques used, development procedures and the programme itself. Lawyers must be prepared to translate goals and programmes so that execution of the plan is effective. Sometimes the best does not work; this requires an understanding by legislators, lawyers and administrators who must have a desire and an incentive to change procedures and laws as frequently as necessary to accomplish the goal of the programme. The technique is expected to influence the development of the programme. The analysis of research in socio-economic subjects and the evaluation of statistics, even when incomplete, provide bases for judgements.

3. DEVELOPMENT OF TECHNIQUE

3.1 Development involves experimenting, testing, phasing and coordinating all aspects of the programme. Experimenting may be necessary on new subjects whether they are related to construction technology, financing, social welfare or management and should be first on the time schedule.

3.2 The phasing of operations must recognize availability of all ingredients. The rate of housing production is dependent upon the coordinated flow of material labour, finances, developed land, and managerial talent into the organizational structure trained and equipped to perform. When the

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programme is fully developed, implementation will be successful only when the development plan is consulted and coordination is closely observed.

3.3 Returning to the matter of policy, it may be assumed that the nation desires and will programme housing for four types of ownership: individual, group, absentee and public. A technique becomes several techniques when we divide a comprehensive programme into workable and logical units for development. Let us consider the differences between privately-owned non-subsidized housing and government-owned, subsidized rental housing.

3.4 Involvement by the Government is two-fold. In one direction it is concerned with channelling resources so that as much of the population as possible can secure housing without subsidy but must have government participation in securing finances and materials for those who are unable to do so by themselves. These are generally families of moderate income. Obviously, the other group, which the Government must consider, cannot afford to pay the cost of adequate shelter. This sector of the population, both families and individuals, requires both financial assistance and training in subjects leading to social responsibility.

3.5 Research into privately-owned housing markets must ferret out the influences of and reactions to home ownership, absentee ownership of rental housing, and group ownership as found in cooperatives. They comprise at least three markets. There are several complex influences.

(a) Foremost is the question of financing. How many can and will pay cash? How high or how low is the interest rate or taxation rate; together they may create incentives to buy or they may eliminate a market. Associated with this and very important is the legal and administrative machinery which controls the conditions of purchase and sale; ease of transfer changes, etc.

(b) If private owner-occupied housing can be bought and sold as any marketable commodity, it becomes an attractive investment. It is also essential when the economy requires a mobile population; mobility to move from job to job and from industrial center to industrial center.

(c) If the interest and taxation rates are a burden to the owner, his property is likely to deteriorate because maintenance and repairs are neglected. When this occurs to a whole neighbourhood, property value declines and slum conditions are encouraged. The technique must recognize this trend and be prepared to develop factors to combat this type of loss.

3.6 When considering group ownership, similar question must be examined. What is to be the aim and goal of group ownership? Will it be less expensive? Or is it a hope that with little or no equity the occupant becomes one of a group of owners. Is there consideration of society to immobilize its occupants thereby restricting advancement to greater employment opportunities elsewhere? These are some of the conditions which the technique must consider in the development of the housing programme for group ownership cooperatives.

3.7 In most societies, rental housing is necessary to accommodate the economic and social needs of a portion of the market. The technique must consider what can and will be paid for housing. What is the lowest economic rent that the private sector can reach? What locations are suitable for rental housing? What determines the locational preferences? You can expect differences from one area to another—eliminate, transportation, recreational facilities are only a few.

3.8 From another viewpoint, the techniques, and possibly the programme, will recognize that urban type housing differs from rural housing.

3.9 Another type of ownership, public generally is assumed to be for rental occupancy where subsidy is required in order to fill the gap between the rents that the occupants can afford and are willing to pay and the economic rent required if no subsidy existed. It is easy to prove that one form is cheaper and more desirable than the other. Here again the technique to be developed will be dependent upon national fiscal policies and assumptions as to the nature of the economy today compared to changes that may occur over a considerable span of time.

3.10 All techniques must be organized and tested. Theoretical and basic considerations are the backbone of all successful programmes. These theoretical ideal considerations are always compromised by the need to be as effective as possible. Political considerations, economic limitations and social goals are important influences to a well-conceived technique designed to develop a housing programme.

4. CASE STUDY OF U.S.A.

4.1 The problems of inadequate housing first became evident in our large cities. It took years to fully understand the detrimental effect on the population and on economic growth and social standards. The influence of housing conditions became apparent, as we learned more about sanitation and health. Different techniques were tried to develop a programme for improvement of the welfare of the population. Even so, living conditions in large cities continued to worsen. In the early 1900's the extent of overcrowding, insanitation, rat and vermin infestation in structures became serious. As that period, statistical measurements were limited and unrefined; it was not certain that insanitary housing and unhealthy environments influenced the health and welfare of the population.

4.2 During the first thirty years of this century enough evidence was accumulated to indicate that cities were deteriorating and that the economy was being adversely affected. During the period 1930-1937, a serious rise in unemployment occurred. A scheme was developed to provide money for those who worked on civic programmes. We still refer to it as a WPA (Works Progress Administration) programme. This scheme provided unusually large sums of money to collect information about population, health, housing and living conditions. This information gave political leaders an understanding of the need and the resources available for the Government's involvement in programmes to house all of the population.

4.3 This injected the urgent need to have available an adequate knowledge of conditions based upon reliable statistics as stressed earlier. One thing learned through many years of trial and error is that statistics are no better than the skill applied to defining the terms used, to the technique for collecting the data, and the skill applied by the analyst to interpret and present the real implications behind the raw data placed before him.

4.4 One of the first experiments in housing was to build new towns adjoining several large cities. These appeared successful, but were not the answer to the large national problem. The U.S. Government's first stage of involvement in housing was based on a programme to provide insurance on mortgages on modestly priced homes. The basic research indicated that most people were paying high interest rates on borrowed money. In many States, this rate was 8% to 10% and occasionally higher. The terms of mortgages were unsatisfactory to those who wanted to buy a home. Investors were attracted who lent money on terms best suited to their interests. Frequently, mortgages had to be renewed each year or at the most, every five years. The market for housing was hard to identify. The slightest adverse change in business conditions resulted in large numbers of mortgage foreclosures. At the same time properties were deteriorating and slums were being created. The technicians suggested legislation to entice small savers and some large financial investors to place their money in long term mortgage investments. This meant a programme of insuring the savings of small investors and at the same time allowing withdrawals without delay. Likewise the savings institutions had to be protected. This required insurance to cover losses due to defaults in mortgages. The mortgage insurance programme devised initially, proved to be successful immediately. The Government required that the mortgages be amortized over long periods of time—15-20 years—so as to reduce the cost of mortgage renewals and obtain the lowest possible monthly amortization payments. Because the Federal Government was insuring the mortgages, lenders were willing to accept an interest rate only slightly higher than the Federal Government itself paid for money.

4.5 Over the 30-year period, since this was started in 1934, families and individuals of modest income have been encouraged to put their money in savings institutions, which, in turn, channel these sources into the housing mortgage market. At the present time, almost half of all house building is initially paid for by the savings accumulated in the institutional savings and loan associations. Here again, let me emphasize that the incentive for placing money in these saving banks was the insurance of the savings furnished by the Federal Government against losses from foreclosure of banks and savings associations. The technique for developing this housing programme in the private sector cannot be described in any specific terms. Generally speaking, the interest of political leaders was important. They possessed a fairly adequate knowledge of conditions. Both legislative and administrative actions resulted from research and experience. This, could be classified as a technique.

4.6 By this time, the nation had become more conscious of the negative influence of slums in the

economy. It was aware that the slums were inhabited by people whose contributions to society were essential although somewhat marginal because of their living conditions. Again, the adequacy of the statistics in describing these conditions led to sufficient interest on the part of political leaders to create a programme of subsidized housing. This programme was very imaginative, as well as provocative.

4.7 The needs and the costs to rehouse slum dwellers are not uniform from place to place nor are they expected to be the same from time to time. The U.S. scheme to finance subsidized housing emerged from extensive research and studies. This background (part of the technique) permitted the government to absorb up to 90% of the cost of constructing adequate shelter for low income populations. The other 10% of the cost was, and still is, being paid by the local Government which owns the housing. To encourage efficient operation by local governments, the annual subsidy granted after the local body complied with minimum standards of organization, legislation and basic management principles. By this time the U.S. was so concerned with the national problem that a housing policy was established. The policy declares that—

"It is the policy of the United States to promote the general welfare of the Nation by employing its funds and credit to assist the several States and their political sub-divisions to alleviate present and recurring unemployment and to remedy the unsafe and insanitary housing conditions and the acute shortage of decent, safe, and sanitary dwellings for families of low income in urban and rural non-farm areas, that are injurious to the health, safety, and morals of the citizens of the Nation. In the development of low-rent housing it shall be the policy to make adequate provision for larger families and for families consisting of elderly persons."

Specifically the Act was passed by Congress "to provide financial assistance to the States and political subdivisions thereof for the elimination of unsafe and insanitary housing conditions, for the eradication of slums, for the provision of decent, safe and sanitary dwellings for families of low income, and the reduction of unemployment and the stimulation of business activity."

This was another step in the technique of establishing a comprehensive housing programme.

4.8 This brings us back to the subject of a housing programme. Let me move briefly from those national programmes to what we consider local programmes. In the privately owned housing programme, which encompasses the ensuring of mortgages, it was necessary to develop a technique to determine the local market for such housing. The techniques have become sophisticated. They can almost be repeated from market area to market area. They deal with such questions as how many families are able and willing to buy a home; how many of these families have a wage earner who has demonstrated his stability as a local citizen; that is, one who handles his family finances satisfactorily; whose employment is reasonably secure; etc.

4.9 Overall of this looms the most important question. It deals with the stability of the economy

in the local housing market area to maintain constant employment for the moderate income residents. These judgments are usually made by the staff of the national insuring organisations. Also the extent of mortgages that the community can support is determined at the national level.

4.10 Let us briefly look at the subsidized housing programme. Here, the technique is somewhat different. A statutory agency of the local Government is the actual owner of the housing units. It presents its own analysis of needs and the capacity of the local Government to administer and handle financial responsibilities associated with the subsidized programme at the time an application for housing is submitted to the federal agency. The local analysis is evaluated and very frequently independent techniques are used by the federal staff to gather information for the analyses of local conditions.

4.11 Over the years, the techniques for investigating and evaluating local problems have resulted in many changes in housing programmes sponsored by the National Government. In the private sector, the comprehensive programme is identified by its many components, each directed toward unsolved and unmet housing needs at a particular point and time. For example, after World War II, legislation was enacted to provide incentives to encourage veterans to settle in a locality and become home-owners.

Shortly thereafter, when there was a great shortage of rental housing, incentives in the way of lower construction standards and greater profits were given to private investors. Recently, with the continued national drive to make more people home owners, laws have been improved and taxation policies adjusted so that in the big cities large high-rise apartment buildings can be successfully maintained and operated, with ownership of each apartment held by the occupant. This home ownership is a kind of tenure titled "condominium."

On the public housing side of our comprehensive housing programme, the needs for subsidy over the years have changed drastically. As change occurs, the technique for developing or altering the programme changes. In the early years of the programme, particularly all subsidized housing was occupied by families who had one or more wage earners. At the present time, nearly half of all families residing in subsidized houses lack a wage earner or have one who is only partially employed because of disabilities. Subsidies and regulations have been created to meet these changed conditions.

5. REMARKS ABOUT INDIA

5.1 My knowledge of India is limited. The capacity of her economy to handle an adequate sized programme, comprehensively designed and developed, is, no doubt, measured by political considerations of the importance of sound and decent shelter when in competition with other basic needs of the society. The present schemes are aimed at selective groups which tend to segregate the several classes of workers or economic groups. In large urban areas where slum clearance is associated with a shortage of land, such restrictions require greater efforts toward developing a technique that will provide a successful solution. The techniques used to develop the segregated and uncoordinated places of a housing programme can be and should be re-evaluated to provide housing for all families.

6. Adequate and reliable statistics on housing and construction is a pre-requisite for providing better understanding of the welfare of the population and a more accurate basis for judging the use of resources for shelter improvements and for advances in the productivity of labour force. Then the techniques for developing a housing programme will be more effective in meeting the national goals.

Some Characteristics of Housing Legislation in The States **

By
Milton Kaplan†

1. INTRODUCTION

1.1 First the term "legislation" must be defined. Too frequently the word is deemed to be synonymous with the word "law". Newcomers to India, in particular, are prone to label the Central Government Housing subsidy schemes as "legislation", and are surprised to learn that these schemes are derived from executive orders. When I speak of Housing legislation here I will be referring solely to one species of law—law made by a legislative body and ordinarily expressed in the form of statutes or ordinances.

1.2 Another distinction is worthy of preliminary notice—the distinction between what I shall call "procedural" and "substantive" characteristics of housing legislation. By "procedural" I refer to the *how*; by "substantive", to the *what*, to the content of the law.

2. THE PROCEDURAL ASPECT

2.1 *How* government legislates is of much less interest to this group than *what* it legislates. But please indulge me a few remarks about some contrasts between American and Indian methodology. I want to make the point that variations in the institutions and procedures involved in shaping legislative policy may produce differences in the content of that policy.

2.2 One institutional difference affects the sources of information available to those who formulate housing policy. In India the Ministers in charge of housing in the various States hold a conference each year and following their deliberations usually make recommendations to the Centre for changes in housing subsidy schemes. The Housing Ministry at the Centre then formally considers each recommendation and may accept it, with or without modification. For instance, the Third Housing Minister's Conference held in October 1958 recommended that the Centre's subsidy for slum clearance schemes be increased from 25% to 37½%. In July 1959 the Central Government notified the States that this recommendation had been accepted, but only with respect to schemes in certain cities.

2.3 The outside observer gets the impression that the sources of information upon which this kind of policy determination is grounded are rather limited. Shifts in housing policy directions seem to be largely a family affair.

2.4 In America a detail, such as the proportion of housing costs subsidised from public funds

would ordinarily be incorporated in a statute passed by two houses of a legislature and approved by a chief executive, such as the Governor of a State. For many reasons—a significant one being the impact of the two-party system—a great variety of opinions and pressures shape the resulting housing policy. Take the hypothetical case of a State housing bill incorporating an increase in government subsidies for a particular type of public housing. The bill might have been drafted by a special committee appointed by the legislature or by the Governor, or by a standing committee of the legislature. If so the legislators would probably have before them a comprehensive report of that committee arguing for the increase, and perhaps a dissenting minority report. The reports would probably be founded on research and recommendations of a professional staff attached to the committee; and the recommendations might represent a compromise between some more drastic reforms espoused by the staff experts and more conservative attitudes of committee members.

2.5 The executive branch—being independent of the legislature under the American system—might support the measure, oppose it, or submit a competing bill. The executive branch would have its own technicians gather and supply information in to a housing department of the State. So here is the second source of information. The committee that authors the measure would ordinarily hold hearing to solicit fresh insights and new concepts from interested citizens, or to invite citizen reaction to committee proposals.

2.6 The public would have still other means of expression. Lobbyists would be working openly or not so openly in the committee chambers and other habitates of the law makers. And later, if the legislature enacts the bill, all the proponents or opponents lined up on the issue, including both officials and members of the public, might have another opportunity to be heard. For the Governor might open up the record again and solicit the views of all concerned before approving or vetoing the bill. Under some State Constitutions the public may have the last word, for the legislative decision may have to be approved by a majority vote of the people. This sometimes happens in New York State, where the granting of housing subsidies may require an increase of State indebtedness for housing purposes, and such increases are subject to the will of the voters.

2.7 It at once becomes apparent that in America the legislature's participation can make the process of decision-making cumbersome and slow-moving,

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working as it must towards a reconciliation of conflicting forces that stand to gain or lose by each proposal. It would also seem logical that a parliamentary system of government that gives a cabinet or ministry as much leeway as Delhi enjoys in housing matters would function much more efficiently and expeditiously, and provide greater scope for innovation and adaptability to changing housing needs and conditions.

2.8 Perhaps the wider the participation in the formulation of housing policy, the more fertile the ground for innovation, and the less likelihood of stultification, hardening of official attitudes, and slavish obeisance to obsolete or inapt forms and precedents. A system like the American legislative process that draws critics from diverse segments of society is bound to stimulate constructive criticism. And constructive criticism begets new ideas that sooner or later infiltrate the statutes that lay down housing policy.

2.9 Though not commending the American governmental system to India, it is suggested that India's housing programmes stand to be enriched and improved if government can find ways to tap some new sources of information in formulating housing policy—perhaps through formal and active participation of such groups as the National Buildings Organisation, real estate interests, tenants associations, private builders, municipal officials, labour organisations and citizens' associations of other varieties.

3. CONTENT-SOME TYPES OF HOUSING LEGISLATION

What is *housing* legislation?

A few primary motives for exercise of the legislative prerogative in the housing field may be indicated as:

(a) First, legislation may be desired or necessary to authorise the expenditure of public funds to overcome shortfalls in private housing activities.

(b) Or, the motivation may be basically regulatory in nature. May we not categorise laws or ordinances prescribing standards for housing construction and maintenance as "housing legislation"? And in this group, why not include laws designed to regulate the operations of private entrepreneurs for the protection of house renters or buyers, like the recently enacted Maharashtra Ownership Flats (Regulation of the Promotion of Construction, Sale, Management and Transfer) Act, 1963?

(c) A third grouping of housing laws would include those concerned principally with the establishment and organisation of governmental agencies to construct and operate housing projects, like the State housing boards in India or the municipal housing authorities in the U.S.A.

4. FLEXIBILITY

In 1963, the National Association of Housing and Redevelopment Officials in the U.S.A. (called 'NAHRO') outlined six goals for a full-scale programme of low income housing. One of the

goals, enunciated in the one word "flexibility", quite perfectly describes an outstanding characteristic of some outstanding legislation in America. Borrowing from the dictionary, NAHRO defined "flexibility" as "the capacity to be adapted, modified or moulded—or to be responsive or readily adjusted to changing conditions.* According to NAHRO flexibility requires a set of "housing assistance tools that can be used alternatively or selectively to meet situations as they exist". And the picture of what exists can never be entirely clear for any sizeable community at any point in time, by reason of variations in economic circumstances, social attitudes and housing conditions from area to area and era to era.

5. STATUTES PROVIDING GOVERNMENT FINANCIAL AID

Built in devices for adjustment to such variations are particularly useful in the first class of housing legislation in my grouping, legislation primarily concerned with financing. That seems to be the trend in American housing legislation. It may be illustrated by two enactments in New York State.

5.1 Intermingling of Dwellings for Low Income and Middle Income Families

5.1.1 Public housing in America, allocated mainly to low income tenants, has reached a point of reappraisal. The evaluators have questioned the economies of initial development costs, and the economies of financing public housing by means of long term debt entailing burdensome annual subsidies to meet interest and amortisation charges. They have wondered, too, whether operating costs have been "inflated by a defect built into the public housing system, which concentrates large numbers of low income families and thereby also concentrates the many social problems that seem to accompany, and be magnified by low income?"†

5.1.2 The traditional American public housing programme for low income families has also been suspect on social counts. Massive blocks of low income dwellings have fostered racial segregation, partly as a result of the economic stratification made inevitable by rigid admission policies. Many tenants are sensitive to the social stigma of identification with poor man's row. And for those tenants whose improved circumstances raise them to middle income levels, stable neighbourhood life is inhibited by the threat or actuality of dislocation to make way for those with a greater claim to their subsidised flats.

5.1.3 New York City proposed to do something about it with a new housing concept called "skewed rental". The idea is to scatter low rent flats throughout middle income developments instead of concentrating them in public housing projects. Twenty percent of the flats in each middle income project in the experiment would be made available to low income families. The rents or carrying charges of the entire project would be skewed—or distorted—in such a way as to make some tenants pay more to enable others to pay less.

5.1.4 The New York State housing officials would not support the proposal. They did not feel that one family of modest income should be made to subsidise a family of lesser income.

*National Association of Housing and Redevelopment Officials, *Journal of Housing*, Vol. 20, No. 6, p. 309.

†Statement by James W. Gaynor, Commissioner of Housing and Community Renewal of New York State, before the Temporary State Commission on Low Income Housing, October 29, 1963.

State officials came up with their own innovation for achieving substantially the same objectives. They submitted and got the Legislature to pass a bill embodying the following programme: * As in the City's programme, the middle income housing structure provided the framework—in this case middle income projects built and operated by limited-profit housing companies. In New York a limited-profit housing company is a private corporate enterprise financed largely by State or municipal mortgage loans of up to 90% of total project costs, for periods of up to 50 years.** The company may not pay more than a 6% dividend on its outstanding stock nor more than 6% interest on income debentures. Maximum rentals and rules for tenant selection are subject to statutory requirements or government approval, and are designed to accommodate middle income families. The statute allows up to a 50% exemption from certain municipal or local real property taxes for a period not exceeding 30 years.

5.1.5 In the new programme the New York State Housing Finance Agency is authorised to lease up to 20% of the dwellings in a project built by a limited-profit housing company. The Finance Agency will sublet the dwellings to low income families at rentals usually charged for public housing. The Finance Agency will make up the difference between those rent levels and the higher rentals charged to other occupants of the project. The deficiency will be reduced to some extent by special tax exemptions applied with respect to the designated low rent units in the project. Each year the State Legislature will make a capital grant to the Finance Agency equal to the 20-year operating deficiency requirements for the number of low rent flats to be included in limited-profit company projects of that year, less the 20-year investment potential of the capital grant itself. It has been estimated that an appropriation of \$6 million (3 crores of rupees), together with its investment yield, would produce more than the \$8.1 million (about 4 crores of rupees) required to cover income deficiencies for 1,000 flats for 20 years, estimated at \$405 (Rs. 2,025) per flat per year.† In contrast, public housing subsidies for traditional low income projects would be \$914 (Rs. 4,570) per flat per year, or a total \$18½ million (9 crores of rupees) for 20 years. Social benefits are expected to accrue from the elimination of the stigma of living in public housing blocks; from the promotion of racial and economic integration of tenants; and from the stability gained by letting low income families remain in their flats after they have achieved middle income status.

5.1.6 Other States in America are conducting similar experiments, some of them under a programme of Federal aid for demonstration projects designed to find new or improved means of housing low income families. The St. Louis County Redevelopment Authority selected 20 test families

to be mixed in with 30 non-subsidized families in a middle income project financed through Federal mortgage insurance. The Authority will give each families. Rent assistance to about 100 elderly jointly to the family and the landlord. The tenant will endorse the check, add it to his own monthly payment, and give it to the landlord. The amount of subsidy will vary according to the income of the families. Rent assistance to about 100 elderly low income families in Chicago is being provided through differential payments made directly by the Chicago Housing Authority to private apartment owners. Other variations on this theme are being played in New Haven, Connecticut, and Washington, D.C.

5.2 Condominium Ownership

5.2.1 In its 1964 Session the New York State Legislature passed a "Condominium Act", clearing the way for government financial aid to ownership of individual units in multifamily structures.‡ Condominium is a relatively new concept in the United States, though for some time it has been popular in certain European countries and Latin American countries, notably Puerto Rico. Its basic objective is to provide housing in a multifamily structure on an ownership rather than on a rental basis.

5.2.2 In this respect its objective is similar to that of the housing co-operative. But it differs from the ordinary cooperative arrangement. In a cooperative the participant has an interest in the overall project. In a condominium the individual holds clear title to a specific unit—a cubicle of space—as well as an undivided interest in the common areas and facilities serving the project, such as yards, hallways and lifts. He is responsible only for his own mortgage payments and his own separate tax payments. Except for his limited liability for payment of a share of the common expenses, he shares no mutual risks with the other owners.

5.2.3 Under the New York law the cubicle I referred to is labelled a "unit", and defined as "... a part of the property intended for any type of use or uses, and with an exit to a public street or highway or to a common element or elements leading to a public street or highway, and may include such appurtenances as garage and other parking space, storage room, balcony, terrace and patio."

A "unit owner" means "the person or persons owning a unit in fee simple absolute." As noted in the definition of "unit", the facilities and appurtenances in which the unit owner has an undivided interest are called "common elements". The operation of the property is governed by by-laws agreed to by the unit owners. The by-laws are annexed to the legal instrument—a "declaration"—by which

*This bill was bitterly contested. It was defeated earlier this year, but finally pushed through the Legislature at the closing of the Session, allegedly as a result of heavy pressure exerted by Governor Rockefeller. The machinery of democracy in New York State sometimes operates in wondrous ways. A similar measure had been enacted in 1962, but written in such a way as to require a constitutional amendment hence the approval of the voters. The voters turned it down by almost two to one with the rural and small town voters supplying the bulk of the negative votes, as expected.

**New York Public Housing Law, Article 12.

†Based on an average size flat of 4½ rooms, an average rental of \$18 (Rs. 90) per room per month for the low income units, \$30 (Rs. 150) per room per month for the middle income units, a saving of \$4.50 (Rs. 22.50) per room per month from the special tax exemption, and a net deficit of \$7.50 (Rs. 37.50) per room per month.

‡New York Real Property Law, Article 9-B, added by Chapter 82 of Laws of 1964.

the condominium arrangement is officially identified and registered. The by-laws must provide for the election of a board of managers by the unit owners, and may contain various restrictions on and requirements respecting the use and maintenance of the units, the use of the common elements, and the sale, leasing or other alienation of units. Each unit and its common interest are deemed to be a separate parcel for the purposes of the assessment and collection of municipal and other local taxes. State bodies, municipalities and specified types of lending institutions like banks are expressly authorised to invest in bonds or notes secured by mortgages on units.

5.2.4 The Federal Housing Act of 1961 (PL 87-70, 87th Congress) authorised the Federal Housing Administration to insure mortgages on the fee interest or long-term leasehold interest in a one-family unit in a multi-family structure. Though not explicitly, the Act was in fact aimed at condominium ownership rather than other forms of cooperative ownership. The mortgage limits and other terms have been defined so as to make condominium housing available to low and middle income groups. Down payments are relatively small, and loans proportionately large. The loan may be as high as 97% if the appraised value of the unit owner's property does not exceed \$13,500.

5.2.5 These Federal and State laws—particularly the Federal law—recognizing condominiums represent an adjustment to a change in forms of home ownership, just as the New York law permitting a mix of low and middle income dwellings in aided projects adjusts to a need for social and economic changes. In each case the housing legislation involved has been made more flexible, that is, more adaptable to existing conditions. Do these reforms demonstrate the existence of some major flaws in legislation for financing America's public housing? Was such legislation too rigid in the first place? Too tightly compartmentalised? Are there lessons to be learned here for India? While pondering over these questions, it might be a useful exercise to bring into focus a kind of compartmentalisation or classification of aided housing schemes in India with which the United States has had little experience—classification based upon a breakdown of occupations of the housing customers, like industrial workers and government servants.

6. REGULATORY LAWS

6.1 Flexibility is built into some of the newer housing codes or building ordinances in the United States through the use of performance standards. Here the word "flexible" has a different connotation. The legislation itself does not broaden out to better accommodate diverse conditions. Instead it gives greater scope to administrative officials to do their own adapting, tying them only to broad principles or standards prescribed by the enabling law.

6.2 Most of the local building ordinances in the United States are what is known as "specification-type" codes. They provide for the use of a specific material of a specific size and quality in connection with each aspect of construction. This

type of code quickly becomes obsolete. It fails to take into account new and constantly improving methods and materials for construction.

6.3 A performance-type code does not specify any material by name, size or quality. It merely prescribes the measure of stability, rigidity, fire-resistive qualities and other performance factors required to meet the minimum standards of safety, health and welfare of the users of buildings.

6.4 Again I turn to New York State to illustrate a technique bringing flexibility to housing legislation. In 1949 the New York Legislature took cognizance of the fact that many local building codes were obsolete and unnecessarily complex; and that they induced high costs of construction without providing correlative benefits or safety to owners, builders, tenants and users of buildings. It passed a law for the purpose of

".... preparation of a state code of building construction to provide, so far as may be practicable, basic and uniform performance standards. Thus, while establishing reasonable safeguards for the security, welfare and safety of the occupants and users of buildings, the use of modern methods, devices, materials and techniques will be encouraged. This should be effective in lowering construction costs."*

The law created a State Building Code Commission—later converted to a Council and placed in the State's Housing Division—to adopt rules and regulations to be collectively known as "The State Building Construction Code". In accordance with the stated purposes of the law, the Council was enjoined to "provide reasonably uniform standards and requirements for construction and construction materials, consonant with accepted standards of engineering and fire-prevention practices", and to "formulate such standards and requirements, so far as may be practicable, in terms of performance objectives, so as to make adequate performance for the use intended the test of acceptability."

6.5 Each municipality is given the option of accepting the State Code by simply having its legislative body pass a resolution to that effect. Acting on the recommendation of a local legislative body the State Council may permit a modification providing higher and more restricted building standards, if justified by special local conditions. By adopting the State Code the municipality does not thereby destroy its local building regulations. Both may be kept on the books, but each builder may elect to comply with either the State Code or the old local one. If he elects the State Code he must accept it in its entirety; he may not choose the plumbing standards of one, and the standards for electrical installations prescribed by the other. This created a dilemma for me some years ago when I was serving as Legal Counsel to a small city in New York State. The construction people were generally in favour of having the city adopt the State Code and dropping the obsolete local building ordinance, but the plumbers insisted on following an ancient method of joining pipes allowed by the city ordinance but not by the State standards (I think it was called "wiping joints").

*New York Executive W. Article 18, sec. 370.

whatever that means). As I recall it, we solved the problem by adopting the State Code twice, once by accepting it *in toto* in the manner prescribed by the State law, then by amending the local ordinance so as to incorporate all of the provisions of the State Code except those governing pipe joints.

6.6 There is an illustration of another dimension of flexibility—adaptability of state-wide standards to special local situations. The State Code is administered and enforced entirely by local building officials. However, a builder who elects to proceed under the State Code and is aggrieved by an order issued under that Code may appeal to a Board of Review made up of three members of the State Council.

6.7 From my sketchy reference to performance standards, one might get the impression that only those municipalities able to recruit and pay for highly trained technicians could make the State Code operable, because the performance-standard concept necessarily implies a delegation of broad discretionary powers to building officials. This problem has been minimised to some extent by the issuance of a Manual by the State Council. The Manual is a comprehensive, detailed and illustrated guide for building officials and others, to assist them in interpreting the State Code. In many instances the Manual suggests specific standards as meeting the performance test laid down by the Code, but these are not mandatory requirements and they do not exclude other methods of complying with the Code.

6.8 Coming back again to the Indian scene, it strikes to me that many municipalities here might not be able to muster or afford trained personnel to administer a performance-standard type of building regulation. Certainly this indicates that a stepped-up programme of training personnel would be a precondition for resort to this method of regulating building construction. But then there is always a shortage of adequately trained technicians for these jobs in most parts of the world—surely in New York State, let alone in India. So training programmes are to be recommended in any case.

6.9 Indian municipal building laws and regulations give considerable freedom to local officials—in many cases standing committees made up principally of elected councillors rather than professional people—to allow variances in the application of prescribed rules or by-laws.

It may be appropriate to conclude that some building by-laws in India require a through overhauling in order to bring them up to date with advances in construction techniques and materials, and thereby reduce building costs. Not pressing for the New York analogy as a sure-fire remedy, the adoption or adaptation of some of the basic ideas—such as establishing a permanent official body of experts at a high level of State Government to work continually towards modernising building by-laws; devising a method for translating their products into municipal by-laws; and aiming for uniformity of standards with adjustments to suit local situations, need considerable thought.

7. LAWS ESTABLISHING GOVERNMENT HOUSING AGENCIES

7.1 Legislation aimed principally at institutional orientation to government participation in housing is exemplified by the laws creating municipal housing authorities in America. Their genesis and form are largely attributable to Federal law and policy. From the time of the United States Housing Act of 1937 the Federal Government encouraged the creation of local housing authorities, as an alternative to administration of Federally aided housing programmes through Federal or State agencies or the local governments themselves. In part this policy was based on unsatisfactory experience with direct government administration of housing programmes under the Public Works Administration in the 1930's. The housing authorities were stationed at the local level because the construction and operation of public housing was looked upon primarily as a function of local government in America. Public housing requires a high degree of cooperation with local government, its operations being closely allied to so many regular municipal functions.

7.2 Another factor responsible for the employment of the authority device was the precarious financial position of many American cities during the depression years. It was expected that housing authority bonds would be more attractive to the bond market than municipal securities. In addition the Federal Government apparently preferred to keep its housing funds separate from municipal funds, influenced perhaps by a desire to insulate housing programmes from local political pressures and interference.

7.3 Finally the construction and operation of housing projects usually require a degree of administrative flexibility not easily attainable in the regular government establishment. A similar motivation is probably behind the enacting of the laws in Indian States authorising the creation of State housing boards or improvement trusts. Unlike their Indian counterparts, American housing authorities are usually quite dependent upon the local governments in whose boundaries they operate, in a measure attributable to the fact that the municipalities ordinarily guarantee the authorities' bonds, and correlatively require municipal approval for major housing decisions. The principal activity of the housing authority is the construction and management of low income housing projects under the Federal aid programme. The Federal Public Housing Administration makes loans to the authorities and in addition makes annual subsidy contributions. The annual contributions are limited to a percentage of a project's development costs and usually cover the debt service on bonds issued by the authority to finance the project. The contract of the Federal Government to make such annual contributions is tantamount to a Federal guarantee of the housing authority's bonds, a factor enhancing the marketability of the bonds and reducing its debt service and financial costs. The municipality must make payments or grant tax exemptions to a housing authority equal to at least 20% of the Federal subsidy before the authority can qualify for Federal aid. Some States, like New York, have similar programmes for financing low income dwelling construction by local housing authorities.

7.4 A new trend in structuring or restructuring governmental agencies to build or encourage the

building of housing began in 1949 when the United States Congress recognized slum clearance as an adjunct to housing and launched urban renewal. This was done in the Housing Act of 1949. Although the justification for the law was the need to save urban centers from progressive blight and eventual decay, the focus of Congress was essentially on the provision of new housing. There is no time here to elaborate on the operation of urban renewal programmes in America. Sticking to my bailiwick—some characteristics of the legislative product—I merely wish to note that the blending of urban renewal and housing functions in Federal assistance programmes is spawning State and local laws to reshape the institutions dealing with these matters. Returning to my favourite State again, New York, we find that

the Division of Housing in the Executive Department is now the Division of Housing and Community Renewal. If you will allow me one final comparison—this simply demonstrates that in America we are now coming around to a point India reached over 50 years ago when it established the first of its city improvement trusts to deal with urban blight and the housing problem.

7.5 This is not an invitation to the Indian States to remain complacent about their housing laws. The corollary proposition tells us that city improvement trust laws have reached their old age. Some of the States have new models, like State housing boards, but generally the pace of legislative reform seems to me to be lagging behind the ideas.

Subsidized Industrial Housing Scheme**

By

Dev Raj†

1. One of the basic, irreducible and minimum requirements of bare human existence is the provision of suitable housing for all sections of Society. Housing for the Industrial workers in proper surroundings is not only necessary for the workers health, for social health, but also for industrial health and efficiency. No industry can flourish on its workers leading a sub-human existence in dingy dwellings surrounded by filth and squalor. The Whitley Commission on Indian Labour wrote in 1930—

“Neglect of sanitation is often evidenced by heaps of rotting garbage and pools of sewage, whilst the absence of latrines enhances the general pollution of air and soil. Houses, many without plinths, windows and adequate ventilation, usually consist of a single small room, the only opening being a doorway often too low to enter without stooping. In order to secure some privacy, old keroséne tins and gunny bags are used to form screens which further restrict the entrance of light and air. In dwellings, such as these, human beings are born, sleep and eat, live and die.”

It would be no exaggeration to say that these conditions continue to exist even today. In fact, the last World War and the phenomenal growth of urban population during the last two decades has resulted in extreme conditions of over-crowding of even the existing unsatisfactory accommodation. Water Supply, drainage and lighting facilities already inadequate in these growing slums have been further strained with consequent effect on the health and well-being of the residents. Our housing programme has not so far been able to keep pace with our growing needs.

2. EVOLUTION OF A NATIONAL HOUSING POLICY

2.1 The reasons for this dismal picture of housing conditions are not far to seek. In the pre-Independence days neither the Central Government nor the State Governments had ever formulated a housing policy. In spite of a number of Committees and Commissions having drawn pointed attention to these deplorable housing conditions, the provision of accommodation in the growing towns was left almost entirely to private enterprise. It is a recognized fact all over the world that the payment of economic rent for even the minimum standard of accommodation is altogether beyond the paying capacity of the working class and the lower middle class. The private house-builders, therefore, could not provide the workers any semblance of a proper house. All he could do was to build hovels at the rent that the worker was able to pay, thus intensifying slum conditions around Industrial centres.

2.2 The urgency of the problem was fully recognized and the Government of India was becoming aware of the need of Industrial housing being promoted by some assistance from the Government of India. In February 1946, the Government of India offered a subsidy of 12½% subject to a maximum of Rs. 200/- per house, provided the Provincial Governments also contributed a like amount. The response to the scheme was negligible. In April 1948, the Government of India announced as part of their Industrial policy to construct 1 million workers' houses in 10 years and to constitute a Housing Board for the purpose, the cost being shared suitably between Government, employers and labour. The entire position was reviewed in April 1949 when it was decided that the capital required for Industrial housing should be provided as loan to the extent of 2/3rds by the Central Government and 1/3rd by the Provincial Government or an employer sponsored by it. The capital provided by the Central Government was to be interest-free.

The recurring charges for this scheme of Industrial Housing were estimated at 7½% which included 3% on account of interest, 2% sinking fund and 2½% maintenance. Considering that the Central Government's share of capital was interest-free, these charges were reduced to 5½% consisting of 3% interest on 1/3rd of the capital (i.e. 1% of the whole), 2% for sinking fund, 2½% of the total capital cost for repairs and maintenance. This 5½% was proposed to be met to the extent of 3% by the employer and 2½% by the employees in the shape of rent. Any short-fall on the realization of rent was to be met by the State Government. Some of the State Governments did take advantage of the scheme, but no progress could be achieved as there were no statutory provisions for the realization of the employers' share of 3% of the capital cost. The Housing Policy and programmes of the Government of India were still in a nebulous stage on the eve of the First Five Year Plan Period which provided for a Central Government contribution of 13.5 crores and a programme of 25,000 housing units every year.

2.3 The visit of the Prime Minister to the slums of Kanpur in February 1952, set in motion a chain of events leading to the announcement of the first systematic subsidized Industrial Housing Scheme in September 1952. This is a land-mark in India's social history, in as much as, that the scheme laid the foundation of a National Housing Policy. For the first time, again, the Government of India's policy about housing was not to be confined to the narrow circles of the Labour Ministry but an independent Housing Ministry was entrusted with the task of formulating and progressively

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evolving a housing policy and programme, not only for Industrial Labour, but for all the low-income and middle-income group citizens of India.

3. SUBSIDISED INDUSTRIAL HOUSING SCHEME PATTERN OF ASSISTANCE

3.1 The Scheme provided for the construction of houses for Industrial workers to be allotted to "workers" falling within the meaning of Section 2(1) of the Factories Act, 1948, subject to maximum income limit of Rs. 250/- per month, which was later raised to Rs. 350/- per month, particularly, when the scheme was revised to include two-room houses. In June 1955, the scheme was extended to cover persons employed in mines other than coal and mica mines within the meaning of Section 2(h) of the Mines Act, 1952.

3.2 Financial assistance under the scheme was made available to the State Government, statutory Housing Boards or Municipal Bodies; Cooperative Societies of eligible workers and the Employers, in the form of part loan and part subsidy. The State Governments were to be given a subsidy of 50% of the actual cost of construction including the cost of land for Housing Schemes undertaken by the State Governments or Statutory Boards, and the remaining 50% was given as loan repayable in 25 years at the usual rate of interest prescribed by the Government of India from time to time. The terms and conditions of these loans to the State Governments have practically remained the same since the inception of the Scheme with the difference that the period of re-payment has been extended to 30 annual equated instalments. The Government of India sanctioned Rs. 56.19 crores for the construction of 1,64,058 houses up to the end of December 31, 1963, out of which 1,37,255 had actually been constructed; 110,841 by the State Governments and statutory Boards (22,530 by employers and 3,884 by Cooperatives). The response from the employers and Cooperatives have been relatively poor.

3.3 The Government of India had originally proposed in 1952 an outright subsidy to the extent of 25% to the Employers and Cooperative Societies of Industrial workers together with a loan to the extent of 37½% at low rate of interest, repayable in 15 years. The balance of 37½% of capital cost was to be met by the Cooperative Societies or the Employers as the case may be. The loan assistance to Cooperative Societies of eligible workers was raised to 50% in 1953, and again to 65% in 1958-59, thus making a total of 90% of the cost of the house, available to Industrial Workers' Cooperative as subsidy or loan. The period of repayment was also extended to 25 years. The workers were also allowed the facility of obtaining the balance of 10% which is the worker's own share of cost of the house, as a non-refundable loan from his Provident Fund account, so that the entire cost of the house has been made available to the Industrial Cooperative Society on easy terms. As a result, some of the Cooperative Societies are now coming forward to take advantage of these facilities.

3.4 The Employers were also given in 1958-59 an increased loan assistance from 37½% to 50% of the cost, leaving them to find only 25% of the capital cost for construction of housing colonies of their workers. The response from the Employers,

however, continues to be halting and it has not been found feasible, so far, to enforce compulsion on Employers to provide Housing accommodation for a reasonable proportion of their employees.

3.5 The payment of loan and subsidy to Cooperative Societies and Employers is made through the State Governments in suitable instalments and the State Government has to enter into an agreement with the parties including the execution of a mortgage deed. The loan to Cooperative Societies is paid in three equal instalments—the first being paid immediately on sanction of the Scheme and second when the construction reaches the plinth level and the third when it reaches the roof level. In the case of Employers, 50% of the loan is paid when construction reaches the plinth level and the balance 50% when it reaches the roof level. As regards subsidies the Cooperative Societies get 50% of the subsidy when the construction reaches the roof level, while the Employers get 50% of subsidy when the house is completed to the satisfaction of the State Government. The remaining 50% of the subsidy is payable on receipt of complete audited accounts and their acceptance by the State Government. It is thus clear that both the Cooperative Societies and the Employers have to find some money to complete the structure before the full subsidy is paid. Nevertheless, this is hardly the reason for the slow response to the scheme from these quarters.

4. TYPES AND STANDARDS OF ACCOMMODATION

4.1 In the initial stages the Scheme accounted on September 1952 provided for the following two types of accommodation—

- (1) In cities of moderate size where land values are not exorbitant, single-storeyed tenements containing one living room, a kitchen, a verandah or lobby and a bathing space with a water tap. A water flushed latrine to be shared between two tenements or a service latrine for each tenement will also be provided.
- (2) In larger cities where land values are high, multi-storeyed buildings, where each tenement will comprise of a living room and a kitchen. Community latrines and bath rooms will be provided for a group of flats.

4.2 The standard adopted was admittedly low and ran counter to the recommendations of the various Commissions and Committees against a single room tenement. The Health Survey & Development (Bhore) Committee of 1946 has made the following observations—

"We are strongly of the opinion that the use of a single room tenement by a family should be condemned. It is not necessary to enter into any elaborate arguments in support of this opinion, as a single room house is obviously unhealthy and renders privacy and the decency of family life almost impossible. In our view, no house or a portion of a house intended for occupation by a family should consist of less than two living rooms with a separate kitchen, a bath room and latrines and in the warmer parts of the country, a verandah."

Nevertheless, the Government of India had no option but to adopt the single room tenement type

of accommodation not only because of the limitation of the financial resources, but also the low rent-paying capacity of the average worker so that any higher demand would place the house beyond the reach of the individual worker inspite of the heavy subsidy mentioned above.

4.3 Even so it has been the constant endeavour of all concerned to improve the housing accommodation with all the financial limitations to the maximum. For instance, at Kanpur, a flush latrine, wider verandah space and an enclosed courtyard or open terrace on the first floor were made available within the prescribed ceiling, adding considerably to the convenience and privacy of the house. The Government of India in turn in Aug. 1953, revised the scheme to provide for the construction of some good proportion of two-room houses, side by side with the single room tenements, as the two-room houses would certainly be within the means of the better paid workers.

4.4 To meet the criticism against the single room tenements, the Government of India announced further changes to provide for the small two-roomed house, according to which the verandah was converted into a multi-purpose room. Each house was also to have a properly covered bath room and flush latrine. In the design actually adopted in the construction of small two-roomed houses in Uttar Pradesh, cooking place has also been made available within the ceiling cost, so that the only difference between the small two-roomed house and the regular two-roomed house is the provision of a verandah in the latter. The standards of accommodation for the two types of houses are given in Table 1.

Table 1—Accommodation Standard for Small and Regular Two-roomed House

Accommodation	Single & Double storeyed (sq. ft.)	Multi-Storeyed (sq. ft.)
(1)	(2)	(3)
1. Small two-room house		
(i) Living room	204 (18.95)	184 (17.1)
(ii) Multi-purpose room including kitchen.		
(iii) Bath room	16 (1.49)	16 (1.49)
(iv) Latrine	12 (1.11)	12 (1.11)
TOTAL	232 (21.55)	212 (19.72)

(1)	(2)	(3)
2. Regular two-roomed house		
(i) Room No. 1	216 (20.07)	200 (18.58)
(ii) Room No. 2		
(iii) Kitchen, verandah and circulation space.	100 (9.29)	98 (9.10)
(iv) Storage	12 (1.11)	12 (1.11)
(v) Bath room	16 (1.49)	16 (1.49)
(vi) Latrine	12 (1.11)	12 (1.11)
TOTAL	356 (33.07)	338 (31.39)

NOTE : Figures within brackets are metric units.

4.5 The above does not include any stair-case or passage. Further essential and desirable details have been laid down to ensure adequate window area, ventilators, electric and sanitary fittings, lofts and shelves etc. Every effort is being made to provide the maximum convenience and amenities with due regard to financial limitations.

4.6 The scheme as revised from time to time also provides, apart from the pucca houses mentioned above, for the following three types of accommodation :—

- (i) Open developed plots,
- (ii) Skeletal houses,
- (iii) Hostel and dormitory buildings.

All the above types have been evolved particularly to meet the requirements of workers whose rent paying capacity is much too low to enable them to occupy a pucca house. The hostel-type accommodation is meant mainly for non-family workers.

4.7 The minimum size of the open developed plot is laid down to be 100 sq. yards. Each plot is to be provided with wire-fencing, a platform of about 300 sft., a pucca sanitary latrine and a pucca bathing and washing platform with a water tap and suitable drainage arrangements. The allottee is to be given building materials worth Rs. 150/- to enable him to put up a hut of prescribed pattern on self-help basis. In the case of skeletal house the built up area is practically the same as that of a small two-roomed house, but instead of completing the structure, only the foundation, the plinth and a kutcha roof on pillars is provided apart from the sanitary latrines, the bathing platform, the water tap and the drainage arrangements as in the case of the Open developed plot.

4.8 Some of the States, particularly, Madras have adopted the open plot and skeletal house

projects with some success, but the general objection is that this type of accommodation quickly degenerates into a glorified slum. It is also felt that if open subsidized fully developed sites are given on long-term leases, the allottee will have some incentive to invest some of his money or obtain loans for having an improved house, which he could call his own.

5. CEILING COSTS AND RENTS

5.1 As already pointed out above, it has been necessary to keep down the ceiling cost as much as possible not only to ensure the construction of maximum number of houses with available resources, but also to bring them within the reach of the average worker whose rent-paying capacity is proverbially low. Nevertheless, the legitimate pressure for better standards in housing and the progressively rising cost of construction have resulted in the raising of ceilings by 40 to 50 per cent since the inception of the scheme. In 1952, the ceiling cost was Rs. 2700/- for a single-storeyed one-roomed house and Rs. 4,000/- for a multi-storeyed house in the larger cities. The ceilings were revised towards the end of 1953 for single-roomed and two-roomed houses built in single, double or multi-storeyed structures ranging from Rs. 2,700/- to Rs. 5,600/- in Bombay and Calcutta and from Rs. 2,700/- to Rs. 3,850/- in other cities. These costs were again revised in 1957, ranging from 4,600/- for a single-storeyed one-roomed house to 7,250/- for multi-storeyed two-roomed house in Bombay and Calcutta, and corresponding ceilings for other cities being 3300/- to 4,200/-. These ceilings have been further raised in February 1962, applicable to houses taken up for construction after 1st April, 1961. It is obvious that the rents had also to be proportionately raised. The latest ceilings are in Table 2.

Table 2—Overall Ceiling Costs and Standard Rents.

Sl. No.	Type of accommodation	Overall ceiling cost (Rs.)	Standard rent per month (Rs.)
(1)	(2)	(3)	(3)
I. Outside Bombay and Calcutta and their industrial areas.			
(i)	Open developed plot	1,400	4.00
(ii)	Skeletal house	2,200	9.00
(iii)	Small two-roomed house (Single-storeyed)	3,650	14.00
(iv)	Small two-roomed house (Double-storeyed)	3,850	15.00
(v)	Small two-roomed house (Multi-storeyed) except (vi) below	3,850	15.00
(vi)	Small two-roomed house (Multi-storeyed) in congested areas in the heart of towns	5,100	18.00
(vii)	Regular two-roomed house (Single-storeyed)	4,250	16.00
(viii)	Regular two-roomed house (Double & multi-storeyed)	4,650	18.00

(1)	(2)	(3)
II. In Bombay and Calcutta and their industrial areas		
(i)	Open developed plot	2,100 7.50
(ii)	Skeletal house	3,200 13.50
(iii)	Small two-roomed house (Single-storeyed)	5,100 21.00
(iv)	Small two-roomed house (Double-storeyed)	5,350 23.00
(v)	Small two-roomed house (Multi-storeyed)	6,400 25.50
(vi)	Regular two-roomed house (Single-storeyed)	5,850 24.50
(vii)	Regular two-roomed house (Double-storeyed)	6,350 26.50
(viii)	Regular two-roomed house (Multi-storeyed)	8,000 32.50

There are special provisions for slightly higher ceiling costs, such as Rs. 250/- per house for black cotton soil areas and in the case of towns other than Bombay and Calcutta, Rs. 500/- extra per unit with population more than 3 lacs and Rs. 200/- extra for towns with population of 1 to 3 lacs. This increase does not apply to houses built in congested areas in the heart of towns—[Item I(vi) above].

5.2 The rents are exclusive of water and electricity charges but include Municipal taxes. There is no bar to lower rents being charged and the State Governments can fix varying rents with an overall limit. The State Government ensure that the excess rent recovered in respect of certain houses is wholly applied towards reducing the rent of other types of houses to accommodate workers of low rent paying capacity. Slightly higher rents are permissible for special increases in ceiling costs.

5.3 While the upper limit qualifying a worker for allotment of a house under the scheme is a salary of Rs. 350/- per month, the vast majority of workers get wages which are much too low, so that the standard subsidized rent would even work out to about 20% of their wages for the cheapest small two-roomed house. The wage level of the lowest worker in an industry varies considerably from town to town and from industry to industry even outside Bombay and Calcutta. Wages in Textile Industries for instance, are generally higher by about 50% as compared to those in other less organized industries. The result is that a low paid worker continues to seek shelter in slum areas, which it will still take a long time to eradicate.

5.4 The Scheme also provides for the allotment of houses to eligible workers on hire purchase basis in compact units and well-defined areas. An allottee has to deposit in the first instance half the amount of subsidy given by the Central Gov-

ernment for construction of a house. He has to pay 360 monthly equated instalments of the net cost received as loan by the State Government received for the construction of the house together with Municipal taxes, 1½% of the total capital cost of construction for maintenance annually and departmental charges not exceeding 6% of the capital cost. The design of the houses constructed is usually such that it does not inspire the average worker to go in for hire purchase on the basis of each quarter. The average worker's concept of the house which he would like to own is that of an independent structure with a distinct piece of land.

6. SLOW PROGRESS AND ITS CAUSES

6.1 As mentioned above, the Government of India had sanctioned since the inception of the scheme up to 31st December 1963, the construction of 1,64,058 houses under the subsidized Industrial Housing Scheme, involving a total aid of 56.19 crores. Out of these, only 1,37,255 houses had actually been finished by the end of December 1963. The main factor responsible for the relatively slow progress of housing is the low priority given by the State Government to housing as compared to other development projects. Pressed by the urgent requirements of such high priority projects as power, irrigation, agriculture and industry, the states level to divert the funds, contemplated for expenditure on housing. This tendency was further accentuated under the recent emergency. Apart from this general tendency there have been some serious bottlenecks which militate against the realisation of targets, as given below :

6.2 Availability of Building Sites—The available building sites become more and more scarce in expanding towns and they get farther and farther away from their places of work. The acquisition proceedings for land have become a tardy process and the completion of proceedings take a considerable time, particularly, when they get involved in legal difficulties arising out of injunctions and writ petitions, whether about the institution of proceedings or against the actual possession of land. The process is particularly delayed in the case of acquisition of slum pockets that have to be cleared for the construction of workers quarters. There are actual instances where the actual acquisition proceedings and the possession and clearance of sites took even 4 to 5 years, inspite of the best efforts for speedy acquisition of sites, and the use of the provision of Section 17 of the Land Acquisition Act, 1894.

6.3 Land Development and Provision of Services—The construction of large colonies of workers would naturally require substantial extension of water supply and sewerage facilities obtaining in any urban areas. The Housing Schemes themselves do not provide for the financing of major water supply and sewerage extension projects, on the execution of which depends the provision of the minimum Municipal services, without which the colony, even if constructed, would not be occupied. These projects have to be financed independently of the Housing Schemes, under the National Sanitation projects sponsored by the Health Ministry. There is usually a time lag between the sanctions obtained for construction of houses and the sanction and execution of capital

projects of providing municipal services. Often temporary arrangements have to be made for water supply and disposal of sewage, to meet the requirements of the newly built colonies.

6.4 Apart from these, there are the problems of construction of trunk roads, railway crossings, canal crossings, etc. which not only involve substantial capital expenditure, but also considerable delay in negotiating these hurdles. In one case, it took us about six years to get a trunk sewer across a railway line, and about 3 or 4 years to get a level crossing constructed. The difficulties are, no doubt, negotiated and gradually overcome, but they are delayed beyond the control of the executing authorities. They under line the need of coordination between the departments of the State and Central Governments in the interest of mutual priority.

6.5 Availability of Building Materials—The progress of work is often retarded due to lack of timely supply of adequate building material. During the last ten years we have been experiencing serious shortages of cement, iron or coal from time to time. The time lag in the supply of Cast Iron pipes is too well-known to need any comments here. The 3" and 4" pipes supply against the present day order is likely to be available after the expiry of the Third Plan Period. The Constructing Agencies are not able to expedite the execution of works inspite of the availability of funds in the absence of free flow of materials, which, though allocated, often fail to arrive in time.

6.6 Effective Demand for Housing Accommodation—Two important factors govern the eagerness of the workers for obtaining a house built under the scheme. Firstly, the capacity to pay, and secondly, the distance of the Colony from their place of work would dominate the choice of the worker to move from his present slum dwelling to the new colony. The average low paid worker is generally unable to meet the cost of transport from his dwelling to his place of work. It has been found that the most popular colonies are the ones that are built after clearing slum sites in the congested parts of the city, even though they may be relatively less comfortable to live in. The execution of large housing programmes would naturally mean moving further and further away from the centre, and the distances have to be negotiated. On the other hand, houses constructed on the periphery of the town take a long time to get occupied. The above are but some of the difficulties in the way of speedy implementation of the scheme.

7. WILL THE COLONIES DEVELOP INTO SLUMS

7.1 Fears have been expressed that the Industrial Housing Colonies that are being constructed will turn into slums in the not distant future. The growth of slum conditions depends on a number of factors. These include general layout plan of the colony, the plan and design of the house, the provision of Municipal services, and lastly, the extent of over-crowding. The Subsidized Industrial Housing Scheme of the Government of India has laid down adequate checks for the development and planning of the area and the provision of ventilation and sanitary facilities in the houses themselves. The Scheme lays down the following densities for the different types of accommodation provided for in the scheme,

- (i) Open developed plots—20-25 plots gross acre,
- (ii) Single storeyed construction—20-25 houses per gross acre,
- (iii) Double storeyed construction—30-35 houses per gross acre,
- (iv) Three-storeyed construction—40-50 houses per gross acre,
- (v) Four storeyed construction—50-60 houses per gross acre,
- (vi) Five storeyed and higher construction—60 houses per gross acre.

If these densities are adhered to, and layouts are prepared by qualified Town-Planning agencies, it is possible to provide for adequate open spaces, wide roads, parks and other sites for community facilities.

7.2 The Scheme also requires the provision of proper roads, lanes, parks, drainage, water supply, sewerage, street lighting, tree planting and other horticultural amenities. There should, therefore, be no danger of the surroundings of these colonies developing slum conditions. There are, however, other factors that may create insanitation and over-crowding. The housing accommodation is admittedly small, and in spite of best efforts, it is likely to be overcrowded, particularly in the case of one-roomed and small two-roomed tenements. The normal standard of accommodation are the provision of at least 500 cft. of living space for an adult and 300 cft. for a child. The usual floor area available in the single living room is 120 sq. ft. or a total space area of 1,200 cft. This accommodation will be overcrowded as soon as the number of occupants increased beyond the limit of husband, wife and one child. It is not unusual, therefore, to find the occupants trying to enclose the courtyard with shabby structures to gain some more covered space.

It is, however, impossible in the present state of economy to provide more accommodation to suit the rent-paying capacity of the average worker.

7.3 Very much depends on the habits of living of the worker. The same space can be made to give a far more pleasant appearance and greater convenience by a person with better taste and an improved standard of living. There are also instances of the tenants trying to keep goats or cows, etc., creating nuisance in the surroundings. Such conditions can be checked by constant efforts on the part of house-management staff. The Housing Welfare worker who should be able to use his power of persuasion for better living. Legislation for prevention of over-crowding and keeping of cattle, etc. as well as measures against unauthorized additions and alterations to the house have been adopted in most of the States. The enforcement of these provisions with the help of vigilant but sympathetic Inspectorate is essential.

7.4 Last but not the least is the general tone of the colony which has to be tuned to a new pitch of social living by organization of urban community development activities and the provision of community facilities so that the workers can freely assemble in pleasant surroundings. The construction of community buildings, such as, schools, dispensaries, welfare centres, etc. has been a responsibility of the State Government or the local authority, and the provision of these facilities are often delayed which affect not only the general community life, but also the popularity of such colony. Workers who are generally reluctant to move to new surroundings can be very well attracted if added facilities are made available. Thus the future of these colonies is linked up with the welfare of the human material who must be encouraged to develop new values and motivated to attain new norms of living in healthy surroundings. That is the only guarantee against the colonies deteriorating into slums.

Low and Middle Income Group Housing Schemes**

By

Shri L. S. Dabholkar†

1. There was a time when housing was more than adequate and people could easily find accommodation which suited their convenience and requirements. It has never been so after the Second World War. As a result of the events that followed thereafter in rapid succession it assumed the magnitude of a 'PROBLEM' and though the Union and the State Governments have been trying in their own way to meet the situation, they have not so far been able to touch a fringe of it. The Third Plan makes no secret of this scarcity and affirms that "The problem of housing for the country has already become very serious and it is apprehended that it may become worse in future" and this conclusion arrived at by the Planning Commission with clear conviction should merit our careful consideration.

2. If it is conceded that it is a sign of genuine awakening in a nation to visualize the gravity of the situation, there is nothing wrong to assume that in so far as our country is concerned the housing shortage should be treated as a social emergency which has to be met from all sides by all possible agencies and we must be prepared to face with fortitude the difficulties, whatever they may be, and try to resolve them with confidence and assured success.

3. You will bear me out if I say, that it may not be out of place here to take a rapid survey of the housing situation in the immediate past so as to enable us to see as to what schemes in particular should be preferably encouraged with a view to preparing the background, to evolve ways and means to relieve the Union Government and the States as far as possible of the responsibility so far solely put on them except their relevant financial obligations; and to enlist the sympathy and support of social workers and organisations in private and public sectors from both urban and rural areas.

4. After the partitioning of the country and consequent adjustment of the population, we commenced to experience gradually but steadily the housing scarcity. The rapid industrialization of the country particularly at the capital towns aggravated the situation causing immigration of people from rural to the urban areas in search of jobs and employment so as to make quick and easy money.

5. A decade ago, most of the under-developed countries faced the problem of housing and the task to providing homes to thousands of families was a stupendous one; India was no exception to it. At about the same time, some other advanced countries had as well to face the same problem, though for quite a different reason. In their case, it was due to inevitable horrors of the last World War. Countries like East and West Germany, Ethiopia and part of France and United Kingdom

were completely devastated and people were left without a roof over their head and yet within a reasonable space of time they met successfully their requirements of housing. It may perhaps provoke a challenge in our minds, yet it cannot be denied that in the German Democratic Republic from 1958 to 1962, 1.2 million persons were comfortably provided with accommodation in the new flats, further in 1963 a stupendous activity was witnessed there in this field and every sixth minute saw a new flat constructed. In Israel Co-operative Societies achieved notable success not only in providing housing to families of limited means, but they have also been instrumental in reducing the cost of building materials in the free market and for improving considerably the quality of housing construction in the country. This was only just possible because the Government and people in the countries mentioned above with vigorous element of fervent enthusiasm and courage were determined to get over their difficulties.

In India we have not been able to achieve the Plan target in the field of housing. In spite of the five year plans gone by, the fact remains that the country as a whole is yet suffering from shortage of basic need of man, i.e. food, clothing and housing. Though a few States have made some progress, much will still have to be done if we are to enjoy the satisfaction of having made appreciable advancement in this direction.

6. Though the Union and the State Governments are no doubt ardently desirous of solving the housing problem, but it has not been fully realised that in addition to efforts made by them, they can with confidence as well look to other agencies who would be able to help and assist. But in order to draw upon their financial resources to relieve the housing shortage, proper encouragement and inducement will have to be given to them. During the last fifteen years or more we have experimented with "Controls" and the experience has convincingly proved that they can lead us nowhere but help only to create crisis of confidence and allow the finance which may otherwise be available for housing, to flow into other channels of investments which are easily available for investment.

7. It does not behove us to be under erroneous notion that because of the increasing activity of building construction being pursued in the city like Bombay and other capital towns in India scarcity in accommodation is likely to be mitigated and thus we are nearing a solution of the problem. In fact, the construction that we see coming up so fast is the result of investment of a few speculators who let out to firms at fabulous rents or sell them at a high price. The rents paid or price offered for such flats are generally not in relation to their relative benefits or advantages. The activity of this nature cannot in any way help to solve

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the problem. It only tends to aggravate the situation, bad as it is already, by inflating the price of land and again creating scarcity of land and materials. If the housing problem has to be solved, the maximum number of families of moderate means, *i.e.* Low Income & Middle Income Groups, will have to be provided with decent and sanitary accommodation which is reasonably required by a family to preserve its self-respect; within the range of rent which its limited income can justifiably afford.

8. The foresightedness of the Government of Maharashtra is evident in their realization that the problem may be eased if not completely solved by providing accommodation to Low & Middle Income Group families. With this consideration, they have given priority to housing for Industrial workers who comprised essentially a large section of Low Income Group of individuals with income not greater than Rs. 6,000 a year and Middle Income Group of individuals with annual income between Rs. 6,000 and Rs. 15,000 a year. If it is assumed that a family can reasonably pay rent of 10% of its income, it is necessary to revise the income scale of the Middle Income Group from Rs. 15,000 to Rs. 24,000 a year or from Rs. 1,250 to Rs. 2,000 per month, as these days, there is no possibility for a family to secure reasonably moderate and respectable accommodation for a rent below Rs. 200 per month.

9. Each State in India is trying to solve this problem in its own way and many of them, and some of them have already established Housing Boards which are working effectively by ordinary prudence should suggest that no one agency can meet the situation. Other bodies, such as municipalities, port trusts, railways, charitable institutions, religious endowments having large funds to spare, banking companies and large and well-established industrial concerns and even individual investors will have to be induced to take interest in solving the housing problem, putting aside all other considerations for the time being.

10. It is true that none of the agencies referred to above, except to some extent the Union and the State Governments, have paid any serious attention to the problem of providing accommodation to their employees—at least to those falling in the two groups which we are considering at the moment. Even in their case, there may be a problem of finding adequate finances. Taking the gravity of the situation into consideration, providing housing to their own employees with limited means must be accepted in a spirit of duty. The effect of the suggestion may easily be appreciated from the following statistical information, so far as Bombay City is concerned; what is true in the case of Bombay, may more or less be true in other important industrial cities in the country.

The Government of India has a complement in this city of 1.75 lakhs of employees while employees of State Government and Bombay Municipal Corporation come to 0.40 and 0.80 lakhs. Thus only three employers in public sector account for a population of fifteen lakhs or thereabout. The City of Bombay has a shortage of 1½ lakh houses and this shortage is growing from day to day due to several causes. In case the three employers make a phased programme to house at least two-thirds of their employees who may, I presume, fall

in the Low & Middle Income Groups and enjoin the same yardstick on other major employers in Industrial and other fields, a large slice of the difficult housing situation can be met with.

11. The textile mill employers in Bombay had come out with a suggestion that the fund for housing the industrial workers might be created from the payment made to the wage earner from the additional amount added to his wage and further the employers would as well pay their contribution which could be considered as a revenue expenditure item. A sum of rupees fifty lakhs was collected under this scheme, but since it was not recognized by Government, it fell through and the amount to its credit was distributed to labour. With such a fund created by charging employees (industrial and non-industrial) and employers in equal share, there seems to be no reason why employers should not be willing to pay their share provided they get relief as an item of revenue expenditure for taxation purposes. A substantial amount can at any time be collected which may be handed over to the Maharashtra Housing Board for construction of houses for employees falling in Low & Middle Income Groups, if the employers do not propose to take upon themselves to construct houses on large scale schemes. The same principle may be made applicable to banks and other concerns, with a view to providing sufficient housing for their employees of the Low & Middle Income Groups.

12. The Bombay Housing Board, a statutory body created by the then State Government, in 1948, now known as Maharashtra Housing Board till lately was only interested in building houses for industrial workers under their Subsidised Industrial Housing Scheme. Sufficient progress was made in that direction, and they started constructing houses under various schemes, such as Slum Clearance, Low Income Group, Middle Income Group, Rehabilitation works for Dis-housed Persons and under miscellaneous projects such as 'Burmah Shell Oil Refineries', 'Old Industrial Housing Scheme' and 'Military Hutments taken over'. Again under the Low Income Group Housing Scheme, the Board has three schemes which are known as (1) Own your Own House Scheme (2) Rental Deposit Scheme and (3) Hire-purchase Scheme. Under the Scheme known as Middle Income Group, the participants are required to contribute 30% of the cost of the house on allotment and the balance cost is recovered in monthly instalments spread over for 15 years which includes taxes, repairs and maintenance charges. After 15 years tenants have to form a Co-operative Housing Society to take over the legal ownership of these houses.

13. In addition to the above schemes, Government of Maharashtra has framed one more scheme known as "Employers Contribution Scheme" which is run on the same lines as Subsidised Housing Scheme except that in that case particular employers have to intimate their quota of tenements required and in case Government agrees for the allotment of that quota, the employers have to contribute 25% of the cost of the structure and allotment is made to the employees of the party concerned subject to the concession that out of the total number of tenements so allotted, 25% of the number of tenements is left to the discretion of the employer.

14. An indication of the progress made on these various schemes from 1948 to September 1963 by the Maharashtra Housing Board, may be had from the following Table :

Schemes	No. of tenements	Expenditure in lakhs
(1) Subsidised Industrial Housing Scheme	20,910	1035.23
(2) Slum Clearance Scheme	7,582	235.46
(3) Low Income Group Scheme	2,912	177.15
(4) Middle Income Group Scheme	684	111.36
(5) Rehabilitation Works	19,715	500.99
(6) Dishoused Persons Scheme	200	12.63
(7) Miscellaneous Project Scheme	6,758	322.67
	58,761	2,395.49

15. The houses built by the Maharashtra Housing Boards are generally let out on a subsidised rental basis to the extent of 50% to the Industrial workers and 62½% in the case of slum dwellers. Though such schemes are laudable in themselves, they may in course of time react adversely on national economy and Government may have either to resort to increase taxation to make up for the revenue deficit or seek borrowings from other agencies on heavy interest charges. In order, therefore, it should not at any time upset the equilibrium of the State economy, it is highly essential that principle of subsidising rent will have to be gradually abandoned and such schemes implemented by which Low & Middle Income Groups will be induced to take advantage of housing on economic rents which will certainly be at any time less than rents charged by ordinary investors in properties.

16. If it is conceded that individual property owners may not feel interested for reasons of their own, to build houses for Low & Middle Income Group people and further if it is appreciated that people in these Groups, even though provided with accommodation under the schemes of the Housing Board, we have discussed above, except in non-subsidised, may have to leave the houses if their earnings exceed the limit fixed for income for respective subsidised Groups, the difficulties may eventually arise as to where a person can shift, even though his income has improved, and when he ceases to be a member of that particular income group. It is therefore very necessary that members of Low & Middle Income Groups may seriously consider the question of having Housing Scheme of their own preferably under: "Own your own House" or Hire Purchase" Schemes of the Housing Board or under Housing Co-operatives. This will in course of time, not only tend to reduce the burden on Government economy or on the economy of the several other agencies already referred to above (who may perhaps be induced under the present circumstances to supply the housing needs for these Groups, yet may ill-afford to supply permanently residential accommodation to the people

of these Groups) but will inculcate in them spirit of self-help and self-reliance to stand on their own legs.

17. Though I have, not without hesitation, made a suggestion here that in the present set up of housing scarcity, it may be treated on an emergency level and subsidised housing made available to Low Income Group as it is done in the case of Industrial Workers and Slum Dwellers by the Housing Board, this emergency cannot be assumed to prevail for all times to come. It is therefore highly essential for those belonging to these Groups when they have been provided with houses by the Housing Board and thus have some breathing time, should plan for future, and to provide themselves with accommodation of their own so that the subsidised housing may be made available to families who are less fortunate. It is a matter of regret, very few seem to appreciate that subsidised residential accommodation is mainly meant for such families who are in dire need of help and assistance.

18. Under improved family circumstances, we make provision for the marriage of our daughters by starting saving well in advance; we spend to satisfy customs and traditions on social and religious festivities, however unimportant they may be, but we are utterly unmindful to lay by as much as it is possible while we earn with a view to providing ourselves with a residential place under co-operative housing or any other scheme that may suit us so that we may not suffer any inconvenience after retirement from service. While on this point, I may suggest, co-operative housing has certain distinct advantages and it is not only regarded generally as an honest endeavour made by persons who are not only keen and desirous to provide themselves with accommodation by dint of their own efforts, but are as well profoundly anxious not to put strain upon others needing a house. Naturally therefore the sympathy and attention of Government and public will be with those who propose to help themselves.

With a view therefore, to encouraging co-operative housing, several facilities, advantages and reliefs are generally provided under the Co-operative Societies Act, yet it cannot be denied that under the difficult and uncertain times through which we are passing, such societies may have to face problems of securing suitable land, procuring adequate finance as also materials barely necessary to complete their buildings in as short a time as possible, a factor which not only keeps the constructional cost within reasonable bounds but further helps to enhance confidence and enthusiasm of those who are interested in it. The Government of Maharashtra anticipating these difficulties has so far made adequate provision to enable such societies to complete their building schemes without hindrance of any kind.

18.1 Land—The Maharashtra Housing Board has been allowed by the State Government to offer part of the land acquired and developed by them at cost price particularly with recognition to the fact that land prices are rapidly soaring high and suitable lands are not easily available. Further the Housing Board has proposed to offer its services from the stage of drawing up the plans till the completion of the construction of the build-

ings to such societies at a reasonable charge. The principle is accepted, but the scheme is under consideration of the State Government and several agencies directly concerned with the co-operative housing in one way or another and when finalized, it will give a great impetus to the co-operative movement, particularly for the Low & Middle Income Group Schemes, for which it is essentially meant.

18.2 Finance—The Maharashtra Co-operative Housing Finance Society Ltd., which is the financing agency created by Government has been doing very useful work in so far as advancing loans to co-operative housing is concerned. The nominal capital is rupees one crore which is practically fully subscribed and paid up. This capital is subscribed to by various agencies, such as Joint Stock Banks, Insurance Companies, Co-operative Housing Societies and Co-operative Societies other than housing; the State Government has invested an equal amount of the capital so raised. The Finance Society has further borrowed loans from the Life Insurance Corporation of India and the capital of the Society and the loans are again fully guaranteed by the State Government so as to create confidence among sections contributing to the capital as also those advancing loans to the Society. The policy of the Finance Society has been gradually tending towards giving priority to finance schemes of Low & Middle Income Groups and particularly to those Societies which are formed in the districts and even small towns where these two groups may be in predominance. This can be well appreciated from the fact that when loans are given to Housing Societies in Bombay City on the basis of 60% of the value of land and building, to the Societies outside Bombay City, it is granted on 80% basis. Thus this Finance Society has so far financed 314 Housing Societies which have constructed 6902 tenements out of which Low & Middle Class Groups have built 6300 tenements of two, three or four rooms for which the Finance Society has disbursed so far an aggregate loan of Rs. 8 crores 35 lakhs. The financing is evidently on long term basis and can be repaid by the borrowing housing societies within a period of 10, 15 or 20 years at their option and societies generally prefer to repay loans in 20 years.

18.3 Materials—The State Government has made adequate provision of the supply of this commodity to co-operative housing through the Maharashtra Cement Advisory Committee which has been established a few years ago. The State, however, with a view to encouraging and give impetus to co-operative housing for Low & Middle Income Groups particularly, is thinking of reserving a special quota, conditions attached to this special quota being that a society desiring to take advantage of this facility must be formed on Co-partnership basis (*i.e.*, the land & building must be of the Society's ownership) and each tenement should not cover a carpet area of more than 55.2 sq. m. (600 sq. ft.) which may easily comprise an apartment of three rooms of fairly moderate size with services attached (bath & water closets).

The facilities offered by the Government of Maharashtra may be followed with advantage by other States who have not yet thought of such schemes to encourage co-operative housing among Low & Middle Income Groups.

19. The Union Government has always evinced keen interest in encouraging co-operative housing and with a view to stream-lining federal structure in each State for organizing the movement, it had appointed a Working Group who submitted their report recently. The Group recommended that 20% to 25% of the Funds allocated under Housing Scheme be reserved for the Co-operative Sector and it may even be raised to 40% where the Co-operative Housing had made good progress. It further suggested that the repayment of loans should commence after 24 months from the date of advance instead of 12 months as at present and the ceiling of loan assistances under Low Income Group Housing might be raised from Rs. 8,000 to Rs. 10,000 at least in the larger cities. They are of opinion that the housing co-operatives should be given priority in allotment of land owned or acquired by the State Governments under the Land Acquisition and Development Scheme. The suggestions made by the Group are worthy of consideration and immediate implementation so far as possible as it would greatly help the cause of Low & Middle Income Group Housing, particularly in the cities if the ceiling is raised from Rs. 10,000 to Rs. 12,000 at the minimum. Experience in Bombay has sufficiently proved that since land prices have gone up and materials have become costlier, a ceiling of Rs. 10,000 may not be quite adequate to meet the exigencies of time in so far it relates to the construction of two-room tenements.

20. We have discussed so far our shortcomings and the efforts made by the Union and State Governments to encourage housing in general and co-operative housing in particular for Low & Middle Income Groups. There may still be some scope to encourage and to give impetus by making additional sources of finance available to them. A few suggestions for the consideration of the proper authorities are made in the following :

20.1 Banks & Industries may advance loans to Co-operative Housing of Employees of limited means—I need hardly add that there may be reasonable grounds why industrial concerns and banks hesitate to build houses for their employees. If such houses are constructed for employees by these agencies, it may be possible that complications may sometimes arise if employees do not vacate it on their being discharged, dismissed, or when they resign or retire even though, it may be due to sheer helplessness. There may be legal entanglements and both employers and employees may get themselves involved in long, arduous and protracted litigations of eviction suits which both sections would certainly like to avoid. To obviate this difficulty and at the same time to see that the object is achieved, it may be suggested that employees particularly belonging to Low & Middle Income Groups may be encouraged to form co-operative housing and employers can advance loans on long term basis of 15 to 20 years on 10% margin against the cost of land and buildings of such co-operative housing societies and charge a reasonable rate of interest. From the suggestion made, it will be clear, that in addition to affording permanent residential accommodation to the employees which they can enjoy in their own right, it will further tend to maintain the relations between the employees and employers as happy and cordial as they should be and there would be no hesitation in the minds of the em-

ployees or a sort of feeling that they will be required to vacate the premises in case they do not continue to be in the service of the employers constructing such buildings. On the other hand, the employers need have no hesitation that they will be put to any loss or inconvenience as they will have full and sufficient security for the loans advanced against the property of a co-operative housing society and the investment will be absolutely safe whether the resident-members are in their employment or not.

20.2 Housing Finance Corporation—As we have already seen, it cannot be disclaimed that large funds are allowed probably inadvertently to lie idle and unutilized with several Charitable Institutions and Religious Endowments and what better use can they be put to than to utilise them to build up a large nucleus of a Housing Finance Corporation, by investing their funds either in shares or debentures of such a corporation? The Union & State Governments, the Central Banking Authority, State Bank of India, Joint Stock Banks, Life Insurance Corporation, Insurance Companies carrying on general Insurance business may as well contribute substantially to enable such a corporation to function in an effective manner to further supplement the finance required to advance loans to persons particularly of Low & Middle Income Groups who may be desirous individually to invest a part of their own funds in "Own your House Scheme", or by forming limited companies on the basis of Joint Stock Company on the clear and distinct understanding in writing, supported by a legal document that any tenancy to be created in regard to such buildings or change of ownership at any time in future shall only be in favour of a person of Low or Middle Income Group with a view to leaving no temptation to speculate in this type of investment.

20.3 Non-Refundable Loans from Provident Fund Account—It is surely affording great relief to Low & Middle Income Group families when they draw Non-Refundable Loans from the Provident Fund Scheme managed and governed by the State Government for the purpose of housing.

Building advances are also being sanctioned by State Government at reasonable interest rates but beneficiaries have been only few.

20.4 Relief in Taxes—The Income Tax Commission presided over by the late Dr. John Mathai had recommended total exemption in payment of income tax to co-operative housing societies but individual members of such societies are liable to be charged the same by adding rents paid to their income. This suggestion was accepted and is now followed in practice. I have no hesitation to suggest that total exemption in the payment of income tax may be allowed even to the members of a co-operative housing started by the Low & Middle Income Group people; so also a substantial relief without strings or reservation of any kind be given in municipal taxation to such societies for a period of 10 to 15 years from the date of completion of their housing scheme.

These reliefs, small as they may apparently look will go a great way to encourage the Low & Middle Income Groups to assist and help themselves which is so much needed both to meet the shortage of housing in the country as also to make a beginning eventually to lessen the drain put on the national finance under the subsidised housing scheme of the Union & State Governments.

21. It is indeed a matter of gratification that in spite of our drawbacks and handicaps in the field of housing, so much progress should have been made for housing families of Low & Middle Income Groups. Though the enormity of the problem may at times deceive us to believe that it is impossible of accomplishment, with minds full of vigour and hopeful, uplifting thoughts determined to overcome the difficulties arising from the shortage of housing accommodation and resolving to lay no impediment in the way of progress and achievement and basing our faith and aspirations on the high pedestal of self-respect, self-reliance and mutual help, we should certainly be able one day—not very distant—to solve the housing problem in the country; though it may for the present look to be a somewhat difficult and uphill task.

Working of the Building Bye laws with Special Reference to the Union Territory of Delhi***

By
Dr. V. Jagannadham†

1. INTRODUCTION

1.1 Men have lived in towns for thousands of years, but the great city of today is a very recent and modern phenomena. As a result of industrial development, vast aggregations of population numbering millions are today to be found in some of the large cities of the world. This widespread movement of population has resulted in haphazard growth of existing towns and cities, and in spite of efforts at planned development of new cities, we witness unregulated growth even among new urban units. As a result of this growth in towns and cities and consequent increase in fire and health hazards, the problem of ensuring good and sound construction has assumed great importance. Safe and sound building construction methods are matters of public interest and therefore, measures to protect this public interest become absolutely necessary. Building bye-laws are one of such measures.

1.2 Recognition of the fact that some form of coordination and central control over the use of land is essential has come about only during the last fifty years or so. During the 19th century, restrictions on location were unknown, and there were virtually no regulations concerning the design or lay-out of houses or other buildings or for their preservation in either town or countryside.

1.3 The basic purpose of town and country planning has been to ensure, as far as possible, that land is used in the best interests of the community as a whole. Planning Authorities, while encouraging development, have constantly been faced with the problem of remitting or at least mitigating some of the unfortunate effects of unplanned development and growth. This task has been further complicated in recent times by the fact that modern civilisation demands ever more and better houses, public buildings, schools, shops and places of entertainment and recreation as well as more factories, power installations, roads or fields, etc. This work involves a detailed control over the location, size, and character of towns and villages over the setting of industry and the provision of public services like electricity, water, transport, sewage disposal, etc. Town and country planning cannot work miracles. Inevitably, the re-shaping of a country is a long term project, the success of which depends on the extent to which the planning policy can be adapted to changing social, economic and tech-

nological factors. Any acceptance of the need for central direction in the use of land is only a first step towards planning.

2. THE FIRST BYE-LAWS

2.1 Bye-laws to regulate the construction of buildings in Delhi were introduced for the first time in 1915¹. These bye-laws were prepared by the Delhi Municipal Committee under Section 189(3) and 190 of the Punjab Municipal Act of 1911. Any person who intended to erect or re-erect any building was required to give notice in writing of his intention to do so in a prescribed form and he was also required to submit a site plan, a building plan and other details, such as the number of storeys, the position and dimensions of doors, windows, the number of latrines, the purpose for which the building was to be used and the materials to be used in the construction of walls. The plans were required to be submitted in duplicate, and there was no restriction as to who should prepare the plans. Even an authorised agent of the owner could apply for the construction or re-construction of an existing building. It was only in 1948² that plans were required to be prepared by a draftsman licensed by the Municipal Committee and licenses were issued only to such persons who, in the opinion of the Municipal Engineer, had duly qualified themselves to be draftsmen.

2.2 Inspection

Though the bye-laws were framed in 1915, yet, no machinery was set up for checking whether the buildings were being constructed according to approved plans or otherwise. It was only in 1944³ that clause 39 in the building bye-laws was incorporated, which reads as follows :

"No person shall occupy or allow any person to occupy any new building or portion of the new building or any old building or portion of the old building that has been vacated for re-erection for any purpose unconnected with building operations until a certificate in form 'C' in respect of such building or portion thereof has been granted by an officer of the Committee authorised to give such certificate."

Form 'C' called 'Completion Certificate' form was issued to the citizen after inspection and it certified that the building had been constructed according to the sanctioned plans and was fit for the use for which it was erected or re-erected. Details of the kind of inspection which was actually

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¹. Chief Commissioner's Notification No. 3558-Education dated 28th May, 1915.

². Chief Commissioner's Notification No. F. 2(72)/48-L.S.G. dated 14th June, 1948.

³. Chief Commissioner's Notification No. F. 2(110)/44-L.S.G. dated 9th October, 1944.

carried out at that time are not available. In case any citizen did not apply for "completion certificate" and occupied the house in contravention of Article 39 of the Building Bye-laws, he could be prosecuted⁴. Any person who committed or abetted the commitment of a breach of Bye-law No. 39 was liable to conviction by a Magistrate to a fine which could extend to Rs. 50. Thus, the maximum fine which could be imposed at that time was nominal, and even the Municipal Committee, in order to impose this fine, had to go through the procedure of filing a suit and getting conviction against the citizen.

3. ESTABLISHMENT OF MUNICIPAL CORPORATION AND DELHI DEVELOPMENT AUTHORITY (1957)

3.1 The Building Bye-laws which had been framed in 1915 were applicable only to a total area of 17.3 sq. km. (6.70 sq. miles) (area of the then Delhi Municipal Committee), and these were hardly designed to cope with the kind of problems which Delhi had to face following Independence and partition of the country. Mass migration led to haphazard and sub-standard development in the metropolitan area at a fast pace. The City started growing rapidly to the South and West, making it functionally unbalanced. Lines of communications were stretched and the provision of municipal services and other facilities which are very essential for urban living, became extremely difficult. There was an acute shortage of housing and haphazard constructions creating overcrowding, congestion and insanitary conditions.

3.2 It was in order to check haphazard construction, and to regulate and control the building activities in Delhi, that the Government of India promulgated on 2nd October 1955, the Delhi (Control of Building Operations) Ordinance in 1955. Under this Ordinance, the Delhi Development (Provisional Authority) was constituted. This Ordinance was later on replaced by the Delhi (Control of Building Operations) Act, 1955. This enactment remained in force till 31st December 1957. The Delhi Development Act, 1957, replaced the Delhi Development (Provisional Authority) and the Delhi Improvement Trust with the object of promoting and securing the development of Delhi in accordance with the Master Plan, and the Zonal Development Plans, which were to be prepared by the Authority and approved by the Central Government.

3.3 In the meanwhile, the Delhi Municipal Corporation Act, 1957, which was an Act to consolidate and amend the law relating to the Municipal Government of Delhi was passed by the Parliament. This Act created the Corporation which has jurisdiction over an area of about 1346 sq. km. (520 sq. miles), out of a total area of 1476 sq. km. (570 sq. miles) of the Union Territory of Delhi.

4. PROCEDURE FOR MAKING AND AMENDING BUILDING BYE-LAWS

4.1 The power to make by-laws relating to buildings is derived from Section 481(1)(f) of the Act. The authorities are empowered to make

building bye-laws to provide for all or any of the following matters, namely:

- (1) the regulation or restriction of the use of sites for buildings in different areas;
- (2) the regulation or restriction of buildings in different areas;
- (3) the form of notice of erection of any building or execution of any work and the fee in respect of the same;
- (4) the plans and documents to be submitted together with such notice and the information and further information to be furnished;
- (5) the level and width of foundation, level of lowest floor and stability of structure;
- (6) the construction of buildings and the materials to be used in the construction of buildings;
- (7) the height of buildings whether absolute or relative to the width of streets or to different areas;
- (8) the number and height of storeys composing a building and the height of rooms and the dimensions of rooms intended for human habitation;
- (9) the provision of open spaces, external and internal and adequate means of light and ventilation.
- (10) the provision of means of egress in case of fire, fire-escapes and water lifting devices;
- (11) the provision of secondary means of access for the removal of house refuse;
- (12) the materials and methods of construction of external and party walls, roofs and floors;
- (13) the position, materials and methods of construction of hearths, smoke-escapes, stair-cases, latrines, drains and cess-pools;
- (14) the provision of lifts;
- (15) the paving of yards;
- (16) the restrictions on the use of inflammable materials in buildings;
- (17) the restriction on construction of foundation on certain sites;
- (18) the measures to be taken to protect buildings from damp arising from sub-soil;
- (19) the wells, tanks, and cisterns and pumps for the supply of water for human consumption in connection with buildings;
- (20) in the case of wells, the dimensions of the well, the manner of enclosing it and if the well is intended for drinking purposes the means which shall be used to prevent pollution of the water;
- (21) the supervision of buildings;
- (22) the setting back of garages and shops from the regular line of a street;
- (23) the construction of portable structures and permission for such construction.

4.2 An interesting point in this connection is that the Central Government [vide Section 480(1)] could make any Regulation under the Act

⁴ C.C. Notification No. F. 2(35)/50-L.S.G. dated 21-4-50.

within one year of the establishment of the Corporation and the Central Government exercising power under this general clause has framed the building bye-laws which came into force on 6th April 1959. The Corporation has the power to alter or rescind any regulation made by the Central Government, but no regulation made by the Corporation under the Act can have effect until it has been approved by the Central Government. Further, the Central Government (vide Section 483 of the 1957 Act) has reserved for itself supplementary powers in respect of bye-laws. The power to make bye-laws conferred by the 1957 Act is conferred subject to the conditions of the bye-laws being made after previous publication and in the case of such bye-laws being made by the Corporation, of their not taking effect until they have been approved by the Central Government and published in the Official Gazette. In fact, it means that the Corporation can make only those bye-laws which are approved by the Central Government and published in the Official Gazette. Further, [vide Section 483(2)], "the Central Government in approving bye-law may make any change therein which appears to it to be necessary". The Central Government has also the power to cancel any bye-law, which it has approved previously. Thus, it would appear that the powers of the Corporation in respect of building bye-laws or any other bye-law is subject to the controlling power of the Central Government, and without the approval of the Central Government or the Corporation just cannot make any bye-law for the citizens of Delhi.

5. IMPLEMENTATION OF BYE-LAWS

How exactly are these bye-laws implemented and what is the image of the Corporation which people carry? Recently we have carried out a survey of the Building Department and our tentative findings are as follows.

5.1 Current Procedure for the Sanction of Building Plans

The Municipal Commissioner is required to accept or reject the building plans submitted for approval by the citizens within a period of sixty days. Work relating to sanction of building plans has been decentralised amongst the 8 zones of the Corporation and all plans relating to non-residential areas and of plots above 300 sq. yds. are dealt with by the Headquarters staff, whereas plans for residential areas of below 300 sq. yards are dealt with by the respective zones. The period of sixty days, which has been given to the Corporation for accepting or rejecting the plans submitted by a citizen is a legal obligation. If a citizen does not receive any reply within this stipulated period, he can presume that this plan has been passed and he can proceed with the construction of his house, in accordance with the building plan which he has submitted. The Corporation, in 1965, issued a Pamphlet for the information of the Delhi citizens, called "Facts you must know about your building plans." The above pamphlet claims that the "building plans are mostly finalised in 15-20 days and are sanctioned often subject to certain corrections or production of documents." We wanted to test the validity of this claim, and so, have interviewed citizens, architects and officers of the Corporation on the following points:

1. The time lag between application and sanction of building plans.

2. The time lag between application and sanction of completion certificate and causes for delay.
3. Inspection and service facilities.
4. The extent of corruption in the Department.
5. The overall image the citizen has about the Department.

Though the Survey has not been completed as yet, it appears that the claim of the Corporation that building plans are mostly finalised in 15-20 days and are sanctioned often subject to certain corrections or production of documents is not correct. The experience of our respondents suggests that the Department takes anywhere between one to two months for sanctioning the plans. There are many reasons for this delay. The citizens, the architects and the officials are all responsible, although the officials have to be apportioned the major share of the blame. There is complete absence of any effort on the part of the officials to inform and instruct the citizens about the documents to be presented and other formalities to be observed. The architects are seldom informed about the latest amendments carried out in the bye-laws. According to the officials, the delays occur because the plans submitted by the architects do not comply with the bye-laws and they are not accompanied by all the necessary documents. Also, the applicants do not carry out the corrections and hence, the delay. But, one major factor in our opinion is the presence of unauthorised architects and also some licensed architects whose professional competence is open to doubt. It is often they who submit defective plans. We are unable to explain how the Municipal Authorities have granted licences to such people. In fact, many of the malpractices prevailing in the Department can be traced to an unholy alliance between inefficient architects and the corrupt staff of the Department.

5.2 Completion Certificate

A citizen is required to apply for the completion certificate within a month after the completion of the building for permission to occupy the building which he has constructed. He cannot occupy or permit to be occupied a building which he has constructed until permission has been granted by the Commissioner. In case the Commissioner fails within a period of 30 days after the receipt of the notice to communicate his refusal to grant such permission, the permission will be deemed to have been given. Here again, our findings suggest that the authorities do not observe the time limit set by themselves and there is inordinate delay in the issue of Completion Certificate. According to many officials, there is delay because the houses are not constructed exactly according to sanctioned plans. Many people are bent upon encroaching the set-backs which is not permitted by bye-laws. In all these cases, Completion Certificate is held up for want of removal of such encroachments. Sometimes the sanctioned building plans are not available and this causes delay. In many cases, the deviations are not compoundable as per policy and as penalties for compounding deviations are heavy, people try to delay as much as possible either in the hope that building bye-laws will be relaxed or they could get over it through pressure. Also, the officials feel that the staff of the Department is overworked, and hence, the delay. This is a

matter for further investigation and rationalisation of work procedures.

5.3 Inspection

The most important criticism which is made of the bye-laws is in regard to their enforcement. To ensure that the bye-laws are complied with throughout, the whole process of erection calls for very frequent inspections of a builder's work by the local authority and on grounds of expense, lack of personnel and failure to keep adequate records, the authorities have never found it possible to make the number of inspections necessary to enable them to enforce the bye-laws to the full. They are more than happy to collect fees as building tax but are extremely negligent when it comes to rendering service. The house builder is left to fend for himself for advice and guidance during the course of construction. A majority of our respondents have told us that even serving a notice on the authorities as required under the bye-laws, does not lead to any worth-while inspection either at the commencement stage or during the course of construction.

5.4 Malpractices

While it is difficult to estimate the extent and magnitude of malpractices in the Department, it cannot be said that it is not prevalent. Both the citizens and the architects are ready to level charge against the officials whereas the officials tend to play down the extent of the lapses. Malpractices are resorted to at the stage of sanction of building plans but at the time of issue of completion certificates, it assumes serious proportions. Seldom do house-builders conform to sanctioned plans and our respondents have admitted to making deviations deliberately. It is true that it is difficult to conform strictly to sanctioned plans. The Corporation authorities recognising this fact permit certain types of deviations but impose some penalties, for regularising them and these are termed as compoundable deviations. But in the absence of a fool-proof method to assess the extent of penalties chargeable for such deviations, the house-builders find themselves completely at the mercy of the staff. The system followed at present by the Department in assessing penalties appears to be arbitrary. It is often the Building Inspectors, who are least competent to do this kind of job, who judge what are compoundable and what are not, and assess the penalties. The Department also does not intimate item-wise the type of deviations made and penalties chargeable for such. This gap in administrative communications offers alluring possibilities to officials to resort to malpractices. Ultimately, a citizen gets his completion certificate and also a receipt for the penalty paid. Needless to say that there is a difference, which varies depending on the status of the house-builder, the type of locality and the extent of deviations made etc. The Corporation is thus deprived of its legitimate revenues by not clearly specifying and communicating the rules and regulations.

5.5 Training

The administration of Building Codes presents several problems. One refers to code-interpretation and the other pertains to ensuring consistent application of code provisions. This job is often assigned to building inspectors who are non-tech-

nical persons and they make decisions which are beyond their competence. Thus, the architects resent their building plans being scrutinised by unqualified Building Inspectors. There are also complaints that the Assistant Engineers in various zones follow their own interpretation of the bye-laws depending on their whims and fancies. Our findings also suggest that the various officials of the Department have not received any training for the job they are entrusted with.

5.6 What Type of Image

A very disturbing finding of our study is the alarmingly poor image of the citizens about the Department. An analysis of our data also suggests that there is a wide divergence in the mutual perceptions of citizens and officials on matters like integrity, competence and behaviour. Practically, no attention is paid to the public relations aspect by the officials. The citizens and architects on the one hand and the officials on the other seem to be mutually antagonistic to each other and instead of cooperation, we found suspicion, distrust and mutual discrimination prevailing.

6. SUGGESTIONS FOR IMPROVEMENT

The following tentative suggestions are made in the hope that they will contribute to some improvement in the working of the Department :

- (i) The Department issues invalid notices to all the applicants as a matter of routine even when the plans are prepared according to bye-laws. Such notices should, in future, be issued only when there are some serious defects in the preparation of the plan. If the plans are not accompanied by proper documents, they should be rejected outright at the submission stage itself.
- (ii) There is an urgent need to inform the citizens about the procedures and formalities they have to observe. The Departmental pamphlets designed for public reading should not only be readily available but should be written in terms understandable to the layman with the qualities of clarity, simplicity and directness and with a format that would make people want to read them.
- (iii) There is a need for setting up an information cell in each of the zones and it will be the duty of this cell to keep records of the status of the plot and the various permits or sanctions which might have been issued by the different departments of the Corporation in respect of this plot.
- (iv) A citizen should be required to apply only at one particular point for all the things which he will require in connection with the construction of his house. For instance, if he applies for sanction of building plans, a part of the application should also deal with water connections, power connections or stacking charges, etc. Thus, the citizen should be required to submit one application and not numerous applications to different Departments of the Corporation.

- (v) The effectiveness of building regulations ultimately depends in a large part upon the success of inspection programme. Such successful enforcement requires education and persuasion as well as compulsion. The inspection duties should be performed as a matter of routine and not only when the citizen serves a notice. The inspecting officials need to be trained in public relations techniques. Since most of the inspections are carried on private premises, it is particularly important that the rights and feelings of citizens be given particular consideration.
- (vi) Regulatory administration requires quite different techniques from those used in managing the service functions. There is one underlying principle however which is common to both fields of administration, primary reliance for securing results must not be placed on the use of authority or the threat of punishment. The major objective is to see that the regulations are observed and not to see that the citizens are punished for failures to observe the regulations. Use of authority is only one of several means for securing the desired result. Since the Corporation staff does not give guidance, deviations which are made during the course of construction may be viewed leniently. Such of the deviations from the approved plan as could have been approved by the Corporation, had these been included in the original plan, may be exempted from levy of penalty. Penalty should only be levied where the authorities are satisfied that by deviating from the approved plan, the house-builder has gained direct or indirect advantage. When intimating the amount of penalty to be paid, the house-builder should be supplied with an item-wise list of deviations he had made and the penalties chargeable for each. An aggrieved house-builder should have avenues open to him to seek redress. In this connection, there is need for a reliable appeal machinery where a citizen should have the right of appeal within a specified time.
- (vii) There is an urgent need for the officials, the architects and the house-builders to get together and evolve some methods to function harmoniously. Perhaps, a critical review of all procedures may be attempted by the parties concerned to see if they cannot be simplified or made less offensive.
- (viii) The Executive Engineer and Zonal Engineers should hold either quarterly or half-yearly meetings with registered architects.

Such meetings will contribute to understanding each other's difficulties and may pave the way for working in a spirit of mutual co-operation.

- (ix) Finally, the officials of the Department should pay more attention to their behaviour towards the public and made concerted efforts to improve the existing poor image of the Department among the public.
- (x) There are undoubtedly practical difficulties in enforcing building bye-laws and realising this, efforts have been made in the United Kingdom on voluntary basis to raise the general standard of house-building with particular reference to design, workmanship, materials. To this end, the National House Builder's Registration Council has been set up. This is an independent certifying authority representative of various interests including the Royal Institute of British Architects, the Royal Institute of Chartered Surveyors, the Building Societies Association, the Town Planning Institute, Builders, Building Operatives, County, urban and rural councils. This Council achieves its object by:
- (a) procuring the preparation and adopting of modern specifications acceptable to all interests represented on the Committee.
 - (b) maintaining a register of builders willing to submit all houses they build to the periodical inspection of the Council's technical staff and advisers, during construction.
 - (c) Issuing in respect of each house inspected and approved a certificate of compliance with the Council's specification.
 - (d) Requiring the builder to give a guarantee to make good, free of cost any defects reported within a period of 2 years, arising from non-compliance with the specifications.
 - (e) Indemnifying any aggrieved person against loss suffered because the building in respect of which a certificate is issued by the Council does not conform to the standard prescribed.

7. There is a need to make efforts to set up in our country, a similar organisation fully representative of various interests including Indian Institute of Architects, the Town Planning Organisation, Indian Standards Institution, the National Buildings Organisation, the Building and Research Institute at Roorkee, House Builders and building contractors and local authorities.

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