

**REPORT**

OF

**The Committee appointed for Regional Plans**

FOR

**Bombay-Panvel and Poona Regions**

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PART I

**INTRODUCTION AND PRINCIPLES AND PROBLEMS  
OF REGIONAL PLANNING**

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## CHAPTER I

### INTRODUCTION

#### **Appointment of the Committee**

1.1. *Terms of Reference.*—Under the Third Five-Year Plan of the Central Government, central assistance is made available to the State Governments for preparation of Master Plans of metropolitan cities, State capitals, industrial centres, resource regions, etc. The work of preparing regional plans for the metropolitan regions of Bombay and Poona was sanctioned by Government of Maharashtra under the above scheme and was entrusted to the Town Planning and Valuation Department. Two small branch offices at Bombay and Poona respectively were created for attending to the preliminary work.

1.2. The Board of Urban Development under the Chairmanship of the Minister of Urban Development considered the question of Regional Planning in Maharashtra during their second meeting held on 20th and 21st February, 1965 and decided to recommend the appointment of a committee for formulating the broad features of metropolitan plans and making recommendations for the establishment of metropolitan authorities.

1.3. It is in this context that the Government of Maharashtra, by its Resolution in the Urban Development and Public Health Department, No. TPS-3664-M, dated the 10th March, 1965 appointed a committee with the following terms of reference :—

(a) to formulate broad principles of Regional planning for the Metropolitan Regions of Bombay-Panvel and Poona ; and

(b) to make recommendations for the establishment of Metropolitan Authorities for preparation of and execution of such Plans.

1.4. Government was pleased to appoint the following members to work on the Committee :—

- (1) Dr. D. R. Gadgil, Director, Gokhale Institute of Politics and Economics, *Poona-4*. (*Chairman*).
- (2) Shri S. V. Chavan, the Commissioner, Poona Division, *Poona* ... (Member).
- (3) Shri J. H. Patwardhan, the Commissioner, Bombay Division, *Bombay* (Member).
- (4) Shri P. G. Kher, M.L.A., *Bombay* ... (Member).
- (5) Shri W. G. Pathak, Deputy Secretary to Government. Urban Development and Public Health Department, *Bombay*. (Member).
- (6) Shri B. T. Talim, Director of Town Planning, M. S., *Poona*... (Member-Secretary).

1.5. The Committee was authorised to consult the Secretary to Government, Industries and Labour Department, Bombay and the Industries Commissioner, Bombay, the Director of Education, Poona, the Director of Public Health, Poona, the Director, Bureau of Economics and Statistics, and other officers whenever necessary. Under Government Resolution, Urban Development and Public Health Department, No. TPS-3664-N, dated the 27th March, 1965, the Commissioner, Poona Municipal Corporation, Poona and Shri S. M. Y. Sastry, Deputy Municipal Commissioner, Bombay Municipal Corporation, Bombay, were added as members of the Committee and under Government Resolution, Urban Development and Public Health Department, No. TPS-3664/N, dated the 6th June, 1965, Government was further pleased to appoint Shri M. V. Rajwade, Secretary to Government, Industries and Labour Department also to work on the Committee as a Member. Shri N. M. Jog, Executive Engineer, Water Resources and Irrigation Circle on behalf of the Superintending Engineer and Shri K. S. Ramu, Deputy Chief Engineer, Maharashtra State Electricity Board, Poona, were present by invitation at a number of meetings.

1.6. *Meetings of the Committee.*—The first meeting of the Regional Planning Committee was held on the 3rd April, 1965 at the Gokhale Institute of Politics and Economics. Six more meetings were held on 25th June, 24th July, 7th August, 28th August, 18th September and 9th October, 1965 respectively when, in addition to notes and basic maps prepared by the Directorate of Town Planning, the Committee also considered notes prepared by

Shri M. V. Rajwade, Secretary to Government, Industries and Labour Department, and Shri S. M. Y. Sastry, Deputy Municipal Commissioner, Bombay Municipal Corporation. The Poona Town Planning Study Group at the Gokhale Institute of Politics and Economics had prepared a very useful report on the proposals for the Poona metropolitan area and this formed the basis for discussions about the Poona Metropolitan Region. The problems of Regional Planning were broadly examined by the Committee from various angles as required by the terms of reference and several aspects of the question were considered and examined in detail. Subsequently the Chairman prepared a statement attempting to present the results of the discussions in a connected manner. This Statement was reviewed by the Committee in the 7th Meeting held on 9th October, 1965. A synopsis of the draft report was discussed in the 8th meeting held on 21st October, 1965.

#### **Consultations**

1.7. In addition to the Superintending Engineer of Water Resources Circle and the Deputy Chief Engineer of the Maharashtra State Electricity Board, the committee had also invited Shri V. K. Bakre, Special Consulting Surveyor to Government charged with the scrutiny of the Development Plan of Greater Bombay to be present in the 6th meeting when proposals of the Bombay Development Plan were generally explained by Shri Bakre who also offered his views on the problems of Greater Bombay and their likely impact on the surrounding region. Reports on Shri N. V. Modak's proposals for the development of the Bombay Region and the proposals contained in the article by the Architects Sarvashri Correa, Mehta and Patel were also considered. Shri Modak also had a discussion with one of the members of the Committee and Sarvashri Mulk Raj Anand, Correa and Patel had discussions with the Chairman. The Committee also considered another report on the Interim Report on the Development Plan for Greater Bombay prepared by the Expert Panel deputed by the Town and Country Planning Organization (Government of India, Ministry of Health).

1.8. The report of the committee has been divided into 6 parts. The first part contains the introductory Chapter and the Chapter on the principles and problems of Regional Planning. The second and third parts discuss the application of these principles and the main problems arising therefrom in relation to the Bombay-Panvel and Poona regions respectively. The fourth part contains our recommendations regarding the establishment of metropolitan authorities and the fifth and sixth parts respectively contain summary of our conclusions and recommendations and the tables and appendices.

1.9. The Committee would like to place on record its appreciation of the service of its Member-Secretary Shri B. T. Talim and the staff of the Town Planning Department under him. We would particularly refer to the assistance given by Shri J. G. Keskar in the drafting of the report and to Sarvashri V. D. Kulkarni and U. K. Koundinya who helped him. We are thankful to the authorities of the Gokhale Institute for allowing the committee the use of its halls for meetings and of its library for reference purposes. We are thankful to the Poona Metropolitan Study Group and to the members of the staff of the Institute connected with Poona Metropolitan Studies who gave assistance with material for drafting. We are also thankful to Shri V. K. Bakre, Special Consulting Surveyor to Government; Shri K. S. Ramu, Deputy Chief Engineer, Maharashtra State Electricity Board and Shri N. M. Jog, Executive Engineer, Water Resources and Investigation and Sarvashri N. V. Modak, Mulk Raj Anand, Correa and Patel for the help they rendered to the Committee.

## CHAPTER II

### PRINCIPLES AND PROBLEMS OF REGIONAL PLANNING

2.1. Planning of the development and regulation of land use and of the location of population and of economic activity has necessarily to be undertaken at a variety of levels. At the national level such planning is mainly concerned with the system of major communications, the distribution of land use as between forest, pasture, arable, national parks, etc. and with the location of the major areas of concentrated industrial and urban development. The intermediate or the regional level is the proper unit for socio-economic planning. The main things to be planned for at the regional level include the distribution of industry and population, the allocation of areas for various types of land use, the establishment of neighbourhood units with their facilities, the determination of the main communication system, the alignment of public utilities and the setting up of new towns and the major town expansions. At the bottom is the detailed work of city and town development plans whose main function is the control of design and layout. So far, in India some attention has been paid only to the last.

2.2. Experience has indicated that the problems of metropolitan growth cannot be successfully and satisfactorily resolved if physical planning restricts itself to the area within a city or within administrative limits of the metropolis. It has, therefore, become increasingly necessary to add 'Regional Planning' to 'Town Planning'. In the broadest sense regional planning aims at defining the physical framework within which future developments should take place and a series of regional plans constitute together the total frame for the country as a whole. The function of a plan for a metropolitan region is to plan for a region of a special type. Such a region has a core which is highly urbanised, has intermediate areas with lesser degrees of urbanisation and may have predominantly agricultural and rural areas at the periphery. But the mutual socio-economic dependence of the metropolitan urban core and the outer semi-rural or rural areas is so great that planning for total operations of the urban core alone is rendered difficult if not meaningless. This is especially emphasised when one looks to possible future developments. A metropolitan regional plan thus provides the physical framework for a region large enough to contain within itself the major requirements of current operations and future development of the very large metropolitan urban core, but small enough to make practicable the planning of an integrated area unit.

2.3. What makes regional planning especially important at this juncture is the fact that the State of Maharashtra has been passing, and will continue to pass during the next decade, through a phase of rapid urbanization and industrialization which will bring about a considerable shift in occupations and job-locations especially in the industrial belts of the State. Planning decisions taken to-day will thus have far reaching consequences and the absence of a comprehensive regional outlook could greatly prejudice balanced territorial development in the future. Rational decisions in respect of locations of population and job centres, services, amenities and utilities, etc. in a well thought out manner are immediately necessary to prevent sporadic, *ad hoc* and mutually inconsistent developments which will prove highly undesirable from the long range point of view. Development plans and Town Planning Schemes prepared under the provisions of the Bombay Town Planning Act, 1954, may help to control land uses within municipal limits, but such development plans have a tendency to work in isolation and they inevitably leave unplanned the important peripheral areas where haphazard developments are most likely to crop up, nullifying the effects of zoning and land use control within the area of the Development Plans. Moreover, as such Development Plans are prepared only for the restricted urban areas they fail to take into account the close connection of the urban area to its rural environment. As Karl Otto said, "the urban nucleus and its rural environments cannot be harmonious unless planning extends beyond the urban perimetre to a much larger vital area, to the geographical and economic regional entity, in which the interests of the countryside and those of the urban nucleus could be put on the same Plane". Prof. Abercrombie in his paper on the planning of Industrial Regions has very pertinently observed that "regional planning especially for industrial purposes, is something which is much more definite than merely extended and combined Town Planning Schemes under the Town Planning Acts. Though

not going into so much detail, regional planning schemes must go into aspects quite outside legal town planning." The co-ordination of industries with other economic activities, the attempt to introduce a logical order into decisions regarding industrial locations and other similar aspects can only be thought of and provided for in a regional planning framework.

2.4. The scope and content of metropolitan regional plans become clear from the above. Such a plan would primarily have to indicate the most desirable manner in which the distribution of population of the region present and future should be brought about in its various aspects of living and working. The plan has, therefore, to concern itself with patterns of land use, systems of communication, location of centres of activity, provision of public utilities and amenities and socio-economic overheads and services. All such planning implies acceptance of certain socio-economic objectives.

2.5. The broad socio-economic objectives in the present context may be derived from the directives of policy incorporated in the Constitution and the statements made in national plans of development. Two aspects of these are relevant to metropolitan regional plans. Firstly the emphasis on the provision of minimum standards of living, including housing, and health and education for all. Secondly, the insistence on wide dispersal of economic activity and the prevention of its concentration. The first indicates that in drawing up development plans, present and future, full account must be taken of the basic needs and amenities to be provided for the entire population; the second indicates an over-all limit to size of population and extent of economic activity concentrated within an area or region. The last consideration is reinforced by the undesirability of concentrating a great deal of economic activity valuable to the nation in one vulnerable area or region.

2.6. The successive Five-Year Plans have spelt out in specific terms the implications of constitutional directives. The Third Five-Year Plan places the following among the main ingredients of urban development policy :—

"(i) as far as possible, new industries should be established away from larger and congested cities.

(ii) in the planning of large industries, the concept of region should be adopted."

2.7. The Plan also indicates certain minimum directions in which action should be taken during the Third Plan so that, for the future at any rate a correct course is set. Among these are : "(i) control of urban land values through public acquisition of land and appropriate fiscal policies ; (ii) physical planning of the use of land and the preparation of Master Plans".

2.8. Plans for particular regions have to be considered on the background of these general policy directives and objectives. The wide dispersal of industrial activity is an overriding aim to which careful attention has to be paid in planning development of any region. The establishment of industries in the backward and the less developed regions can be brought about only by positive policy of government in relation to these areas. In relation to the highly developed areas national objectives reinforce the need arising out of internal situation of these areas to decongest and to redistribute activity within the wider region.

2.9 The industrial development permitted and to some extent encouraged by Government has led to Bombay City being connected to adjoining towns right upto Virar, Karjat and Panvel with continuous urbanisation. The ills created by the formation of such conurbations are well known. The over-concentration of opportunities for employment, wealth and power in few conurbations not only creates difficult problems in their own area but is also responsible for economic depression in other regions. Thirty per cent. of the tertiary employment and 66 per cent. of the State's factory employment is concentrated in Bombay. About 75 per cent. of the value of industrial output and 84.5 per cent. of electricity consumption in the State is accounted for by Greater Bombay. In fact, if Greater Bombay and the Bombay-Thana complex are excluded, Maharashtra may be said to be industrially as backward as any other part of the country.

2.10. In the rapid industrialisation of Maharashtra, planning policy should lead to curbing the formation of such conurbations on the one hand and on the other to creating conditions for development of depressed areas. It will be necessary to take bold measures

in relation to planned decentralisation and wider dispersal of employment potential throughout the State. This will help in saving the deteriorating situation in Bombay conurbation and in better planning of growing cities like Poona.

2.11. The planned dispersal of employment potential will have to be considered in the perspective of 'Regional Planning'. It will be necessary to divide the State into suitable economic regions and study the local conditions regarding water, land and other requirements for proper urban growth. Allocation of industries and other factors of employment potential should be dispersed among the regional units with the aim of creating urban centres with limited population and of suitable size.

2.12. The distance between two urban centres in regional planning needs careful thought. There should be a rural belt between the two urban centres, wide enough to control ribbon development. At the same time, the rural belt should experience prosperity due to nearness of urban centre. A fair and wide distribution of urban centres of limited population surrounded by a rural area dependent on the 'mother city' should be the aim of economic planning in the State. It is thus necessary that the policy of industrial development should be closely related to that of urban and regional planning.

2.13 It would be necessary to provide better transport and communication facilities together with some basic socio-economic overheads in all regions for proper development. This will, no doubt strain resources. But it will, in the ultimate analysis, not only bring about healthy and widespread development but also prove less costly through saving of funds sunk in maintaining even minimal conditions in large conurbations. It is obvious that such even development will come about only when the entire area of the State is brought under a series of regional plans.

2.14. Where, as in large metropolitan centres like Bombay, the results of neglect and lack of regulation are already visible in a number of highly undesirable developments the regional plan has to have a double bared objective. This is that of forestalling the drift into chaos in the yet undeveloped area and the gradual reconstruction of the developed areas with particular attention to the blighted or overcrowded section and to improved circulation. Both these aims have to be achieved through one integrated plan frame. Before considering the contents of a plan with this double aim it may be useful to set down briefly the major evils from which cities like Bombay are presently suffering and the future dangers which the regional plan should seek to avoid.

2.15. The existing urban Bombay complex could be classified as a conurbation which is a distinctive product of modern industrialism. It is dominated by Bombay Island and has grown steadily northwards absorbing in its path smaller communities. At its southern end are the main business, shopping and entertainment areas and the transport terminals. A large proportion of industries, many housed in antiquated premises and with obsolete plant and machinery, is located near port and the railways. Inter spaced with industry are rows of sub-standard dwelling and slums or slum like areas packed densely on the ground.

2.16. The inner area is thus largely an unsatisfactory mixture of cramped and antiquated buildings with too many houses on the ground and too many people in the houses with almost complete lack of sunlight, privacy and opportunities for recreation. A close connection between these conditions and a high incidence of ill-health and crime needs hardly any emphasis.

2.17. The enormous pressure of economic activity and of residence on a limited land area results in extreme congestion and overcrowding in residential accommodation, in the development of slums, hutments, shanties and such like degrading phenomena, in the increase in the number of pavement dwellers and in a total lack of open space. It leads to cramping and to insufficiency of space for all activity and to high traffic congestion and transport difficulties. The lack of space and congestion push up prices of land extremely high and make the provisions of adequate housing for work or living or the provision of open space or of community services like education very costly. The high cost of land, the large numbers living and working within a restricted area with its accompanying social degeneration increase the demand for and the cost of services and utilities like police protection, water, drainage, roads, etc. Adverse conditions within the central areas lead large numbers to seek accommodation outside, i.e. in the suburban areas.

2.18. Industry, liberated from its earlier dependence on central site by development of road transport also re-appears in places in these areas. Beyond this comes a zone of half town, half country. This zone is being continuously encroached upon and urbanisation becoming established along the lines of communication. As the pressure of space along these



lines becomes more intense, rapid and extensive growth in the peripheral region, where land at first is relatively cheap, becomes evident. The original city of Bombay—the Bombay Island now accounts for only 15 per cent. of Greater Bombay area, though it contains 67 per cent. of the total population.

2.19. The drawbacks resulting from such an urban sprawl are becoming more pronounced. The transport problem is getting worse. More people are travelling longer distances, to their place of work. As rising number seek to travel, while industrial traffic continues to expand, traffic conditions in the large conurbation worsen cumulatively. The increased number of motor vehicles leads to mounting congestion and increasing paralysis of the streets. The speed of vehicles falls steadily and the number of accidents are on the increase. With traffic engineering techniques e.g. traffic lights, one way streets, etc. efficiency may increase, but the traffic also increases, and the relief becomes only temporary.

2.20. In inner areas, any substantial road improvement is very slow, and an extremely costly business. The mounting traffic congestion is a potent source of extra costs and leads to delays and the long journeys of workers are responsible for much absenteeism and ill-health. The sprawl has also other social drawbacks ; it leads to impoverishment of social life in the functionless suburbs.

2.21. The urban sprawl characteristically proceeds in the form of ribbon development. This method of development takes the line of least resistance. All activities are most easily located along the existing communication lines. In Bombay, such development is proceeding almost interminably and will soon reach the Ghats. Similar phenomenon in the Poona Region is also observed and the development along the Bombay-Poona route is likely to be continuous from Poona to Lonavala, unless checked by positive measures. Such type of development creates a series of grave problems. In the early stages of development (as in the case of the suburban area of Bombay) the area along the communication routes is used intensively by industries and other profitable activities. The area in the interior is gradually filled up with slums, commercial activity and housing, etc. in a haphazard manner. Relationship between house and work, and other amenities cannot be maintained and the mixture of industries and housing makes for unhealthy living conditions. Even where the ribbon development is in its early stage (as in the case of extended suburban area of Bombay) it creates difficulties in the proper preparation of a development plan as location of industries along the main route is in most cases, quite unsuitable in the plan of a total township.

2.22. Ribbon development takes advantage of the road access provided mainly for highway traffic and consequently creates grave problems of traffic. The local traffic generated by the developments along the road, tends to overload the road and the frequent stopping, turning, parking reduces road capacity. The presence of pedestrians leads to traffic delays and traffic accidents, and greatly hampers the speedy highway traffic. Other disadvantages of ribbon development are the impracticability of having any grouped neighbourhood centre easily accessible from all residences, and of the planning of neighbourhoods with proper land-use pattern. If a proper relationship between different users is to be achieved in a township or a neighbourhood, it is essential that every user is confined to the allotted zone and does not intrude through ribbon development on other zones, thus leading to badly mixed land uses. Ribbon development means more street mileage for a given number of factories or houses, entailing higher expenditure for maintenance, lighting as well as construction. Longer streets involve, moreover, greater length and thus greater cost of drains, sewers, water pipes (at greater depth due to continuous fall), electric mains and telephone wiring. It also entails an extension of police, and postal service.

2.23. For providing access to the factories, it means provision of transport service, with numerous halts, which add to the cost of transport and increase the time spent in a trip. It increases the commuting distances adding to the hardship of the workers who have to pay for the ribbon development of workplaces in terms of travel charges, and fatigue caused by long, strenuous journeys. It further means, encroachment on valuable agricultural land. Haphazard, patchy urban expansion is likely to eat up farm land (often valuable farm land which provides the city with its milk, vegetable and fruit supply) far faster, than is necessary and this also leads to speculative rise in prices of adjoining lands.

2.24. Other problems associated with ribbon development are the difficulties of administering what is fundamentally a single urban area through numerous municipal jurisdictions and rural local bodies. Attempts are made to control ribbon development

by preventing building development along the road frontage, which, however, does not succeed in preventing such a development. The only effective measure is to control all development under comprehensive and universally applied town and country planning legislation.

2.25. The Regional Plan for the Bombay Metropolitan region has to address itself to the central problem of stopping further deterioration and of gradually improving conditions within the city. The plan for achieving this will be closely co-ordinated with and dependent on the plan of development of the outer areas. The total Regional Plan will determine the pattern of major land use and indicate the main industrial areas and residential areas and their mutual interrelation. The land use plan will set forth restrictions on density of land use in terms of population or building bulk and will define areas to be reserved for conservation, agriculture and recreation. The reservation of green belts and protection of areas of natural beauty will be provided for. The Plan will establish the location of neighbourhood units with their special facilities. The plan will deal with over-spill matters and will chart the relation of the city to the region and indicate its integration with any satellite communities that are set up. This will include the siting of new townships and their proper spacing within the region. The plan will determine the alignment of main roads and other means of communication, chart the major routes of mass transportation and present an integrated view of all lines of communication for the circulation of people and goods within and about the region. It will indicate how the provision of major public utilities and services for the people in various parts of the region will be made.

2.26. It may be useful to concretise in some measure the brief description of the contents of the Plan given above. The Regional Plan for Bombay area will have to achieve the following objectives. The first and foremost need is to improve the working and living conditions in the Bombay Island. For this, it is necessary to lessen the concentration of economic activity in the Bombay Island. This will mean dispersal of industries, particularly heavy industry and decentralization of the administrative activities and other activities which are not vitally linked with the port or the financial centre. These could be shifted either to the mofussil area or to the mainland depending upon the nature of the economic activity and the necessity to keep close relation with Bombay Island. Next it is necessary to see that the area vacated by the factory or the offices is not occupied by other such activity. The Plan for re-development will have to show the proposed use of different areas and arrangement to reserve that area, through acquisition or other means, must be made. The re-development plan will have to be so framed as to reduce the mixed land use of industry, cattle, godowns, etc. with housing. The heavy pressure on dock and traffic termini located on the island need also be reduced. The alternative port at Sheva-Nhava may help in this matter. Possible use of waterways for transport of goods around the island needs to be considered; this will help to reduce the pressure on the roads. Removal of traffic termini from the island is also worth considering. All these measures will reduce the road congestion to a certain extent. Still the pressure of traffic will be large and measures to improve the traffic pattern must be taken. To reduce the residential congestion in the island planned shifting of workers, simultaneously with the shifting of industries or other economic activities will be necessary. Another big single task is of slum removal. In the initial stages projects of improvement of the slums could be undertaken and by stages the slum-dwellers could be shifted to suitable housing. Provision of minimum open space for schools and residential areas must be made in the development plan.

2.27. For the suburban area the main problem is to reduce the commuting and to establish relationship between residence and work place, schools, shops and other amenities. The suburban area should not be used as mere dormitories but must be developed as a series of neighbourhood units, with all amenities. This will also help to relieve the pressure on the central city area and improve the living conditions of the residents of the suburbs who would be able to lead a full city life without commuting. The ideal situation would be for people to live within reasonable distance of their work but not in such close proximity that their living conditions are prejudiced by it. Such ideal is difficult to achieve, particularly in the existing town due to many factors like immobility of certain industries, variability of occupation in the same family, topography of the area. Nevertheless attempts will have to be made in preparing the re-development plan of the suburban area to approximate to the ideal as far as possible.

2.28. The area of the mainland could be used for accommodating the industries and other centres shifted from the island together with the residential areas and other incidental activities and services. Suitable sites at reasonable distance could be earmarked for developing townships to receive the overspill from the island. The aim of the development of the mainland should be to create a multinucleated metropolitan region with a view to making it economic to operate, providing working and living in proximity, conducive to responsible social and political participation. With modern transportation and electric power such territorial organization, with housing, industry, recreation and agriculture filled in a co-ordinated, interrelated and harmonious pattern is possible, with the historic city centre remaining as the focus of managerial, financial and specialized commercial activities. The character of the area in between the new urban centres will have to be retained strictly as agricultural. The green area will be useful for cultivation of perishable agricultural commodities demanded in large quantities by the urban areas. It will also provide space for sewage and garbage disposal in large quantities. The latter use can be profitably coupled with the former. The provision of recreational facilities to the urban dwellers would be possible in this belt. Such areas in between the intensively developed urban areas are essential to break the monotony and drabness associated with urbanisation and provide a welcome relief. The regional plan must provide for systematic development of these areas making available irrigation, power, communication, etc. Unless strong measures are taken to make agricultural and allied activities in this area economic, these areas will be turned quickly to non-agricultural use. Unless planning and control is of high order, the mainland area will degenerate into ugly urban sprawl. It was noted earlier that ribbon development is already evident in certain parts of this area and unless development plans are speedily prepared and enforced the same phenomena will continue and the evils will be further aggravated.

2.29. All the components of the plan will together be directed towards the fundamental objective of creating an environment in which people could conduct their activities with economy and efficiency and attain well being and contentment. Also, as the plan seeks to be practical and operational it must spell out in detail and in a realistic manner the policy decisions and the agencies and instruments required for the implementation of plans and their continued operation.

2.30. It might not be out of place to devote attention at this stage to the basic problems of land acquisition and land values, and of measures related to shifting of industries. The question of land resources becomes progressively insoluble with increasing urban growth. With the increase in wealth and population, land values automatically rise up. Individual plots increase in value as a result of general community influence. The growth of commerce forces up land values in the city centre and the demand for residences raises values at urban periphery. These increases are often very spectacular. For executing any development plan the required land at the required place must be secured; otherwise the plan cannot be put into action. For redevelopment of blighted areas, for remoulding the core of the city the problem of land use has to be viewed as a whole, so also if a new town development is to be carried successfully; all these involve acquisition of large areas of land or at least full control over land-use by public authorities. Thus unitary ownership of land on a large scale has become essential to successful planning. No comprehensive treatment of decayed inner areas for instance is possible if land holding is split among a multitude of small owners. Control by an external authority, however strong it may be in theory, is no substitute for ownership of areas. However, the problem of acquisition involves the intractable problem of compensation and betterment. As planning operates by restricting or preventing development in certain areas and stimulating it in others, it inevitably leads to shift of land values. The more comprehensive the planning greater is the shift in values and this in turn increases the size of both the compensation bill payable to one set of owners and of the betterment charges receivable from others. Unless betterment is collected, the compensation bill tends to be too large, to be within the means of state finance and this leads either to curtailment of scope of planning or to lowering the level of compensation. The latter course is bound to be unacceptable to the owners and may encounter legal difficulties.

2.31. A permanently acceptable basis for land acquisition is one that is fairly closely related to market values. To overcome the difficulty of paying inflated prices due to planning and development activities, it is necessary to buy land, on a large scale in advance of requirement in the undeveloped regions. The creation of a development authority with

adequate legal powers is necessary before such operations can be undertaken. Public ownership of land will greatly facilitate planning and is not incompatible with private development which could be carried out on leases, which are long enough to import a sense of security and pride of ownership.

2.32. In areas where development has begun large scale purchase of land by public authority may not prove practicable. In such developing regions a method of pooling of land seems most suitable. The land under different ownership can be pooled by the public authority and layout as per plan prepared. The land required for public purposes, viz. roads, markets, parks, etc. is then retained by the authority and after providing these amenities land is given back to the owners in proportion to their original holdings and land use as per plan is enforced as is being done in the case of Town Planning Schemes prepared under the Bombay Town Planning Act.

2.33. In developed areas, large scale acquisition is beyond the means of the resources of the State. In such a case, a dual approach of payment of compensation and collection of betterment levy could alone make public operations possible. Only if effective collection of a betterment levy is introduced, does the burden of compensation become bearable. The betterment levy may also have some effect in keeping down land prices.

2.34. This leads to the question of the type of betterment levy that can be imposed. It is relatively easy to impose a betterment levy when this is connected with grant of permission to develop any property for changed or more intensive use. In this case the increase in value resulting from such permitted development is collected in part by the authority granting permission in the form of a development charge. However, a large proportion of property owners benefit from growth of cities and of public expenditure even when they undertake no fresh developments. The problem of mopping up a part of this unearned increment in value accruing to owners has not yet been very satisfactorily solved. However, serious attention needs to be paid to it, especially in an extreme case like that of Bombay.

2.35. For restricting and prohibiting intensive development in highly developed areas and further to encourage shifting from these areas, several fiscal and other measures would be necessary. One means would be a graded system of rating. This could be so used as to secure deliberately the kind of development that is wanted. Differential valuations could be introduced so as to lower rateable values applied in areas scheduled to receive overspill and new development and higher values applied in areas of congestion.

2.36. Other measures for controlling development in the central areas would be strict enforcement of land-use plan through suitable permits or licensing system. This could be coupled with a system of special charges. If a particular redevelopment project is permitted in the zone, a charge per square metre of built-up space is levied, the highest rate being imposed near the central business district. In addition, according to zones, control of bulk of building, prescription of suitably low F.S.I. to which is added a limit on tenements per acre per district can be imposed. All these measures coupled with imposition of differential rates and a suitable method of collection of betterment levy may make possible the execution of development plan by stages in the highly developed areas.

2.37. It is also necessary to have some measures for controlling and directing the location of industry and other major activities with high employment potential. The needs in relation to industrial location with a particular city may be achieved by zoning control. However, town planning control alone will not be sufficient to ensure dispersal and diversification of industry through out the State. There are two principal ways in which industrial location may be controlled or influenced. The first is of persuasion or inducement by which areas suitable for industry are set aside at desired locations and these industrial areas or estates are specially developed, provided with socio-economic infrastructure together with good communication facilities. Work sheds are provided wherever deemed necessary. The provision of all the necessary conveniences can induce establishment of suitable activities at these sites. Arrangements for exchange of old sites in the congested areas with new sites could be suitably made. Inducement in certain areas and restriction in others can be also imposed by differential local rates, differential concessions by M.I.D.C., etc.

2.38. In addition to giving such inducements to settle in underdeveloped areas, financial penalties might be imposed on those who remain or settle in areas where their presence is contributing to the problems of congestion. This could be effected by imposition of a pay

roll tax on firms in the form of annual payment in respect of every employee. Tax would vary in rate, according to the distance of the firm from prescribed congested areas. Thus firms employing a large number of workers would be encouraged to settle as far away from congested areas as possible. The policy of building subsidized housing could also be linked with the policy of industrial dispersal.

2.39. If the economic forces which have contributed to present unsatisfactory state of affairs continue to operate unchecked the conurbation will continue to attract opportunities and jobs away from other areas. To bring about improvement in the situation, it is necessary to have :—

- (i) Suitable provision for compensation and betterment ;
- (ii) attempt to integrate various financial policies which affect urban development ;
- (iii) counter attractions and penalties introduced to offset natural economic forces of location which work to the detriment of the common good.

2.40. *Limits of the Metropolitan Regions.*—The influence of metropolitan Bombay extends over a very wide area. As a port, Bombay enjoys a unique position on the western coast and serves a large hinterland. It is the financial nerve centre of the country and it is also the biggest industrial centre in Maharashtra. It receives regular immigrant population mainly from such areas as Konkan, Poona and Satara districts of Maharashtra and Uttar Pradesh, Gujarat, Kerala, Madras and Mysore State. Bombay, as a single city, has almost 11 per cent. of the total State population and about 37 per cent. of the total urban population of Maharashtra.

2.41. The very extensive area over which influence of Bombay extends is, obviously, not appropriate to be considered as physical planning unit. We feel that the limits of a metropolitan region may be considered from two points of view ; viz. (i) the area over which the activity of the urban core is already intimately affecting socio-economic life and (ii) the surrounding area over which it appears necessary to plan integrated development of the future. It is also desirable to define the region in terms of fairly clearly defined or demarcated physical characteristics. Within the Bombay Region, the link of suburban railway services already affects economic life along the railway lines upto at least Virar on the Western Railway and Karjat on the Central Railway. Plans for linking the Panvel area with Bombay are well advanced. The large industrial complex growing near Kalyan and the smaller industrial units near Bhivandi are closely linked to Bombay. The Khopoli area is at present somewhat distinct but with the developments already under way at Uran, Panvel and Apta the future line of developments, will be continuous upto Khopoli. It is logical, therefore, to have developments integrally planned upto the ghats at Karjat and Khopoli.

2.42. In view of the above, the Committee recommends the following limits for the Bombay-Panvel and Poona Regions :—

#### BOMBAY-PANVEL REGION

*North.*—Vaitarna Creek and the taluka boundary of Bassein and Bhivandi talukas, along river Tansa.

*East.*—Sahyadri ranges upto and including Khopoli in the region.

*South.*—Patalganga River.

*West.*—The sea.

2.43. The region as defined above with natural boundaries on all side would be a compact physical unit included between Tansa and Patalganga and traversed by Ulhas. This is hereafter referred to as the Bombay Metropolitan Region.

#### POONA REGION

2.44. In the light of the criteria indicated earlier, the Poona region may be defined as follows :—

In the *South*, it will be bounded mainly by hill ranges ; in the *West*, partly by the hills and partly by the large military settlement at Dehu ; on the *North*, the boundary may be marked by the flows of the Indrayani and the Bhima ; in the open country in the *East* no sharp physical features help to indicate limits and the administrative limits of Haveli taluka are considered suitable.

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**PART II**  
**(REPORT—BOMBAY REGION)**

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## CHAPTER III

### GROWTH OF GREATER BOMBAY

3.1. The development of present day Bombay may be said to have commenced in 1664 when Captain Humphary Cooke took charge of the island from the Portuguese and decided to build a town for the trading class. What we now call Bombay was at that time a number of unconnected islands having little resemblance to the present day Bombay. Salsette beyond the Bombay island was also until 1808 an archipelago comprising seven islands viz. Salsette proper, Trombay, Juhu, Vesava, Marve, Daravi and Raj Murdha. It assumed its insular aspect as a result of the slow process of silting up of the creeks that separated the seven island from one another. Commenced thus barely three centuries ago the city has grown to-day to be one of the biggest metropolitan centres of India far outpassing town of older origin. The decade 1860 to 1870 laid the foundations of the future prosperity of Bombay in more than one way. The cotton mill industry took roots at Bombay during this decade and the number of cotton mills which was 6 in 1860 increased to 10 by 1870. In 1865, the Bombay Municipality of nominated members came into existence and Arthur Crawford was appointed the first Municipal Commissioner. The Backbay reclamation scheme was first mooted in 1864 and in the same year the city submitted itself to the first voluntary census under the inspiration of the then Governor. The opening of the Suez Canal in 1869 and the establishment of the Bombay Port Trust in 1870 also contributed greatly to the prosperity of Bombay as a Port. Earlier in 1863 Bombay was connected by rail with the Deccan hinterland and in 1864 with Ahmedabad. In 1864 the population of the island of Bombay which had then an area of 18.62 sq. miles was already 7,83,980. It was 9,28,000 in 1901. The population nearly doubled within the next forty years and was about 18 lakhs in 1941.

3.2. The growth of population was phenomenal during the next two decades. By 1951, the population grew to 30 lakhs and in 1961 to nearly 42 lakhs. The decade rate of growth between 1941-51 was thus nearly 66 per cent. while it was nearly 40 per cent. between 1951-61 as against the State average rate of growth of 23.6 per cent. The process of growth of population was accompanied by a continuous areal expansion and urban sprawl. A continuous increase in the land surface has been a very prominent phenomenon in the development of Bombay. This was the result mainly of reclamation of lands from the Sea. The area of the Island in 1961 was 26.4 sq. miles. In 1864, the census gave its area as 18.62 sq. miles. Thus within the island in about 96 years there occurred the increase of 7.78 sq. miles as a result of the various efforts made from time to time to satisfy the land hunger of the city.

3.3. In an attempt to solve partially the problems created by the tremendous growth of population and the physically expanding urban agglomeration, the limits of the Corporation were twice expanded during a short span of seven years. The limits were first extended in 1950 beyond the Bombay City Island upto Jogeshwari on the Western Railway and Bhandup on the Central Railway along with the Trombay Island to include what are called the suburbs. They were further extended in February 1957 upto Dahisar on the Western Railway and Mulund on the Central Railway to include the extended suburbs. The extension of the Corporation limits, however, in no way served to arrest the urban sprawl or to control it, as no effective measures were at any time taken for land use control and zoning. The land hunger at present is even more acute than ever before and the process of continuous and un-interrupted urbanisation still continues.

3.4. *Present State of Region.*—The Bombay Metropolitan Region as defined before includes the whole of Greater Bombay, Thana, Kalyan, Bhivandi and Bassein Talukas of Thana District and Uran Taluka and portions of Panvel, Karjat and Khalapur Talukas of Kolaba District. It has an area of 3,836.98 sq. kms. and consists of 940 villages inhabiting 6.39 lakhs of population (besides 71 uninhabited villages) and 19 urban centres with an urban population of 46.43 lakhs. The regional density of population is 1,379 persons per sq. km. as against the state average density of 129 persons per sq. km. The area of the region forms about 1.25 per cent. of the State area and the population about 13.5 per cent. of the State's population. Out of 46.43 lakhs of the urban population nearly 41.52 lakhs are accounted for by Greater Bombay alone. The region excluding Greater Bombay, therefore, contains 6.39 lakhs of rural population and 4.91 lakhs of urban population. Excluding Greater Bombay

the regional urban population would be nearly 44 per cent. of the total population as against the State average of 28 per cent. and would be indicative of the higher degree of urbanisation reached in the region.

3.5. *Land use pattern.*—In the eastern portion, the region is bounded by the main Sahyadri ranges. In the middle of the region are the coastal ranges running in a north-south direction with the Parsik hills in the south, the Salsette hills in the middle and in the north the hill ranges of Kamandurg, Dahyari, Gotara, etc. Between the coastal ranges and Sahyadri and along the coast the land is level and is devoted mostly to paddy cultivation. Along hill slopes are forest areas and along sea coasts are salt pans and marshy areas, Table No. 5.1 shows the land utilisation pattern in the region and other tables in the appendices show other characteristics of the region.

3.6. *Settlement Pattern.*—The total population of the Bombay Metropolitan Region as defined by us above was 52.81 lakhs according to the 1961 census. The distribution of the population within the region was of a highly uneven character, Greater Bombay with its area of 169 sq. miles i.e. 438 sq. kms. accounted for 41.52 lakhs while the rest of the area of the region admeasuring about 3,400 sq. kms. contains 11.29 lakhs in a heirarchy of big and small towns and villages. There are 18 urban centres in the rest of the region with a population of only 4.91 lakhs. The bigger of these urban centres, namely, Thana, Kalyan and Ulhasnagar are situated in close proximity of Greater Bombay. The area within the Salsette island including Thana and Bhayandar is in fact a continuous urban agglomeration while the area beyond upto Bassein on the Western Railway, Bhiwandi along the Bombay-Agra Road and Ambernath along the Central Railway could be termed the peri-urban zone. This latter includes 10 urban centres in the region with a total population of 3.33 lakhs. The rest of the region which would be peripheral or rural zone contains 6 of the remaining urban centres but with a total population of only 49,000. The small townships in this zone range in size from 2,000 to 18,000 only. Tables 3.3. and 3.4 show the average densities of population in the various townships falling in the region and the average densities of population in the various talukas. It would be seen that the average densities in all the Talukas are very much higher than the State average of 129 persons per sq. km. Within Greater Bombay, the population densities are again very uneven, which vary from as low as 6 persons per acre in R Ward to as high as 769 persons per acre in C Ward during 1961. In the 'C' Ward, the density was the highest in the Market area (1762) and in Bhuleshwar (1520). This is shown in Table No. 3.5.

3.7. The following Table shows the distribution of inhabited places in the region according to the size of population :—

Category of Settlement	No.	Total population	Percentage of population
1	2	3	4
Villages less than 1,000 population .. ..	774	3,10,360	5.88
Villages between 1,000—4,999 .. ..	162	2,92,692	5.54
Towns less than 5,000 .. ..	1	2,842	0.05
Villages above 5,000 .. ..	4	35,665	0.68
Towns between 5,000—19,999 .. ..	7	1,00,740	1.91
Towns between 20,000—49,999 .. ..	3	1,04,737	1.98
Towns between 50,000—99,999 .. ..	1	73,482	1.39
1,00,000 and above but less than a million .. ..	2	2,08,867	3.95
Greater Bombay .. ..	1	41,52,056	78.62



3.8. The following Table shows the existing occupational pattern of the population in the region according to the 1961 census :—

*Working and Non-Working population in Bombay-Panvel-Khopoli Region*

Area	Workers in Primary Sector		Workers in Secondary sector		Workers in Tertiary sector		Non-Workers		Total Population
	No.	% Total Population	No.	%	No.	%	No.	%	No.
1. Greater Bombay.	31,920	0.77	7,33,478	17.67	9,21,270	22.19	24,65,388	59.37	41,52,056
2. Bassein Taluka ..	47,945	28.88	10,010	6.04	17,594	10.59	90,465	54.49	1,66,014
3. Thana Taluka ..	24,746	13.27	24,432	13.14	26,624	14.28	1,10,647	59.31	1,86,449
4. Kalyan Taluka ..	43,296	12.03	35,712	9.92	51,200	14.23	2,29,690	63.82	3,59,898
5. Bhivandi Taluka.	49,388	30.36	21,521	13.23	9,614	5.91	82,177	50.50	1,62,700
6. *Panvel Taluka ..	40,038	37.12	2,452	2.27	6,546	6.07	58,832	54.54	1,07,868
7. Uran Mahal ..	18,182	32.20	3,226	5.73	4,194	7.43	30,860	54.64	56,462
8. *Karjat Taluka.	18,657	32.25	1,738	3.00	6,508	11.25	30,947	53.50	57,850
9. *Khalapur Taluka.	11,648	36.24	1,822	5.67	2,598	8.08	16,076	50.01	32,144
Total for Region ..	2,85,820	5.41	8,34,391	15.80	10,46,148	19.81	31,15,082	58.98	52,81,441

\*Only those areas that are included in the region are considered.

Source.—Population Census, 1961.

3.9. About 41 per cent. of the population within the region including Greater Bombay was engaged in some gainful or productive activities whereas the remaining about 59 per cent. of the population was of non-workers as was revealed during the population census 1961. Further, the proportion of non-working population was the highest in the region in Kalyan Taluka and was the lowest in the region in Khalapur Taluka. It is also evident from the above Table that in the region outside Greater Bombay, Thana and Kalyan proportion of workers in the primary sector was higher than in the tertiary and secondary sectors.

3.10. *Population Projection.*—Owing to the inadequate data about death rates, birth rates and of the migration particulars of the region the population of this region has been projected upto 1991 by the ratio method using the State's projected population. In the ratio method the ratio of population of the region to that of Maharashtra in 1961 is applied to the projected total population (with migrations) of the State as worked out using component method used by Sarvashri K. V. Ramchandran and R. E. Chaudhari of the Demographic Training and Research Centre, Chembur, Bombay-71. Tentatively, the ratio of the regions population to that of the State's population has been estimated to be the same as in 1961. Therefore, the estimates of projected total population for the region are purely provisional and subject to revision.

3.11. The details of year-wise rural/urban and sexwise break up have been shown in the Table 3-18. Accordingly, the total population of the region would increase from 52.81 lakhs in 1961 to nearly 112 lakhs in 1991. The estimates of total population of Greater Bombay and rest of the region have been worked out without taking into consideration any future measures to check further growth of population in Greater Bombay and indicate how the population of Greater Bombay could blow up to huge proportions, if much bolder plans and policies are not adopted and much stricter measures are not undertaken than heretofore for achieving greater dispersal of population and activity in the State and in the region.

3.12. The Study Group of Greater Bombay which reported in 1959 described fully the then existing conditions in Greater Bombay. It drew attention to the high degree of congestion of population and attributed it to the unchecked growth of industrial establishments within the area. The Study Group brought out the consequences of congestion by reference to housing inadequacy, shortage of open spaces, etc. traffic conditions and deterioration of

public utility services. It is not necessary for us to go over the ground already covered by the Study Group and we content ourselves with noting the extent to which conditions have worsened since the Study Group reported.

3.13. *Housing*.—Residential densities in the island city are extremely high and uneven. Table No. 3-5 shows residential densities in the 88 census circles in which the area of Greater Bombay was divided in the 1961 Census. Housing deficit is ever increasing the Study Group Report had said “The Housing situation was extremely critical even ten years ago. During the last decade conditions have much worsened and the situation has become more or less desperate”.

3.14. Moreover, majority of the households are living under grossly overcrowded conditions. The tabulation based on house lists of 20 per cent. sample, prepared during the 1961 census indicates that out of a total number of 1,48,659 households 1,07,512 households had only one room while 3,591 households had not even one regular room. This means that almost 75 per cent. of the population is living in tenements of one room or less and tenements of 2 or more rooms is the privilege of only a quarter of the total number of households in Bombay.

3.15. *Open spaces*.—The deficiency in open spaces has further aggravated from the date of the Study Group Report. Table XXXI in Development Plan, report shows the extent of deficiency of nearing 6,000 acres. This is reproduced for ready reference and included in Table No. 8.5.

3.16. *Traffic and Transport*.—The registration of vehicles in Greater Bombay is increasing at even a faster rate than the growth of population and industrialisation without, however, any substantial improvement in the road system. Private cars have increased by over 75 per cent. and all registered cars, trucks and taxies more than 100 per cent. in the past ten years. The following table shows the total number of motor cars, taxies and trucks operating within the area of Greater Bombay during the years 1953 to 1961 and the number of road accidents which has almost doubled :—

*Number of Accidents*

Year	Registered Motor Vehicles	Total No.	Personal injury (No.)	All types (No.)
1	2	3	4	5
1952	35,345	221	4,454	14,228
1953	36,081	222	4,277	13,814
1954	39,220	210	4,266	15,784
1955	40,210	250	4,558	18,861
1956	42,076	243	5,398	19,994
1957	45,728	260	5,494	20,174
1958	49,724	268	5,334	22,151
1959	54,430	289	5,463	24,153
1960	61,381	282	5,599	25,270
1961	68,128	324	5,500	28,654
1962	71,597	336	6,301	30,201

3.17. In spite of a fairly well organised public transport system, mass transport facilities are gradually but definitely deteriorating “operating speeds on the buses average eight miles per hour in the central business districts” (Bombay Traffic and Transportation Study by Wilbur Smith and Associates). Loading is heavy on the bus routes due to a chronic shortage of vehicles, equipment and the demands for extension into newly developed areas. “The

trams which were obsolete, difficult to operate and extremely slow due to road-way congestion were abolished and this cast a heavier burden on the auto-bus system which currently is in a desperate position". Messrs. Wilbur Smith and Associates report said "At the present time there is a numerical deficiency in the operating fleet which restricts the capabilities of the bus service in providing the necessary service to all persons who desire public transportation. It is important, therefore, that some means be recognised to permit the bus companies to obtain necessary equipment, etc. to permit their meeting the transportation desires of the Bombay area". The numerical deficiency mentioned in the report, however, persists.

3.18. A very large number of long distance passengers use the suburban railways which are in no way less overloaded. "Gate counts conducted between the hours of 7-00 a.m. and 11-00 p.m. at Victoria Terminus recorded 3,30,000 passengers, at Churchgate Station between the hours 6-00 a.m. to 11-00 p.m. 1,65,000 persons were recorded. The peak hour rail usage figures of inbound passengers at V. T. and Churchgate was 30,000 and 20,000 respectively (Wilbur Smith). The rail facilities are also very seriously taxed by passengers especially during the peak hours when the travelling conditions are really critical.

3.19. *Water Supply.*—The following table shows the requirement of water for various purposes in 1961 and 1966. As against the total requirement of 278 M.G.P.D. in 1961, the total available supply on the same date was only 231 M.G.P.D. :—

*Statement showing requirements of water supply in 1961 and 1966*

<i>City Proper :</i>		1961	1966
Year—			
Domestic in M.G.P.D.	... ..	111	120
Industries in M.G.P.D.	... ..	37	37
Losses in M.G.P.D.	... ..	23	25
Public Utilities in M.G.P.D.	... ..	11	12
Floating population M.G.P.D.	... ..	2	3
	<b>Total M.G.P.D.</b>	<b>184</b>	<b>197</b>
<i>Suburbs—</i>			
Domestic in M.G.P.D.	... ..	55	84
Industries in M.G.P.D.	... ..	13	28
Losses in M.G.P.D.	... ..	10	17
Public utilities in M.G.P.D.	... ..	6	8
	<b>Total M.G.P.D.</b>	<b>84</b>	<b>137</b>
<i>Enroute :</i>			
Supply M.G.P.D.	... ..	10	15
	<b>Grand Total of City and Suburbs M.G.P.D.</b>	<b>278</b>	<b>349</b>

*Source.*—Development Plan of Bombay.

## CHAPTER IV

### POPULATION AND THE LOCATION OF INDUSTRY

4.1. The tremendous growth of population in the Greater Bombay area poses a big challenge to regional planners. The basic finding of the Study Group regarding Bombay island was that "any prospect of an increase in its population is to be viewed with grave concern and alarm. The problem has become quite desperate and remedial measures must be set in motion without the slightest delay". Relatively little has been done in relation to the recommendations made by the Study Group.\* The situation in the island in 1965 is even more desperate than it was in 1959 and will continue to worsen if no positive measures are taken to restrict further growth.

4.2. At this stage some observations on population projections and on provisions in Development Plans for future growth of population may not be out of place. Most considerations of future planning for development start with projections of the size of future population. These may be made with greater or lesser sophistication but they all share a general characteristic. This is that they assume a continuation of conditions prevailing in the immediate past, including that of policy regarding industrial locations and other matters. The planners in their turn treat these projections as almost accomplished facts and feel impelled to plan for the projected population. Such an attitude of passivity, especially in relation to a situation like that of Bombay appears highly inappropriate. The projection figures should, in fact, be treated not as indicating inevitable developments but as pointing to possible dangerous situation if policies are not changed. They should thus lead the policy makers to take vigorous action so that the threatened increase in population of such areas does not, in fact, take place.

4.3. Similarly, when it is said that a certain increase in population is provided for in a Development Plan, it, most often, means that there is sufficient land reserved for housing in the land use plan if the houses are built. The plans do not usually care to project the conditions or manner in which the required additional housing will be forthcoming.

4.4. This discussion is highly relevant to the situation in Bombay. Most planners appear to take for granted the very high figures for future population that have been projected. The plan of the Corporation is content to work with them. Further, when the Corporation shows by calculations that this higher population could be accommodated, all that it means is that the relevant area of land has been demarcated for residential purposes. The rapid worsening of the situation since 1941 is the result of similar passive attitudes and policies. The growth of industrial and other activity in Bombay island and suburbs was permitted unchecked and was, in fact, encouraged without consideration of the consequent growth of total population and the need for the provision of basic needs, especially of housing. Apart, therefore, from such corollaries as traffic congestion, pressure on water supply, sewage, inadequate play-grounds and open spaces, etc. the extent of shelter available to newcomers proved hopelessly inadequate. At the same time rent control, high prices of land and of building materials, etc. restricted the supply of new dwellings and confined it to the requirements of only the better-off. Increase in the numbers of pavement dwellers and the emergence of the new type of hutment colonies inevitably took place. This was the genesis of the desperate situation which the Study Group on Greater Bombay recorded. Almost all the factors contributing to it continue unchecked to-day and the situation is constantly worsening with the result that during the last two or three years, it is beginning to be felt even as a law and order problem.

4.5. The basic problem of the Bombay Island is thus population of a size which inevitably creates miserable conditions for very large numbers. Our population projection exercise indicates that the population of Greater Bombay might be as high as 87 lakhs by 1991, or that a population of almost the size of existing Bombay will be added to it within the next 25 years.

4.6. Immigration has been one of the major factors contributing to the rapid growth of the population of Bombay. Tables 3.13 and 3.16 show the extent of immigration into

\* *Note.*—We indicate in an Appendix, the extent to which recommendations of the Study Group have been accepted and implemented.

Greater Bombay from various districts of the Maharashtra State and from other States. Almost 64 per cent. of the population in Greater Bombay was born outside this metropolitan city and hence were returned as migrants to the city during the population census of 1961. The analysis of the migrant population according to their birth place reveals that about 28.59 per cent. of them had come from the Andhra Pradesh, Kerala, Mysore and Madras States, about 18.84 per cent. came from Gujarat or Rajasthan, about 18.32 per cent. came from Uttar Pradesh, Punjab, Madhya Pradesh, West-Bengal, Delhi, Bihar, etc. Migrants from Konkan, that is, from the Districts of Kolaba, and Ratnagiri were about 22.63 per cent. of the total migrants. It is significant that while the net increase in the population of Greater Bombay from 1951 to 1961 was about 11.58 lakhs, the gross immigration into Greater Bombay during the ten years preceding 1961 was 13.84 lakhs according to the Census figures.

4.7. The Memorandum on the Fourth Five-Year Plan of the Maharashtra State, notes "although Maharashtra contributes 24 per cent. of India's factory output the industrialisation of the State is concentrated in the Bombay-Thana area and the Poona-Pimpri complex and the spread effects of these industrial complexes have not been transmitted to any appreciable extent to other areas of the State in spite of the measures taken during the Third Five-Year Plan. Bolder measures will have to be undertaken in the subsequent plans to carry out effectively the policy for dispersal of industries in other parts of the State". We whole heartedly endorse the necessity of bolder measures for effective dispersal of the industrial and economic activities concentrated in Greater Bombay and surrounding area.

4.8. It has been indicated that the regional plan of the Bombay Metropolitan Region must have a double objective. The first is the improvement of the deteriorated conditions especially on the Island of Bombay and the second the planning of appropriate developments in the suburbs and the mainland. The basic relevant relation is that of population and economic activity with the land surface and it has been seen that if the existing relation in this regard is held constant an enormous load of population may come to grow within the region as a whole. The population of Greater Bombay has grown largely through large-scale immigration during the last decade. It is, however, not obviously possible to think of checking the growth of population through prohibiting immigration or acting directly on immigration in any manner. Basically it is job opportunities created by economic activity that attract immigrants to the area and maintain them within it; it is thus the concentration of economic activity within the area that is responsible for the concentration of population and the over-congestion. The existing situation in Bombay is the result chiefly of the policy of giving licences for establishment of industrial concerns in such large numbers within a very small area and stimulating in other ways economic activity on the Island. Industrial activity also affords the base which invites a large additional growth of subsidiary and tertiary activities. Remedial action has, therefore, to be directed in the main towards the phenomenon of the location of industry. The regional plan of the Bombay-Metropolitan Region must, in the circumstances, concern itself significantly with the subject of location of industrial and other activity in Bombay Island, suburbs and the mainland. In order to be realistic proposals in this regard have to be oriented towards direction and control of activities which can be influenced through State action and policy.

4.9. We content ourselves with indicating the main types of activities in Greater Bombay in relation to which action is possible and should be taken. In the primary group of activities the two main are fishing and the production of milk. In the secondary group lies the central group of large industry in regard to which action is possible through licensing and a number of municipal regulations. In other activities are included the extremely important class of legislative and administrative affairs which are almost entirely under the control of Government. Government could also indirectly influence the routing and the points of assemblage of the means of transport and the location of some types of business centres. The solution of the present problem of Bombay Island requires vigorous action in relation to all these.

4.10. We turn our attention first to the problem of industrial location. As pointed out above, the Government of Maharashtra has already accepted the policy of dispersal of industry to other parts of the State.

4.11. There were about 4,509 registered factories in the region during 1963, employing about 5,52,389 workers. During the period 1956-63, the number of factories in the

region increased by 40 per cent. while the growth in the number of factory workers during the same period was about 30 per cent. According to the population census the total workers engaged in manufacturing activities which included workers engaged in cotton, small scale and household industries besides the factory workers were about 7.82 lakhs or about 36 per cent. of the total working population in the region.

4.12. Tables 4.2 and 4.3 show the main groups of industries in Greater Bombay and the percentage of workers employed by them. Textiles which are largely concentrated in the Island city constitute the single largest industry in Greater Bombay employing the largest number of workers nearly 14 per cent.. It is also the oldest industry in Bombay, having completed 100 years of its existence in Bombay, this industry seems to be at a stage where renovation has become necessary and where therefore, re-location may also be possible. The general engineering industries come next to textile employing nearly 10 per cent. of the total workers.

4.13 Industrial concentration in Bombay has been one of the principal reasons of the huge population congestion and overcrowding. There is statistical evidence to show that a positive co-relation exists between the population of Greater Bombay and the percentage of factory workers to the total population. This is indicated in Table No. 4.4. The Study Group Report stated "it is the absence of essential facilities like transport, electricity, water supply, etc. needed for the development of industry in the mofussil areas and their existence in Bombay which has resulted in industrial concentration in Bombay area". We would like to add to these three other factors, viz. (i) the development and existence of a highly specialised and concentrated consumers' market in Bombay; (ii) a pool of specialised and trained personnel available in Bombay; (iii) the high degree of labour mobility in the hinterland of Bombay which provides the needed labour for industries readily. Most of the industries are thus concentrated in Bombay for one reason or another. About 30 per cent. of tertiary employment and 66 per cent. of the State's factory employment is concentrated in Bombay and if Greater Bombay and the Bombay-Thana complex are excluded Maharashtra is as industrially backward as any other part of the country. About 75 per cent. of the value of industrial output and 84.5 per cent. of electricity consumption in the State is accounted for by Greater Bombay. The number of factory workers per lakh of population in 1961 was as high as 12,172 in Greater Bombay as compared to 1,991 workers per lakhs of population in the entire Maharashtra. These figures are sufficient to indicate the extent of imbalance in industrial location in the State as a whole. Measures taken so far for the dispersal of industrial activities in the State seem somehow to have proved infructuous. We understand, for example, that even inspite of the Study Group Report, 24 of the 41 industrial licenses granted in 1963 were granted for units in Greater Bombay. In the year 1964, out of the 37 industrial licenses granted for new units in the State, 8 were for units located in Greater Bombay. In the same year, out of the 146 industrial licenses granted in the State for substantial expansion in the existing units or manufacture of new articles in the existing units, 102 were for units located in Greater Bombay.

4.14. In an otherwise bleak situation, one ray of hope has been the recent decision of the Government of Maharashtra regarding licensing of new industrial establishments either within the Island or in the Suburbs. It is understood that no new heavy industry can now be established in this area, except some specific types in the Port Trust area. Regarding the expansion of industries, no permission is being given except in the case of textiles where reasonable expansion to balance operations is being permitted. Some small scale units, have, however, been permitted to be established. These policy decisions may have prevented a much greater worsening of the situation. However, as the situation has in fact continued to worsen it is clear that much more drastic action is needed. This must be in the direction of attempting a positive shift of heavy industry outside of the Island. With the new plan of constructing dock-yards at Sheva Nhava, across the creek, there would be no need to allow extension of any heavy industry in the Port Trust area and in course of time existing heavy industry in that area could also be shifted. It is also necessary to do away with the special treatment at present given to the textile industry on Bombay Island. No fuller utilization of the land available to the industry, no replacements or expansion of units be allowed in the future. Also locations either on the main-land in the Bombay Region or in other parts of the State must be fixed and suitably prepared to which, in due course, existing textile units could shift. An important element in the new plan of development of the Bombay region should be a long term plan for the shifting of as many heavy industrial units as possible outside Bombay Island. Two aspects of policy will have to be defined in this connection. Firstly restriction on use of land and buildings and restrictions on replacement,

expansion, etc. of plant and machinery or on operating additional shifts, etc. so that existing occupiers would be induced to think of shifting; the other element would be an offer of locations and facilities elsewhere which in terms of future developments may appear attractive to the industrialists.

4.15. In considering problems of the industries, in suburban area also concerted action is necessary. The Government of Maharashtra has recently issued a resolution laying down that no new industry will be permitted to be established in the Greater Bombay area unless a no objection certificate is obtained from the Industries Department. It is understood that as a result of this resolution the pace of the establishment of new industries in Greater Bombay has slackened. During the last decade, however, many new industrial units have been established in this area and a large potential of employment and of growth of population has been created. Also, lands have been acquired by private industrialists which are awaiting development and the corporation contemplates setting up four industrial estates of developed plots and 15 sites for service industrial estates. It is necessary immediately to evolve a proper policy for industrial development of the suburbs. We have suggested that all heavy industrial establishments to be shifted out of the Island should be placed either in the mainland region or elsewhere in the State. Light industry from the Island should get first reference to any developed or other sites reserved for industry in the suburban area. Such sites as remain over should be reserved for service or consumer industry directly connected with the needs of the population of Greater Bombay.

4.16. Fringe areas in Salsette also need attention. The existence of a Development Plan for Bombay and some sort of a control of industries in the Greater Bombay area have resulted in heavier local concentrations in this fringe area. The Industrial Complexes in Thana and the immediately surrounding villages provide a vivid example. We feel that the ban on new industries in Greater Bombay should be applicable to the whole of Salsette and not only to the Corporation limits. The administrative limits which artificially divide Salsette into municipal and non-municipal area have no relevance in regional planning and Salsette should be conceived as one single entity. The actual developments are likewise closely inter-related and in view of the heavier concentration in Thana and round about villages, we recommend that the remaining area along Ghodbunder Road to the north of the villages Kavesar should now be kept free from industries. This area also deserves to be protected from the point of view of preservation of land-scape.

4.17. We may now consider the situation within the region outside Greater Bombay. When industrial expansion within Greater Bombay became difficult the industries spilled over to the areas of Thana and the villages to north of it such as Kolshet, Balkum, Chitalsar, Manpada, etc. Over zoning of lands for industries at these places has resulted in leaving very inadequate and unsatisfactory areas in these localities for housing and other essential social and health services and cultural facilities. After Kalwa the industrial zones were extended in the long and narrow strip enclosed between the Parsik ranges and Thana creek. The industries have started spilling over the Salsette island into the mainland area near Dombivali, Kalyan, Atali, Ulhasnagar and Ambernath. Several industrial complexes have recently been established in the main-land region in an unplanned manner or are in the process of being established. Almost all the major industrial locations in the region are situated in the Bombay-Poona belt and conform largely to the ribbon development type.

4.18. As we look at it, the problem relating to planned development of the main-land is that of ensuring that it proceeds on proper lines and helps at the same time to the largest extent possible the solution of problems of the island and suburbs. Some preliminary observation on growth of activity and population in the area may be made. The main land part of the region, as defined by us, is integrally connected with Greater Bombay in a number of ways. In particular, the main communications system and sources of water supply for the two are the same. The main hinterland of the port of Bombay lies in the State of Maharashtra, and the vast bulk of traffic has to be carried over the north-east and south-east railway lines of the Central Railway and the Bombay-Agra and the Bombay-Poona roads. Any large developments of activity in the mainland region could add only to the load on this already congested system. The problem of water supply is already causing anxiety in Greater Bombay. Very considerable capital costs have to be incurred to increase the supply. As the main-land region depends on the same sources, additional water for its development will have to be obtained at the same high level of costs.

4.19. This last factor needs to be emphasised in relation to any future planned developments not only in Greater Bombay but also in the mainland region. The costs of the provision of most public utilities and services tend to go up after a certain size of urban population is reached. The optimum has long been passed in Greater Bombay and the per unit costs of additional units are specially high in this urban complex. In its development the mainland region will fully share in this high level of costs of utilities and services.

4.20. After the establishment of the Maharashtra Industrial Development Corporation, developments within this area have been largely influenced by the activities of the Corporation. It is, therefore, necessary to review these briefly.

4.21. The Maharashtra Industrial Development Corporation was established by the Government of Maharashtra under the Maharashtra Industrial Development Act, 1961, on the 1st August 1962. Its aim was to promote and assist the rapid and orderly establishment, growth and development of industries in Maharashtra and it was conceived as the first step in the attainment of the objectives of gradually decentralising industries and helping the industrialisation of the underdeveloped parts of the State.

4.22. Upto 1965, the Corporation was entrusted by the Government with development of 20 industrial areas and 5 water supply schemes. The Corporation develops the industrial area for and on behalf of the Government of Maharashtra. After the development work of the Corporation in any particular industrial area is completed, the State Government withdraws such area from the Corporation, as provided for under section 56 of the Maharashtra Industrial Development Act. In the Industrial areas entrusted to it for Development, the Corporation provides access roads, water supply and drainage. It also makes arrangements with the concerned authorities for making available power supply, railway siding facilities etc. It is understood that normally developed plots are given on long term leases to industrialists, but the structure of occupancy prices is so arranged that as one moves away from Bombay, this price decreases. It is also understood that in the under-developed parts of the State, plots are leased to industries on concessional terms of rent by way of incentive to industries to move to such areas, on the following basis :—

- (i) No rent for the first two years,
- (ii) Half the economic rent for the next three years,
- (iii) Full economic rent from the sixth year onwards.

4.23. The following industrial areas in the Bombay-Metropolitan region have been taken up for development by the Corporation :—

(1) *Thana Industrial Area (Wagle Estate)*.—This was the first industrial area taken up by the Corporation for development. It originally comprised 310 acres in the first stage ; all the plots in this area have already been allotted and further area is being acquired and developed.

(2) *Marol Industrial Area*.—This area consists of about 300 acres of which 250 acres are in possession of M.I.D.C. and proposed to be developed in suitable phases.

(3) *Bhandup Industrial Area*.—Government has entrusted 275 acres of land at Bhandup to the Corporation for development. Land Acquisition proceedings of Government are understood to be in progress.

(4) *Ambernath Industrial Area*.—This area comprises a large area of land on the Kalyan-Badlapur Road near Ambernath Railway Station. There are two blocks, the Kansai Block comprising 150 acres for chemical industries and the Morivali Block covering the remaining area for engineering industries.

(5) *Dombivali Industrial Area*.—Development of the first phase of 300 acres on Kalyan-Shil Road is under way. The main and feeder roads have been completed.

(6) *Trans-Thana Creek Kalwa Industrial Area*.—This area comprising over 3,000 acres is one of the largest industrial areas entrusted to the Corporation. This area is suitable for development of petro-chemical Industries. In fact, a total investment of about Rs. 100 crores in the field of a petro-chemicals is expected in this area before 1971. The importance of this area is increasing with the construction of the bridge across the Thana-Creek.

(7) *Atale Industrial Area*.—This area comprises 220 acres of land near Kalyan to the north of Ulhas river and is earmarked for chemical industrial. This is, however, perhaps being abandoned now.



(8) *Kulgaon Industrial Area.*—This area comprising 293 acres of land along Kalyan-Karjat Road near Badlapur and is earmarked for engineering industries. .

(9) *Kandivali Industrial Area.*—In this area the Corporation has been asked by Government to undertake the construction of roads on an agency basis for the Kandivali Industrial Estate, which has been set up by Government.

(10) *Mira Industrial Area.*—About 20 acres of land in this area, which is situated on the Western Express Highway just outside the Bombay Municipal limits, have been taken up for initial development and the co-operative industrial estate set up by the West Suburban Manufacturers' Association has been accommodated.

4.24. It would thus be seen that the Maharashtra Industrial Development Corporation which was conceived as the first step in decentralising industries has as many as 10 industrial areas/estates within the Bombay Metropolitan Region. The Maharashtra Industrial Development Corporation activities are resulting in the creation of new concentrations, in the vicinity of existing zones. We have no doubt that the M.I.D.C. has been doing good work in the positive development of industrial areas but we felt that a more logical sequence is necessary within industrial locations in the region and the State as a whole.

4.25. The activities of the Corporation emphasize the great urgency of having a plan of regional development. In the absence of such a plan the Corporation's activities were conceived of as providing some order in an otherwise unregulated and chaotic situation. But as they were not conducted against the background of a total plan of regional development the Corporation could not be aware of the total long range effects of its activities and no responsibility for providing for the total needs of the increased population was placed on the Corporation. Moreover, as the Corporation had no blueprint before it of future developments of the communications system within the region the location of its estates, etc. were concentrated on or near the present routes ; this unnecessarily led to ribbon-type growths.

4.26. According to normal expectations the industrial areas outside Greater Bombay and on the main-land acquired and committed for development by the M.I.D.C. should sustain a population growth of many lakhs. We do not consider this as a very happy development but take it as irreversible. In the circumstances, we strongly urge that no extension of the activities of the M.I.D.C. in the Bombay-Metropolitan Region be undertaken beyond those for which firm commitments have been already made. Also, the development of the committed areas be so phased that it does not outrun the provision of the needed services, amenities and housing required by the population related to the establishment of industry.

4.27. We also consider that in determining the allocation of land to industrial establishments, in the future, the necessity of shifting as many units of industry from Bombay as possible and the necessity of establishing an industrial balance in the State as a whole should be kept in mind. Because of these considerations we would recommend that most of the industrial plots in all industrial estates of the Maharashtra Industrial Development Corporation and also in all other industrial areas and zones in the Bombay Metropolitan Region should be reserved for shifting industries. We consider it very necessary that the plan for industrial development in the mainland region should primarily be oriented towards bringing about a shifting of industrial establishments, especially heavy industry, from Bombay-Island. The plan should also provide for some development in such industries as are particularly needed to be located in the Bombay Region because of e.g. very intimate connection with international trade. No other type of industrial establishment should be allowed to be newly established in the mainland region except of course, the small consumption and service industries directly catering for the needs of the population of the Region.

4.28. All declared objectives of national policy run counter to increasing further concentration of an urban conglomeration of over 50 lakhs persons and reasons of security indicate the same. Therefore, we start with the basic proposition that except for commitments already irrevocably made the primary objectives of the development plan of the mainland should be to provide the necessary escape valve and relief to Bombay and to provide for the logically essential development in the most desirable manner. We would emphasize the need for keeping as much of the region as possible as non-industrial to provide the necessary break between the highly concentrated urban region

and developments farther away and also to leave ample area for planning recreational and other needs of the concentrated population.

4.29. There is general agreement that development of satellite towns in this area would suit best the requirements of such industrial and urban development as is allowed to take place.

4.30. We may suitably consider the question of the establishment of the townships in connection with the activities of the M.I.D.C. This is because the commitments of this Corporation have already started irreversible developments at a number of fresh points in the region. These together with older developments have first to be taken into account in making any proposals regarding the development and establishment of townships.

4.31. We may begin this discussion by quoting the qualifications in this regard suggested by the Barlow Commission :—

“(i) The communities should be as far as possible complete units and placed well outside the existing town so as to enjoy advantages of air and space not possible at the centre or in the immediate suburbs, and they should be protected by a belt of open country so as to avoid eventual coalescence with the existing town.

(ii) They should be off the main arterial roads of traffic, but have good access to them, and should be near enough to the big centre to enjoy its advantageous marketing facilities.

(iii) They should provide industrial and other occupational opportunities, preferably with reasonable diversification, for a large, if not the greater, proportion of the inhabitants.”

4.32. It is clear that many developments which have already taken place or are unavoidably in progress cannot be fitted into the frame of the recommendations of the Barlow Commission. What can now be done is to prevent a further expansion of industrial area on the mainland and to plan developments in relation to the committed points and areas so as to obtain the best possible results and to plan for a balanced growth of non-industrial activity within the region.

4.33. The Kalyan-Ulhasnagar Complex with the existing and large projected developments of Ambernath on one side and Dombivali on the other side would be one of the existing big centres of economic and population activity outside Greater Bombay. This shows all the signs of the evils of unplanned growth along the road and the railway line. It is necessary to restrain further establishment of industry in this area and to prepare immediately a fully articulated plan of development for it. We recommend that immediate steps be taken to secure sufficient open areas and spaces in the Kalyan-Ulhasnagar and Ambernath-Dombivali complex and to provide for the springing up of proper neighbourhood communities. The small industrial area at Badlapur already committed should not be extended and care should be taken that operation of private industrialists do not bring about ribbon development along the road and railway lines in this complex, or elsewhere. Similarly developments at Dombivali should also be limited and not allowed to spread along the road and the railway. We understand that there were proposals for extending the Dombivali base along the Kalyan-Shil Road and huge industrial acreages were proposed in this area. We are not, however, in favour of this.

4.34. The other area in which present commitments imply large developments is the Thana-Belapur road area. More than 3,000 acres have been committed in three separate blocks on this road by the M.I.D.C. When this industrial base is fully developed it will support an estimated population of 7 lakhs. The area is narrow and elongated with only one lengthwise line of communication. The new trans-Thana creek bridge enters this area two-thirds of the way down. The southern end of the area will thus be suitable for the two-way communication with Bombay Island and the Panvel area. In the circumstances a much larger urban development than of a satellite town is bound to take place in this area. Unless great care is taken this could easily become a miserable urban sprawl. We recommend that detailed town planning of this area be immediately undertaken. For provision of utilities and communications the area will have to be developed as a single unit; however, it would be desirable to develop it for other purposes in, say three separate units. This will make possible a proper planning of manageable neighbourhood units as well as provision for parks, open spaces and recreation facilities. We expect that apart from industrial activity

this area because of its location may also develop important commercial and financial activity and this should also be provided for in the plan.

4.35. Apart from these two areas which may develop as centres of large population, a number of locations are in the process of development or obviously suited to it. Panvel which has always been an important trans-creek town, is one of these. It is at the centre of the developing communications system in this area and is well placed in relation to growth at Sheva-Nhava and Uran. It would be important, therefore, to plan its growth as an industrial-cum-commercial centre. This will be a relatively large centre. Considerable industrial activity already exists at Khopoli and it has a growth potentiality which may be planned to develop as one of the smaller centres. Apte-Turade where the H. O. C. factory has already come up would also have to be suitably planned.

4.36. We considered proposals of township developments near (i) Jasai-Sheva-Nhava in the Uran Mahal and (ii) Taloja near Panvel in the Panvel Taluka. In view of the alternative port facilities contemplated at Sheva-Nhava the area near Jasai-Sheva-Nhava would need immediate attention and we are of the opinion that early steps be taken to secure a proper plan for this area.

4.37. As regarding Taloja, this is only about 5 to 6 miles from Panvel and we feel that another town centre within such a short distance would not be advisable. We feel that in case of a new township a minimum distance of 10 miles from an existing urban centre should be observed or else there would be an inevitable urban sprawl of an undesirable character in the very narrow intervening belt; or the existing town would develop merely as a dormitory area feeding the large industrial development in the new town and the development of both the towns would exhibit unsatisfactory features.

4.38. Proposals have been made to plan developments at Bhivandi. This is situated in a fertile rice area and is already a centre of rice-milling and the weaving industry. In view of this and its proximity to the centres of Thana and Kalyan we consider that no large developments be planned here and future industrial activity should be confined to the textile industry and to rice-milling.

4.39. This leaves for consideration the commitments at Vangani and proposals regarding a centre on the Bombay-Agra Road towards the outer limit of Bhivandi Taluka, and that at Nala Sopara. Because of the commitments already made a small township may be planned at Vangani. If a township is later required to be developed on the Bombay-Agra Road beyond Bhivandi a site near the Wasind Railway Station may be found suitable.

4.40. The case for Nala Sopara rests on the need for a centre in the area served by the Western Railway. This is a rich agricultural region and industrial development in it should not unnecessarily divert land from profitable agricultural use. It is understood that from all points of view lands on the east of Nala Sopara Station may be found suitable for industrial township.

4.41. We now come to the question of the minimum and maximum population limits of new towns. Aristotle's conception that there was a right size for the city, big enough to encompass all its functions, but not too big to interfere with them was restated in modern terms by Ebenezer Howard. He empirically fixed the right number as 30,000 with another 2,000 in the agricultural belt. Years later the Reith Committee on new Towns in England came almost to the same conclusion and suggested the lower and the upper population limits for new Towns as 30,000 and 50,000. The minimum figure was arrived at from a consideration of the various desirable amenities which too small a town would be unable to sustain while the maximum figure was arrived at by reference to the size of the built up area and the importance of keeping down the distance separating any house in the town from the open country side. Considering the levels of income of local Authorities and levels of local taxation available in our State we feel that a town of less than 75,000 population may not have the capacity to bear the costs of civil administration and be able to provide all the services and modern urban amenities of a standard required in the Bombay Metropolitan Region while upto a population 2½ lakhs which was the population of Poona in the 30's the town may not be felt oppressively big, we would, therefore, consider the lower and upper limits of population for the town centres as 75,000 to 2½ lakhs.

4.42. The various elements in the town plans to be evolved should be related to the total population and it would be important especially to see that the provision of industrial

zones is not very much in excess of the requirements of population. We have been prompted to make this obvious recommendation because of the excessive industrial zoning in Thana and near about villages.

4.43. The preservation of a green belt not only around Greater Bombay but around all town centres in the region would be highly desirable from the points of view of prescribing physical limits beyond which the urban expansion would have a compulsory break and also by way of providing necessary open air amenity for the urban areas. Dairy and Poultry farming, agri-horticulture would be some of the activities which are permitted in such green belts. Both the green belt occupier as well as the urban inhabitants would stand to benefit mutually.

4.44. In our recommendations we have not found it necessary to suggest entirely new proposals relating to development centres or areas. This is because so many commitments have already been made that developments connected with them more than fulfil needs of growth of economic activity and population within the region as we visualize it. It would be unrealistic to recommend reversal of processes already started or the scrapping of commitments already made. Therefore, we have confined recommendations mainly to a rationalising of the developing situation. However, it happens that the spread over the region of centres of development has not been very uneven, the main unfortunate developments have been the unduly heavy concentrations of activity in the Thana ; Thana-Belapur and the Kalyan-Ambernath regions and the relative neglect of the northern part of the region. We would stress as the main guiding principles of the development of the mainland region the following :—

- (i) the preservation of the emphasis on rural activity, (ii) the development of centres of urba-industrial activity separate from each other by sufficient expanse of rural area and economy to keep each as an independent compact manageable unit, (iii) to prevent urban sprawl or any large urban agglomeration.

#### **Rural renewal**

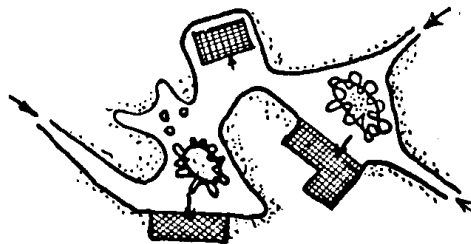
4.45. The push and pull factors in rural urban migration operate everywhere. The rural areas push the population to the urban centres because of lack of employment opportunities in villages while the urban areas attract the population because of better urban facilities and amenities provided there. If the constant rural urban migration is to be checked and population stabilised in the respective sectors action will be necessary to reduce the effect of both the push and the pull factors stated above. Conditions of agriculture and other primary occupations cattle breeding, dairying, poultry farming, fishing, salt-making must be substantially improved through a series of positive measures. With the proximity of the Bombay market and the development of communications and services within the region the above types of primary occupations should have great scope for development. A certain amount of small scale and cottage industry on the co-operative basis and artisan trades, could also be encouraged in suitable selected village centres. In this way the rural economy would be strengthened and made capable of sustaining the load of the increasing population. On the other hand efforts would also be necessary to reduce the pull of urban centres by improvements in villages judiciously made. We would lay great stress on the need to look after the layout of villages and the provision of services to individual villages. Town Planning should be integrated with regional planning in which every Settlement receives attention. It should not happen that the villages in the region get merely the disadvantage of the proximity of increased urban activity. An aspect for consideration would be the possibility of a part of the work force in industrial and urban employment centres continuing to stay in villages. We feel that this should be possible if villages within easy distance of the urban centre have not only good communications but also improved conditions of housing and living so that urban surroundings do not attract villagers. We have noted that a large number of the villages in the region are very small having a population of less than 500 and it may not, therefore, be feasible to suggest the provision of uniform facilities to all villages in the region. We would suggest that a study of the heirarchy of rural settlements in the region should be undertaken and suitable centres selected for development. Village water supply improvement of village sanitation, spread of primary and secondary education, better health and medical facilities, better banking and credit facilities, etc. should be made increasingly available to such selected village centres. If a programme of rural renewal of this type is undertaken it will also be a balancing factor to the rural unemployment and underemployment in the region. From this point of view we would suggest that an attempt should be

made to stimulate an urban centre in the especially depressed areas of the north (Bassein and portion of Bhivandi Taluka) so as to activate the rural and forest economy of that part.

4.46. It has been stated earlier that if existing trends continue, the population of Greater Bombay may increase to 87 lakhs by 1991. The Study Group had stated that any increase in the population of Greater Bombay above the 1959 estimated population, should be viewed with alarm. We share this view and have, therefore, suggested a series of measures by which the present trend in population growth, may be—checked and if possible, reversed. If the recommendations made by us regarding shifting of heavy industries and legislative, administrative and some business activity out of Bombay Island and limiting the industrial base in the suburbs to the existing level of committed industrial acreage are accepted and implemented, it should be possible to stabilise the population of Greater Bombay, at a relatively reasonable figure. We are, aware, that the checking and reversal of these trends cannot be effected within a short time and that the implementation of measures recommended by us can be effective only over a series of years. However, if Government persists in these measures, it should, we think, be possible to bring about a significant measures of decongestion and a net reduction in the population of Bombay Island. We would recommend that government measures should be directed consistently towards stabilising the population of Bombay Island at a figure not higher than 25 lakhs.

4.47. For estimating the population limits of Salsette Island, we would base ourselves on the committed industrial acreage which we have recommended should not be added to. The actual area so committed is estimated to be about 11,000 acres. On the basis of some norms of employment of persons per acre and of the proportion of industrial workers in the total population, we would put the total population to be sustained by this industrial acreage at about 30 lakhs. We would thus suggest a limit of about 55 lakhs as the ceiling at which the government policy should aim to restrict immediately the population of Bombay and Salsette Islands.

4.48. As regards the main land region, we have indicated limits and conditions of its industrial expansion and the location of new townships. We have emphasized that development of industries in this area should be related to the shifting of industry and population from Bombay and Salsette Islands. The total developments envisaged by us may in the long run sustain a population of nearly 30 lakhs in the mainland region. We would, however, not treat this as net additions to the population limits of Bombay and Salsette Islands. In view of the integrated character of the communication, water supply, etc. systems of the entire region and the obvious limits on these we would suggest a total ceiling of about 75 lakhs on the population of the Bombay Metropolitan Region. The developments on the mainland should thus be made to depend on the extent to which activity and population is shifted from the two islands.



## CHAPTER V

### OTHER ACTIVITIES

5.1. We consider in this chapter the location of activities other than industrial. Increase in these has also worsened the situation in Bombay. There is very little that can be done in relation to some of these such as the shipping, trading and financial transactions on which the economy of the City is primarily based. The construction of new dockyard across the creek may, in a small measure, relieve some pressure of shipping traffic but is not likely to affect the core of the business centre activities. However, there are a number of other ways in which centres of activity and with them working and living population could be shifted.

5.2. Government action has been responsible for aggravating the situation on the Island of Bombay created by concentrated licensing of industrial establishments. For example, there has been high concentration of building activity for government offices such as the new Sachivalaya and the Government of India Offices in areas at the southern end of the Island most likely to aggravate traffic congestion and lengthening the journey to work. This was avoidable. The decision to spend very large amount on reclamation of land in this area also appears to be unfortunate. The prices at which reclaimed land is sold may seemingly make the venture profitable. It is highly doubtful whether this would be so if the total social costs, recurring and non-recurring, of the burden imposed by the additional activity and population on the reclaimed area in terms expenditure on roads, services and amenities and travel to work, etc. are taken into account.

5.3. The Study Group had referred to location of Government offices, and educational institutions and to creation of an alternative business centre. The Study Group recommended "As a lead to reallocation of private industries it would be worthwhile of the State and Central Governments and other public authorities to examine the possibilities of removing from the Island of Bombay offices and establishments under their control. (a) Preferably to some mofussil area, (b) failing that, at any rate, to the Suburbs of Greater Bombay". (p. 63). The University has acquired an extensive area in the north. An early transfer to the area of the centre of activities of the University would also greatly help.

5.4. We are of opinion that the most serious consideration should be given to recommendation of the Study Group quoted above by the Government of Maharashtra, the Government of India and other public authorities. We see no reason why legislative and administrative activity should be located in a highly congested business centre and even a large number of public business activities can be suitably conducted in other places. The shifting of a number of these activities located at present at the southern end of Bombay Island to some other place would contribute to relieving congestion and saving a considerable amount of public expenditure, present and future. As far as possible legislative and administrative business should be shifted out of the Bombay Metropolitan Region; this will help to correct to some extent the present imbalance. Where, for any reason, this is not possible the location of the activity should be transferred at least to the mainland area within the region. We should also recommend that no major offices or commercial houses should, at least henceforth, be allowed to be located in the Fort area.

5.5. A suggestion was made by the Study Group for setting up an alternative business centre to the north of the city. This was not worked out in detail and little action has been taken in relation to it. Action in connection with the business centre would have to depend on the type of business which is sought to be shifted and its connection with activities of the main business centre of the island. However, we feel that development of the suburban area would be incomplete without a business centre of sizeable dimension located in the suburban area and this should be pursued by the Government and the Bombay Municipal Corporation.

5.6. We understand that the Corporation is contemplating regulation of goods truck traffic so that unnecessary movements within the Island area are avoided. We would draw attention to a recommendation made by the Indian Waterways Committee regarding investigating possibility of increasing use of waterways for traffic around Bombay and Salsette Island. If this can be achieved traffic by water would relieve road and rail

traffic in the island a great deal and would be specially important for the trans-creek development. This could be linked up with the plan of reclamation of land at Wadala. The rationalization of handling of rail goods traffic could also be considered in this context.

5.7. Action relating to location of industrial establishments and other centres of economic activity is basic. Action is, however, also needed in relation to housing and residential population. There is a continuous process of filling up of areas and of increase of density going on in almost in all wards of the City. Unless the process is checked immediately the problems of congestion and overcrowding would become much worse and unmanageable before the effects of the planned shifting of activity begin to become apparent. Therefore, the trend towards the increase of residential density must be stopped, at once, even before the shifting of centres of activity takes place. Until recently the only check exercised was through regulation in connection with F.S.I. This was not, however, effective, for two reasons. Firstly, the F.S.I. was placed unnecessarily high in most cases; also by itself it was not operative. It is necessary, therefore, that the F.S.I.'s for the different areas be suitably reduced; this will have the effect of limiting the growth of land values and in extreme cases of even lowering them. Secondly, in addition to the F.S.I. the restriction of limiting the number of tenements per acre be adopted for the different zones. We understand that some steps have been taken in this behalf recently.

5.8. Another problem referred to by the Study Group was the shifting of stables. We understand that some action is being taken in relation to this. There are, at present, in the suburbs and the extended suburbs, about 1,049 stables housing a total number of about 52,792 animals. Of these, only 666 stables with 38,692 animals are licensed and the rest 383 stables with 14,100 animals are unlicensed. The Bombay Municipal Corporation has been prosecuting periodically all unlicensed stables. But even the licensed stables are in a deplorable condition. The main difficulty has been that dung removal has been very unsatisfactory with the result that great nuisance is caused. The licensed stables also are being pretty frequently prosecuted for abating the nuisance but apart from fines, pretty little has been achieved. It is considered that at most of the places it is impossible to improve the situation and the only solution lies in removal of these stables from the midst of developed areas and their re-allocation in appropriate places. We understand that so far it had not been possible to pursue any plan of this nature, because the cattle licensing authorities and the Government were indicating to the municipal authorities that no new stables, even by way of rehabilitation, should be permitted within the limits of the Greater Bombay and that Government would be making arrangements for adequate stables for removal of all animals from Bombay. We understand that the Government is not now in a position to make arrangements for removal of the animals. We urge that the Bombay Corporation should take immediate action to tackle this problem and mitigate the nuisance. This problem should also receive attention in the Regional Plan. In particular possibility of suitably combining the transfer of Milch animals out of Bombay and Salsette island with the establishment of dairy industry in the mainland region may be fully explored.

5.9. The fishing industry has been a source of income for more than 31 thousand persons belonging to the fishing community. Members in the family of a fisherman are engaged in one or the other of the several occupations such as (i) Fish catching; (ii) Sorting; (iii) Selling; (iv) Processing including salting; (v) Knitting of nets and its repairs, etc. Normally, the adult male members do the catching of fish and the female members as well as the younger members of the family do the other allied activities from sorting to the selling of the fish. Fishing industry is seasonal and depends on the high and low tides of sea. During monsoon which is off season for this industry, the fishermen occupy themselves in mending or repairing their nets.

5.10. There are about 43 fishing centres or fishing villages in the region. Of these fishing villages, 15 are in Greater Bombay, 11 are to the north of Greater Bombay and remaining 17 are to the south of Greater Bombay. Among these 43 fishing villages or centres, Versova and Danda from Greater Bombay, Arnala, Bassein and Uttan from Bassein Taluka and Karanja from Uran Mahal are important from the point of quantity of fish catch. The number of fishing boats is also considerable at these centres. There are about 2,870 fishing boats in the region which include 825 mechanised boats, 757 sailing boats and about 1,293 tonnies. The total annual fish catch at all the centres together is estimated to be about 77,240 tonnes valued at Rs. 328.27 lakhs. The annual fish catch

from the centres in Greater Bombay is estimated to be about 34,190 tonnes, about 12,000 tonnes being at Versova alone. The details of fisheries statistics are given in Table No. 5.8. The annual fish production is expected to go up by 28 per cent. by the end of Fourth Five-Year Plan.

5.11. Assuming that about 10 acres of land is required per fishing unit of 25 boats (excluding tonnies) for the purpose of drying of fish, nets, storage of boats, ware houses, processing plants, ice-factory and cold storage, workshop, fish market and housing of fisherman the total requirement of land is estimated to be about 650 acres for all the fishing villages together in the region. Village-wise requirement of land for running fishing industry is indicated in Table No. 5.8. Of these villages, Versova and Danda in Greater Bombay and Arnala, Bassein, Uttan and Karanja outside Greater Bombay in the region can be developed as modern fishing centres with facilities such as a cold storage, a workshop for the repair or for building of shipping boats, open spaces for fish drying and housing colonies of the fishing community.

5.12. Fishing in the region is a very important occupation which will add to the total food production. Fishing and the developing of fishing communities deserve greater attention in town or regional planning, than appear to have been given heretofore. Requirements of fishing communities in terms not only of finance and equipment but also in terms of space and area requirements must be correctly anticipated and provided for in town and regional plans to ensure that better off people and more sophisticated users do not drive away fishermen from desirable locations.

#### **Agriculture**

5.13. In the region outside Greater Bombay, agriculture has been the principal occupation for 47.51 per cent. of the workers. Therefore, in spite of rapid industrialization in Bombay and environs, agriculture still remains a principal occupation in the Region. At the same time the condition of agriculture in the Region is not satisfactory. Owing to the hilly tract and large forest areas, the land available for cultivation is quite scanty considering the number of dependents on it. According to the land-use data available for the region, hardly about 37.85 per cent. of the geographical area of the region was sown under crops during 1962-63, whereas the land which was available for cultivation formed only about 58 per cent. The pressure of rural population on land is indicated by the extent of cultivable area available per person, whereas the under-employment in the rural area is indicated broadly by the area sown per agricultural worker in the region. The per capita cultivable area for the rural population is as low as 0.89 acres whereas the gross sown area per worker engaged in agriculture is hardly 1.61 acres.

5.14. The land holdings in the region are very small. About 55 per cent. of the cultivating households had land holding below 2.5 acres with another 27 per cent. of the cultivating household had land of size between 2.5 and 4.9 acres. Over and above the low availability of land in the region there is only one agricultural season in region due to lack of and limitations of irrigational facilities.

5.15. We would recommend that irrigation facilities in the region should be increased and further studies may be undertaken at an early date to explore the possibilities of irrigating large areas in Bhivandi, Panvel and Karjat Talukas and Uran Mahal through a series of canals drawing from chain of storage tanks in the Ulhas and Patalganga valleys.

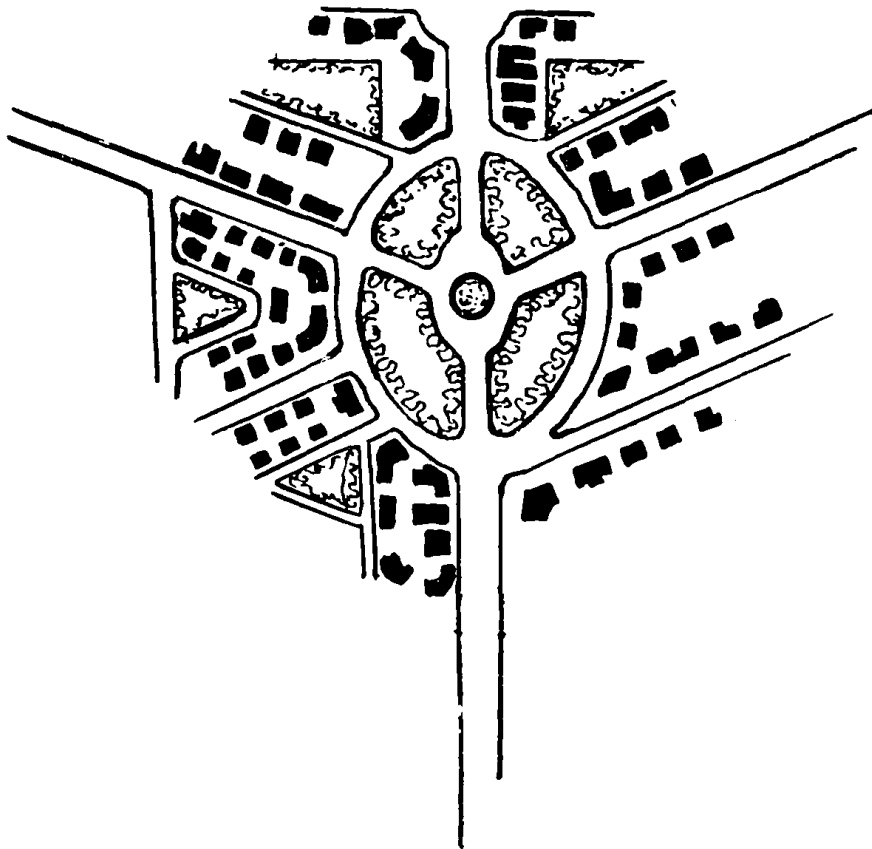
5.16. In view of the low proportion of area under cultivation we also consider it necessary to see that there is as little encroachment on good agricultural lands as possible in selecting sites for new town centres.

#### **Forest**

5.17. The region outside Greater Bombay has almost 30 per cent. of the land under forest. From the point of view of forest produce, forest land from Thana, Bassein and Bhivandi are more important. Timber and coal are principal forest products in the region. The total value of the forest products was Rs. 42.49 lakhs during 1962-63. Of this total yield from the forest, products worth about Rs. 37.31 lakhs came from the forest in the



Taluka of Thana, Kalyan, Bassein and Bhivandi. The yield from timber and coal was of the order of Rs. 42.02 lakhs during 1962-63. There are two fullfledged Forest Divisions, separately for the 4 talukas in Thana and for the 4 talukas in Kolaba District. There should be scope for exploitation of other forest products such as for example bamboo. Considering the multifarious use of bamboo and the extent to which this forest produce can provide a profitable cottage industry to the rural artisans, mostly from the scheduled castes and scheduled tribes, the cultivation of bamboo in the forest land might be increased with profit. Since a large area is under forests, some forest based industries could be located in the north of the region and the possibilities in this respect deserve to be further explored.



## CHAPTER VI

### COMMUNICATION AND TRANSPORT

6.1. The whole problem of the development of communications within Greater Bombay has been recently studied by experts and we need not dilate on it. A brief description of existing conditions regarding the communications system in Greater Bombay based chiefly on the information contained in the Development Plan of Greater Bombay is set out below. The arrangement of arterial roads on Bombay Island has been guided by several factors. The geographical features of the island have naturally tended to a north-south orientation of roads with limited road connections with the suburbs. A second major determinant of the system is land use. It accounts for the convergence of several routes at the centre of commercial and Government activity in the Fort as well as for the relatively sparse road development in the vicinity of the Mahalaxmi area. The period of construction of the roads has also some influence. In certain typical central business areas many streets have assumed a character suitable for pedestrian and cart traffic alone.

6.2. The efficiency of a road system is usually judged by the speed with which traffic from the central area can reach the outskirts of a city during peak hours. From the studies made and the relevant data it is evident that in the city proper low speeds are obtainable on several roads. The suburban arterial roads permit speed of less than 20 m.p.h. The speed of buses is reduced to 8 m.p.h. The slow movement of traffic means loss of time and energy of lakhs of commuters. Time factor is important for commercial vehicles also.

6.3. The intensification of volume of traffic as it approaches the Bazar Gate area and Fort is particularly noteworthy with the north-south movement of 53,000 fast vehicles daily approaching the island increasing to 1,64,000 along Maulana Shaukatali Road and 1,62,000 crossing Carnac Road. The volume entering the Fort from the south is about 54,000 vehicles per day. The travel pattern indicates the importance of the central business district as the focal point of traffic movement. The volume increases as the distance from the central business zone decreases.

6.4. Movements of heavy truck comprised approximately 72 per cent. of the total truck trips. Retail and wholesale goods accounted for 41 per cent. of these trips and construction materials 5 per cent. Forty-two per cent. of all the heavy truck trips were made by empty vehicles. Other trip motivation accounted for 12 per cent. of the heavy truck trips. Truck registration during the period 1952-62 has witnessed an increase from 6,843 to 14,326. The quantum of commodities carried by rail had likewise increased by about 105 per cent. during the same period and during the passage of years a phenomenal rise could be expected. Bombay has no specially designed truck termini. Trucks are to-day seen parked along the curb line in certain areas in the vicinity of the port and other warehousing and wholesale marketing activities.

6.5. Streets are primarily meant for the movement of vehicles and not for the storage of vehicles. The parking of cars on the carriageways of arterial roads is a waste of valuable road space resulting as it does in the sacrifice of traffic lanes which are urgently required for the continuous flow of traffic. Expensive street widening schemes in built up areas are thus rendered ineffective. Greater Bombay to-day has no facilities for off street parking.

6.6. We note that while the road system in Greater Bombay has been studied attention has not yet been paid to the problem of mass transportation. This requires to be studied carefully at an early date.

6.7. The traffic of the port has been steadily increasing. The total traffic, which was 6.99 million tonnes in 1950-51 rose to 14.72 million tonnes in 1960-61, registering an increase of about 108 per cent. over a decade. In 1962-63 the traffic rose to 15.94 million tonnes and the figure for 1963-64 is estimated at about 17.40 million tonnes. The traffic handled at the bunders and at the docks has risen from 4.97 million tonnes in 1951-61 to 6.93 million tonnes in 1962-63. As against this, the capacity of the docks is estimated at 6.70 million tonnes.

6.8. The capacity of the Bombay Docks, after the completion of the recent extension project is estimated at about 8.20 million tonnes, as against which the traffic which the docks will be called upon to handle is expected to rise to 8.6 million tonnes by 1970-71, and is expected to rise still further over the following decade. It is clear, therefore, that the Dock Expansion Scheme can only be regarded as a short-term measure of expansion which has to be executed urgently to provide some reserve capacity and to accommodate the traffic which has increased steeply in the last decade. If the present expectations regarding future increase in traffic are correct, a further measure of expansion is necessary. It would appear, however, that with the execution of the Dock Expansion Scheme the limit of expansion of the existing docks will have been reached. The City of Bombay is getting more and more congested and it would not be wise to siphon through its crowded road and railway systems any large additional port traffic.

6.9. Information regarding the volume of traffic on the main roads passing through the mainland region are available as a result of the Road Traffic Survey carried out at various focal points in May 1965 by the Regional Transport Survey Unit under the Finance Department of Maharashtra State.

6.10. The results of this survey are yet at the tabulation stage. But the data available from the partial tabulation of the survey which is given in Tables 6.2 and 6.3 reveal that the vehicular traffic on Bombay-Agra and Bombay-Poona roads at the focal point Thana was almost two to three times the vehicular traffic on other important roads in the region. The number of vehicles of all types passing on both the sides of the road at Thana on the Bombay-Agra Road was 3,590 per day and those on the Bombay-Poona Road at the same focal point was 2,646 per day. At Bhivandi the traffic on the Bombay-Agra Road was 2,542 vehicles per day whereas at Panvel the traffic on Bombay-Poona Road was 3,203.

6.11. At Panvel it was also observed that the volume of daily goods traffic originating from various places which passed through or terminated at Panvel was 73.79 lakh kilos ; of this 35.32 lakhs kilos of goods originated from places within Bombay-Metropolitan region, 28.01 lakhs of kilos originated from other places outside the region but within Maharashtra and the remaining 10.46 lakh kilos originated from places outside Maharashtra. Further of the 73.79 lakh kilos of goods 37.81 lakh kilos were scheduled for places outside the region but within the State and the remaining 10.73 lakh kilos were scheduled for the places outside Maharashtra State. Of the total goods of 37.81 lakhs destined for the places within the region 36.12 lakh kilos were bound for Bombay alone. Also of the total goods of 35.52 lakh kilos originated from the various places in the region 34.12 lakh kilos had origin in Bombay alone. This indicates the dominance of Bombay in the entire region.

6.12. The facts regarding the existing situation set out above greatly strengthen a number of recommendations made in this report. The enormous concentration in the area at the southern end of the Island of all kinds of activities has already led to an almost impossible situation. Any further increase in truck traffic on the Island or in the traffic at the port must cause anxiety. The shifting of industry, of legislation and administrative activity or of truck and railway terminals, etc. from the Island are seen to be urgently required.

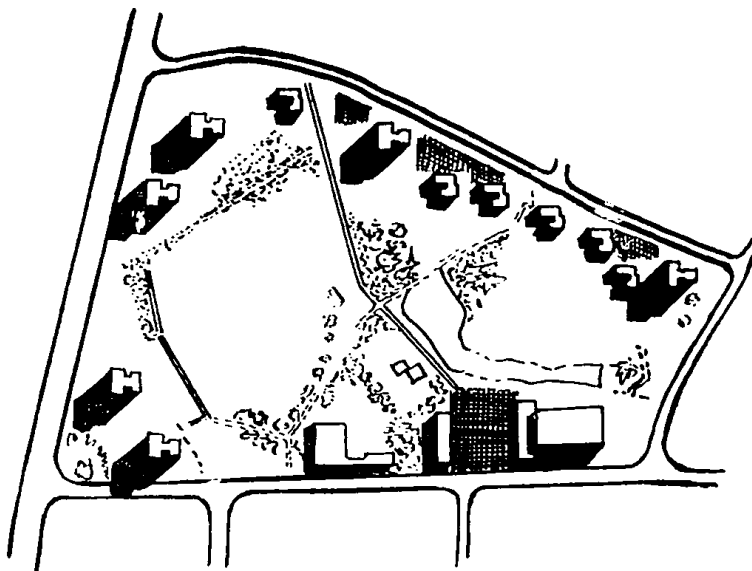
6.13. We may draw attention to the very high costs to society of the deteriorated transport situation in Bombay. The estimated costs of three items of road development in the plan of Greater Bombay, viz. freeways, Express ways and major routes is Rs. 96 crores ; this may be compared with the total expenditure on road development in the State by the Government of Maharashtra which was Rs. 30 crores in the 3rd Five-Year Plan and is proposed to be Rs. 80 crores in the 4th Five-Year Plan. It may be added that in case it is considered necessary to build an underground railway in Bombay this alone is estimated to cost Rs. 75 crores. It is obvious that unless steps on lines suggested by us are taken the situation will worsen and the costs become even higher than now estimated.

6.14. The main feature to which attention may be drawn in relation to the mainland is the overwhelming importance of the Bombay-Agra and the Bombay-Poona Roads. Development of industrial or other activity in the mainland region will inevitably add to the load of traffic on these roads. The approach to the main hinterland lies through the two main ghats. The possibility of adding to the number of routes is remote and the cost of

improving them becomes progressively very high. This reinforces the plea for strictly limiting the extent of industrialisation of the mainland area within the Bombay metropolitan region.

6.15. As in other respects the development of communications in the mainland region has lagged very much behind the development in Greater Bombay. For bringing about an all-sided and even development of the mainland region it is necessary to correct this disparity. We would draw particular attention to the need for planning a fully developed system of communications in the newly developing industrial centres so that the existing evils of divorce of work and residence, ribbon development, congestion on a few lines, etc. are not reproduced in them. Various developments, such as the establishment of townships, activities of horticulture and agriculture in the rural belts, encouragement to rural industry, development of recreation centres and rural renewal to which we have drawn attention will necessitate a prior development of the communications system of mainland area. For this provision will have to be made in the regional plan.

6.16. We would finally draw attention to a recommendation of the Inland Water Transport Committee which does not seem to have received adequate attention so far. It would provide considerable relief to road and rail transport in Greater Bombay if waterways could function in the manner indicated in the report. We recommend that the possibilities should be fully explored at an early date. Prospective development at Uran, Panvel and the Thana-Belapur belt add to the importance of developing the waterway system.



## CHAPTER VII

### UTILITIES AND SERVICES AND AMENITIES

#### Water Supply

7.1. The water supply potential of Ulhas and Patalganga valleys was examined in the Master Plan report of Patalganga and Ulhas Valleys by Shri B. S. Apte. We understand that there would be no difficulty in the water planning of the entire region in an integrated way as it is possible to treat the Patalganga and Ulhas Valleys as one single unit and it is possible to divert waters of one valley into another. All existing water supply Schemes and storages in the region are however, fully utilised at present and there is no spare water available from these storages. In fact, steps are immediately necessary and are contemplated to augment the water supply to Bombay. The M.I.D.C. is also executing a Water Supply Scheme in the region viz. the Shahad Scheme for supplying water to industries along Kalyan-Shil Road and to residential areas in Kalyan-Dombivali. However, if development of new town centres and the development of agriculture by extending larger irrigation facilities is to be accelerated, new water supply projects would necessarily have to be planned and undertaken well in advance. We consider that advance action in respect of water supply is very necessary as development cannot proceed anywhere quickly if this essential supply is absent. We also consider it necessary in order to avoid duplication of work in the distribution system, to plan immediately for total requirement of industries and townships instead of catering only to industries.

7.2. In the rural areas of the region about 77 villages have no source of water supply at all for drinking purposes and water supply was not adequate for part of the year in 387 other villages in the region. This was revealed from the Census of village water supply carried out by the C. D. Block at the instance of C. D. Ministry, Government of India. The difficulty was more felt in the talukas of Kolaba district. Rural water supply must obviously receive close attention in the Regional Plan.

#### Electric supply

7.3. We understand that there would be no difficulty so far as availability of total electrical energy in the region is concerned. To meet the rising power demand of the industrial belt of Bombay area two additional 220 KV transmission circuits are being erected from Koyna Power Station to Kalwa and two Nos. 125 MVA, 220/110 KV transformers are being installed at Kalwa Sub-Station. This sub-station is expected to be completed by the end of 1966 and will be inter-connected with Borivali where 3 Nos. 125 MVA, 220/110 KV transformers will be installed and inter-connected with Tata system at Borivali with a view to supply power generated at the Atomic Power Station at Tarapore. A double circuit 220 KV line will inter-connect Borivali and Kalwa sub-stations. The Kalwa sub-station will also be inter-connected with the Nasik Thermal Power Station Project under which it is proposed to erect a 220 KV double circuit line from Nasik to Kalwa with installation of 2 Nos. 125 MVA, 220/110 KVV transformers at Kalwa.

7.4. As far as rural electrification is concerned about 57 per cent. of the population residing in 16 towns and 119 villages in the region outside Greater Bombay has been provided with electricity. Rural electrification has been more wide spread in the Talukas of Bassein, Kalyan and Uran as can be seen from Table No. 7.2. It will be necessary to provide in the plan for the needs of the remaining parts of the region.

#### Sewerage

7.5. Ninety per cent. of the water supplied to townships can return back to the land in the form of sewerage. This water after suitable purification could be utilised for agriculture. Areas necessary for sewage farms around towns should be worked out and provided for in the Regional Plan. Harmful industrial effluent would have to be treated properly before discharge and suitable norms should be enforced for this purpose.

#### Facilities for play and recreation

7.6. One of the most important aims of the attempted decongestion of Bombay is to bring in a minimum of open space into the Island City. The plan for the suburban area would also make suitable provision for open spaces, parks, playgrounds, etc. Special

attention will have to be paid to two aspects in planning of this feature in the mainland region. In the first instance, it is essential to provide for adequate play, recreational and amusement facilities in the township and all centres of population on the mainland. In their absence, people may be unwilling to settle in these centres or commutation to centres of amusement in the city may emerge. Secondly, in the mainland region spots can be specially developed as the open air, play and recreational centres for the entire population of the region. Several such spots exist in the region which are already partially developed from this point of view. Wajreshwari in Bassein taluka, Elephant Caves on the Elephanta Island near Bombay, the National Park in the Bombay Corporation limits are some locations already developed to some extent. But several spots of natural beauty could be developed in the wooded and hilly areas of Bassein, Panvel and Thana talukas and several along sea-shore of Thana, Bassein and Uran. The development of out-door and week-end recreation facilities for the Bombay-man as well as for other residents of the region should receive greater attention and should be thought of and provided for in the regional plan along with town level facilities at town centres.

#### **Education and public health**

7.7. Condition in schools in Bombay Island reflect extreme congestion. Cramped class rooms, resort to shifts, absence of play space can all begin to be remedied when a minimum of decongestion and restoration of open space takes place. In the suburban plan, it is expected that the planning of proper neighbourhood communities will prevent the emergence of unfavourable conditions and will lead to diminution of an unfortunate present feature, the commutation of school children.

7.8. The concentration of all activities and facilities on the island and the consequent deprivation of other areas is most glaringly brought about by the juxtaposition of the almost complete lack of educational and medical facilities in the mainland region with their relative abundance in Bombay. Facilities for Secondary School education are inadequate on the mainland outside a few urban centres and facilities for higher education are absent even at a place like Thana. This uneven distribution leads both to commutation and migration. A planned extension of educational facilities in urban centres and rural areas must obviously form part of an integrated plan of development.

7.9. Concentration, on the onehand, and gross inadequacy, on the other, characterise the distribution of public health and medical facilities also. It is reported that as a result large numbers from the mainland part of the region have to seek them in Greater Bombay or even Poona. It is expected that this disparity will be corrected as a result of planned development and that people residing even in the villages in the mainland region will have available appropriate educational and medical facilities at suitable centres.



## CHAPTER VIII

### HOUSING

8.1. Bombay city had always been deficient in housing for the working and poorer classes. Adequate housing was, however, available for the middle and higher income groups. Housing had always been considered, in the main, as a responsibility of private activity. It was only to deal with the acute deficiency in the housing of the poorer working classes that schemes of construction of low rent tenements were undertaken originally by the Improvement Trust and after its amalgamation by the Bombay Municipal Corporation. Government also entered the field through the Development Department.

8.2. The deficiency which used to be confined to poorer and working classes has now spread to almost all the levels. The construction of ownership flats has, to a limited extent, met the need for the housing of the highest income groups, though it has brought in its wake many other problems. But the middle and lower income groups, as well as the working and poorer classes are all now experiencing acute difficulty in finding accommodation and this has to be taken up almost entirely by public bodies such as the Municipal Corporation or the Government and its agency, the Housing Board. This is obviously the result, in the first instance of the very rapid increase in the population of the city that took place after 1941. Studies undertaken in connection with the preparation of the 1948 Master Plan for Greater Bombay revealed conditions that were already critical. Since then the continued growth of population without an accompanying increase in house building activity has brought about a situation which is conceded by all to be more or less desperate.

8.3. Regarding housing shortage, the Study Group in its report had observed as follows :—

“There are presently about 4,08,100 tenements of all categories in the Island of Bombay and about 1,65,600 tenements in the suburbs. There is thus a total accommodation of about 5,73,700 tenements in the whole of Greater Bombay which (over-looking that a large proportion of these tenements are single room) may be said to be enough to accommodate at the rate of 5 persons about 28 lakhs persons. Considering the fact that the existing population is about 43 lakhs, it may be reckoned that about 15 lakhs persons need accommodation and it would require about 3 lakhs new tenements to house them.”

8.4. In the Development Plan for Greater Bombay the deficiency in the number of tenements on the basis of 1961 population taking each family unit to comprise of 5 members on the same basis as the Study Group, was calculated in the following manner :—

		Tenements required in 1961	Tenements existing as on 31-3-1961	Deficit
City	...	5,53,800	4,38,491	1,15,309
Suburbs	...	2,07,200	1,93,013	14,187
Extended Suburbs	...	68,800	67,644	1,156
Greater Bombay	...	8,29,800	6,99,148	1,30,652

8.5. The large difference between the two estimates arises out of (i) a high estimation of population by the Study Groups and (ii) varying figures of the number of existing tenements. According to the Development Plan the number of tenements in 1961 was 6,99,148 as against the total number of 5,73,700 tenements assumed by the Study Group. It needs to be noted that the fall in calculated requirement is due to some difference in basic data and not to any real improvement in the situation because of rapid construction of new tenements. That the situation in fact is rapidly deteriorating is made clear by calculations regarding deficiency in 1964 made on a basis comparable with that of the Development Plan. The population of Greater Bombay estimated according to the formula of the Director General of Health, New Delhi, was 46,51,422 and the number of tenements required was 9,30,284. The actual number of tenements existing as on 31st March 1964 was 7,60,429. The deficiency of tenements for the 1964 population was thus 1,69,855.

This would mean that the deficiency has been increasing and within 3 years from 1961 to 1964 it increased by nearly 40,000 or by about 30 per cent.

8.6. The position is seen to be much worse if account is taken of the fact that in Bombay the number of buildings which have deteriorated and which are in a dilapidated condition run into thousands. A survey of the physical condition of buildings undertaken in the year 1956 revealed that out of the 36,000 residential buildings in the city investigated, 17,490 buildings were in bad condition and out of these 8,630 or nearly 50 per cent. were more or less in a dilapidated condition. Of these 764 buildings were in such a state that they should have been demolished immediately; 4,317 buildings were required to be demolished within five years and remaining 3,549 buildings were expected to last for 3 period of 6 to 10 years. By 1966 it was expected that 8,630 buildings were definitely to be demolished dishousing 1,04,270 families. In addition, there had been gross over-crowding particularly in one-room tenements. Lastly, there were those who were not having any houses at all but were existing on foot-paths and in insanitary huts. It was estimated that to meet the requirements of foot-path dwellers and for the hutments to be removed, at least one lakh of tenements were required to be constructed.

8.7. As against the requirements evaluated in various ways that which was achieved as a result of the combined effort of the Housing Board, the Municipal Corporation and the private sector for the lower income group does not touch even the fringe of the problem. Housing situation has been progressively worsening particularly, as far as the lower income group housing is concerned.

8.8. Housing of a basic minimum standard is an essential prerequisite of life and if that is not provided in a regulated way, the people will be driven to make one make-shift arrangement or another. The very ugly hutment colonies resulting in the worst slums in Bombay are an example of the population being driven to make their own make-shift arrangements.

8.9. There are two vital components in Housing. One is the land and the other the actual structure. In respect of the structure, adequate standards of accommodation as well as of building materials have been from time to time prescribed. Building By-laws have been prescribed to ensure that constructions do not result in slum conditions. In respect of land, the situation is some what different. Mere adequacy of existence of land will not suffice. It should be available for the category of housing which is required. It needs to be recognised that if the total population of a city is to be provided with basic minimum housing, then adequate developed land should be available (or made available) for undertaking the housing.

8.10. Adequate return for the capital invested is a normal requirement in any form of investment. In respect of housing, the return would be in the form of rent. But it is a well known fact that it is not possible for all sections to pay adequate rents. There would be always sections of people for whom, it would be essential that the housing is subsidised. From this point of view it would be essential to concede that land at not too exorbitant a rate is available and is made available to the people who are to construct tenements.

8.11. It would be essential, if slums are not to spring up anywhere and everywhere and reduce the urban population to live in miserable conditions, to accept the following as a vital part of the Regional Development Plan :

(i) It will not suffice that sufficient area for residential user is designated.

(ii) The public authorities must actively move in the matter of providing residential accommodation.

(iii) To enable the public bodies as well as the private parties to undertake housing, adequate land with basic services developed would be essential.

(iv) If the criterion that there should be an adequate return on the capital invested though not immediately but over a period is to be adopted in the case of housing, the natural corollary would be that every tenement must be let out at standard or economic rent and considering the cost of land and the cost of construction, the rent would be exorbitant. It would, therefore, be essential to concede that there must be an element of subsidy in housing. It is true that the greater the subsidy the smaller would be the field which could be covered by the public authorities. Therefore, the subsidy will have to be as low as possible.



(v) This being the case, it is essential that the cost of construction as well as the cost of land should be low. Special attention should now be devoted to the evolution of building materials which would be cheap and durable. More important, it would be essential to ensure that land prices do not skyrocket to foul all housing schemes.

8.12. It is necessary, therefore, to have a requisite legislation for either pegging land values or in view of difficulties that this legislation has encountered to have large programmes of buying up land. At this stage, a reference to the White Paper on Land Commission in England which was published on 22nd September, 1965 may not be considered out of place.

8.13. The following remarks in the White Paper are highly relevant in respect of the situation of land prices in Bombay :—

“A growing population increasingly making their homes in great cities has not only made effective public control over land indispensable, it has also made indefensible a system which allows land owners or land speculators wholly to appropriate the increase often very large, in the value of urban land resulting either from government action whether central or local or from the growth of social wealth and population”. “..... These prices which must be paid by public authorities buying land for their essential purposes, place a heavy burden on their financial resources; they are also a deterrent to people wishing to buy their homes.” “..... In the Government's view it is wrong that planning decisions which are public decisions about land use should so often result in the realising of unearned increments by the owners of the land to which they apply and that desirable development should be frustrated by owners withholding their land in the hope of higher prices.”

8.14. These observations apply fully to the situation about land values in Greater Bombay and no commentary is needed in respect of them. In England a “Land Commission” is proposed to be formed to remedy this situation which will ‘buy all land needed for development’ to secure “that the right land is available at the right time for the implementation of national, regional and local plans” and also to secure “that a substantial part of the development value created by the community returns to the community and that the burden of the cost of land for essential purposes is reduced.”

8.15 We would recommend that Government may consider the setting up of a similar land commission in this State and vest it with the requisite legal powers.

8.16. Confining subsidised housing to industrial workers is not a useful measure from the point of view of city planning and development. Industrial workers fall, in fact, among the higher income groups of the strata for whom specially cheap housing has to be provided. There is, for example, the large mass of unskilled casual workers in construction, transport, etc. industries with low earning capacity. Much larger programmes of subsidised housing than are now contemplated are thus needed. The backlog in relation to those with practically no housing is already large; to these an annual addition will be made even if our recommendation for not enlarging the industrial base is accepted. Therefore, in addition to large programmes of subsidised housing some effort must be made to improve, as a transitional measure, the condition in the existing hutment areas. The problem deserves deep and careful consideration. Three types of action appear essential. First to demarcate plots on which such colonies stand or may be established and bring them under the control of a public authority; second to make provision of public convenience and amenities and thirdly, to supply materials to bring about a public, co-operative or individual supply of hutments of atleast a minimum standard of convenience. There are examples of such action in cases of other developing countries.

8.17. At present it is estimated that there are over 44,000 huts existing spread over in a number of colonies in Greater Bombay. Perhaps 50 per cent. of them are people who are in a position to pay some sort of subsidised rent if a constructed tenement is given to them. But the remaining 50 per cent. are people to whom arrangements can be made only in hutment colonies where a site can be given by the public authority and the party himself constructs his own structure. The basic amenities must be provided by the local body.

8.18. Even in respect of future and continuing developments, it would appear, there would be sections of population who are unable to pay even the most heavily subsidised

rent. As long as industrialisation and urbanisation go on unabated acting as attractions to the village population where their own existing living conditions are not much to speak of, the inability of the tenants to pay even the subsidised rents has to be conceded and taken care of. Such sections would naturally be compelled to put up huts in haphazard manner and start living on footpaths and in deplorable conditions. For sometimes we may have to reconcile ourselves to the fact that huts are inevitable ; but the huts themselves will have to be put up in an orderly manner and at designated places which are located conveniently in relation to the employment of hutment dwellers. The environmental hygiene must not be allowed to deteriorate below a point. It would, therefore, be essential for the Corporation, the housing authority or the development authority, as the case may be, to prepare alongside their schemes of housing also schemes of developing vacant lands with the provision of basic amenities where alone hutment colonies could come up.

8.19. During the last decade slums and hutment colonies have made their appearance to a considerable extent in the suburbs and the mainland and even in cities like Poona and conditions in these are almost as bad as those in similar areas on the Island. This makes clear that the emergence of, for example, hutment colonies is not a function only of the non-availability of land. It results from the conjunction of a number of factors, the main among which appear to be : a rapid growth of working population through immigration, absence of planned land-use, high prices of land, inadequate housing building activity, public and private, and inability of large number of families to pay a substantial amount as rent. Action in relation to all these must be taken in all future plans of development.

8.20. We would, therefore, urge the acceptance of the principle that public provision of housing on a scale which is significantly related to the projected growth of economic activity and population is vitally necessary in all plans of development of urban and industrial areas.

8.21. We would reiterate that by a regional plan of development we mean not a blue-print but a whole series of policy decisions, regulatory measures and financial provisions which will enable the blue-print or the document to come alive. The basic mistake of the last fifteen years was to allow immigration and growth of population without making any provision whatsoever for this growth. In future, plans of growth of activity and population in various locations must be accompanied by the needed provisions of overheads and services, of shelter and communications for the people and the activity. It is only when this responsibility is accepted that the apparent callousness of letting things drift will be avoided.

8.22. Finally, there are two aspects of the problem of Greater Bombay which we would specially emphasise. Extremely high costs are involved in all operations relating to Bombay as it has been allowed to develop. These are evident in all directions.

8.23. Studies in most countries have shown that the per unit costs of providing socio-economic overheads increase after cities reach a moderate size. We have not been able to obtain any data relating to Indian conditions on this question. We may, however, refer to a paper in a study published in 1962 which indicates that site improvement costs in terms of rupee per head increase from about Rs. 184 in town of less than 50,000 population to about Rs. 284 in cities with over 5 lakh population. The same paper gives the following information for the year 1951 :—

" In 1951-52, municipal expenditure were around Rs. 10 per capita in Rajkot, Rs. 15 in Baroda, and Rs. 40 in Bombay (excluding the independent public corporations). If the critical civic needs of all three communities were met, the differential would probably be greater. Similar evidence is available on the cost of typical one-room public housing units, built to national standards by Bombay State in the three communities a few years ago : Rs. 2,800 in both Rajkot and Baroda, and Rs. 4,500 to Rs. 7,500 in Bombay, depending on density and land cost. According to their respective Socio-Economic Surveys : incomes were somewhat higher in Bombay than Baroda, but housing congestion was far worse".\*

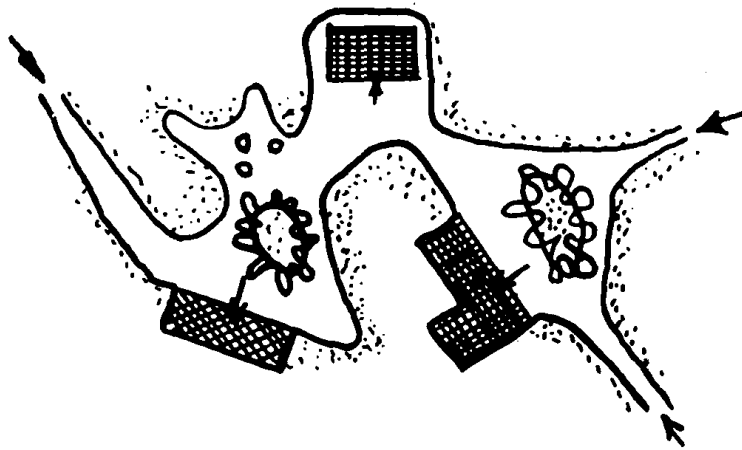
8.24. It is likely that the disparity in unit costs to-day is much greater than it was in 1951. Apart from these calculations we attach great importance to the relative sizes

\* India's Urban Future (Edited by Roy Turner), p. 293.

of estimated expenditures. We have already referred to some figures on expenditure on transport. Similar comparison may be made in relation to housing. The Study Group estimated that its proposed programme of building 20,000 tenements a year would cost annually Rs. 16 crores. This may be compared with the total expenditure of about Rs. 14 crores incurred by the Government of Maharashtra on Housing and Urban Development for the State during the period of the Third Five-Year Plan and of the total of Rs. 39 crores proposed to be spent for the purpose during the entire 4th Five-Year Plan.

8.25. In the main, these are costs of the neglect of the situation during the last fifteen years. The costs are also human, realised in the miserable conditions of life and work for very large numbers in the city.

8.26. The other aspect is that resources absorbed in Bombay city are resources denied to other parts of the State. Development everywhere suffers because conditions in Bombay city have been allowed to reach desperate straits. And the root-cause of it all is the enormous concentration of activity and population that has been allowed. The costs needed to remedy the situation have to be incurred; but if our analysis is correct it also follows that to prevent even worse situation in the future there must be vigorous efforts at deconcentration and decongestion and all steps possible be taken to achieve these early.



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**. PART III**  
**(REPORT—POONA REGION)**

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## CHAPTER IX

### HISTORICAL BACKGROUND AND PRESENT POSITION

9.1. From the beginning of the 18th Century the City of Poona gained importance and became progressively prosperous under the rules of Peshwas who adopted Poona as their capital and Poona City served as an important administrative, military and commercial centre in Western Maharashtra. After the fall of Peshwas a period of stagnation set in. Poona regained its importance by the end of 19th Century as the seasonal capital of the State and a military station under the British rule and as an educational centre. The chief functions of the City remained administrative, military (defence) educational, residential and commercial almost from times of Peshwas upto the beginning of the Second World War. The city experienced only moderate growth and did not face serious problems of urban agglomeration till the forties.

9.2. The installation of defence industry near Poona during the war period resulted in a sudden rise in the population of Poona. After independence and partition there was a further influx of population in the form of refugees mainly from Sindh. During the decade 1941-51 the population of Poona City increased by as much as 70 per cent. During the fifties a considerable growth of industries took place in and around Poona. The Government of India established the Antibiotics factory at Pimpri in 1954. In the following years many big and small industries were established around Poona and thus paved the path of future industrialisation of Poona.

#### (B) Topography of the region

9.3. The area of this region is on the leeward side of the "Sahyadri" hills. It is generally slopping from the West to East. Rivers such as Mula, Mutha, Pavana, Indrayani and Bhima flow through this region towards the East. The soil of the region is brown copper coloured in the West whereas it is somewhat black in the East.

#### (C) Climatology : (Table No. 9.1)

9.4. The temperature of the region is moderate throughout of the year. The maximum temperature recorded during the last 60 years is 110°F. The temperature is lowest in the month of December and rises steadily upto 103°F. in April. The mean rain fall in the region varies from 20" (500 mm.) in the eastern part to 170" (4300 mm.) in the West. In general the climate of the region is healthy throughout the year.

#### (D) Present state

9.5. At present the urban core of the region, that is the Poona Municipal Corporation area, is the centre of diverse functions such as administrative, educational, commercial, residential, etc. The centres of these functions are scattered in the city and if in some cases they display a functional grouping, it is mostly fortuitous and not a result of deliberate planning. The administrative function was centred until recently around two places namely State Government offices in the Central Building near the Railway Station and those related to local self-Government in the Corporation Building.

9.6. Similarly the Poona University campus could be said to be the major centre of higher educational activities and there is some concentration in an area not far from the University in the belt from the Law College to the Engineering College. Other Arts and Science Colleges are located in different parts of the municipal area.

9.7. Professional offices and a number of wholesale and retail markets find their places in the central wards of the city. The wholesale market location appears proper from its proximity to the retail shopping area but planning thought is evidently necessary to connect it with the railway junction and the important trade routes from Sholapur, Bombay and Bangalore. Considerable planning effort would also be necessary to improve the internal communications pattern for the wholesale market and the provision of warehousing facilities and to remove incompatible residential use.

9.8. The defence establishments have been located in the Poona and Kirkee Cantonment areas and also in parts of municipal corporation in the villages Pashan, Aundh,

Logogaon, etc. Defence organisations have thus occupied very substantial proportions of the Poona Municipal area in different directions. This location of defence establishments in different parts has created certain problems in respect of development in the civil sector.

9.9. Industries are located mostly on the fringes of the municipal area notably in Hadapsar, Yeravda, Dapodi and Kirkee. They are in some cases inter-mixed with suburban housing. The nuisance created by industries by way of noise ; heavy truck traffic, fumes, etc. is already felt in some suburban areas. The location of the industries in Erandavana and Kothrud seems especially unfortunate from the point of view of central wards because the fumes created by the industries in these locations are likely to be transported towards the city through south-western winds. The industrial waste which is disposed in the river is also carried towards the city. The other major industrial complexes a little away from the Poona Metropolitan area are at Pimpri-Chinchawad and at Loni. The bigger of these two is located at Pimpri-Chinchawad where there are about 60 large scale industrial establishments, mostly engineering. The activities of the Maharashtra Industrial Development Corporation are also concentrated in the Pimpri-Chinchwad-Bhosari area. The Electronic Industrial Estate covering all area of 600 acres has been developed by the Maharashtra industrial Development Corporation and plots are being allotted to private industries. The development of industries is only on one axis i.e. on the Bombay-Poona Road.

#### (E) Housing

9.10. The residential areas within Corporation limits could be broadly divided into 3 groups, viz. Central City (17 wards) the suburban areas and the villages included in the Municipal limits. The central city contains the major proportion of the population and within it residential and other uses are badly mixed. The seriousness of this situation was aggravated by the Panshet Disaster of 1961. A number of ameliorative schemes were initiated for housing the dishoused families and schemes of semi permanent and permanent housing were taken up. The new housing colonies were located wherever land was available and the locations were not related to any over-all growth pattern of the city. The disaster created the possibility of eliminating major slum areas situated along the river banks which were uprooted in the Panshet disaster. It was also possible to take permanent measures regarding flood protection, as a large number of houses along the river banks were destroyed. Attention was drawn to these at the conference of citizens of Poona held soon after the flood in which it was suggested that a metropolitan planning authority be set up with a view to preparing a plan for redevelopment of the central area and planning new residential areas in a co-ordinated manner.

#### (F) Communication

9.11. Poona City is located on main trade routes, viz. Bombay-Poona, Bangalore-Poona, Poona-Sholapur and Poona-Nasik. There is heavy traffic on these routes which also passes through the main city. This has resulted in an increase in accidents and in traffic congestion. Most of the roads are not capable of taking modern vehicular traffic. Moreover, indiscriminate use of properties for commercial activities on main roads has increased traffic congestion and added to traffic problems.

9.12. We would indentify the main problems relating to developments of the older city as follows :—

- (i) lack of open space and high congestion of population in the central wards of the city, (ii) movement of traffic in the shopping centres, (iii) location of warehouses and godowns in relation to the inward and outward movement of goods and the movement of trucks within the city, (iv) clearance of slums and movement of population from congested areas, (v) lack of a logical order in the location of industrial areas and housing areas and increase in numbers of commuters as a result thereof, and (vi) partly related to most of these and partly a complex problem in itself the planning of the centre of the city on the two banks of the Mutha.

9.13. The last problem is most urgent and is already engaging the attention of the authorities. We are anxious that the opportunity now open be taken advantage of to provide for the construction of internal express routes on the two banks, to guard against floods, to achieve dimunition of congestion in the central wards and to create a central area worthy of a great city. We recommend that a solution of the problem which achieves these objectives and fits in with the long-term development plan be adopted at an early date.

9.14. Poona is to-day facing grave problems of irregular and unregulated urban growth and preparation of a regional development plan and its execution seem to be already overdue.

## CHAPTER X

### POPULATION

10.1. The proposed Poona Metropolitan area (538.4 sq. miles) which includes 106 villages and 8 Towns/Cities (list attached) had a population of 9.33 lakhs according to 1961 census; of this about 81.9 per cent. lived in urban areas and the remaining 18.1 per cent. lived in rural areas in Haveli, Maval, Mulshi talukas. The region includes the military centres at Dehu Road and Kirkee. In 1961 the population of the region was 7.41 lakhs and during the decade 1951-61 it increased by 12.6 per cent. Poona including the Cantonments accounted 94.46 per cent. of the urban population in the region in 1961.

#### Settlement pattern

10. Table No. 10.1 gives the distribution of population—rural and urban, in various settlements such as villages and towns according to their sizes.

#### (1) RURAL

10.3. The Poona Region consists of 106 villages, covering a population of 1,68,853. About 34 villages fall in the category of the population group ranging from 500 to 999, covering a total population of 26,154 which is nearly 15.49 per cent. of the total rural population. Further 34 villages fall in the category of population ranging from 1,000 to 1,999 covering a total population of 47,632. (28.21 per cent. of the rural population) and 18 villages fall in the group of population ranging from 2,000 to 4,999, covering 51,889 of population (30.73 per cent. of the total rural population of the region).

#### (2) URBAN

10.4. There are 8 urban settlements in the Poona Region, with a population of nearly 7,64,201 population of this Poona City and Cantonments of Poona and Kirkee claim 94.46 per cent. Out of the remaining 5 settlements, 4 settlements fall in the size class between 5,000 to 9,999 covering a total population of 26,694. (3.49 per cent. of the urban population) and one settlement falls in the group of 10,000 to 19,999 accounting for nearly 15,611 of population.

#### Occupational pattern

10.5. Table below sets out the occupational pattern of the population in Poona and other urban and rural areas in the Region.

*Table showing the working population occupationwise in Poona, other urban areas and in rural areas of the Region during 1961 (Figures in 00's)*

Occupational pattern	working population					
	Poona including Poona and Kirkee Cantonments	Percentage to total	Other urban areas	Percentage to total	Rural Area	Percentage to total
Agriculture (including mining and quarrying).	74	3.3	22	14.9	581	74.2
Manufacturing .. .. .	589	26.8	49	33.1	101	12.9
Construction .. .. .	83	3.8	8	5.4	24	3.1
Trade and Commerce .. .. .	339	15.4	11	7.4	16	2.0
Transport and Communication .. .. .	226	10.7	6	4.1	8	1.0
Other services .. .. .	879	40.0	52	35.1	53	6.8
Total .. .. .	2,190	100.0	148	100.0	783	100.0

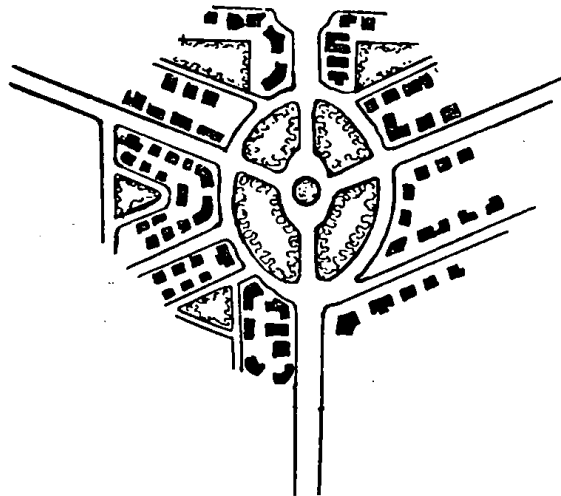
### Migration

10.6. The growth of highly urbanised centres like Poona is influenced greatly by migration from surrounding areas. The rising employment opportunities in new industries coming up near Poona have attracted population from all parts of the country ; most of these have to reside in Poona City because of non-availability of residential accommodation outside Poona City. Table 10.2 gives statistics relating to migration into Poona from different parts of India.

### Population projection

10.7. In the absence of any definite knowledge about the birth rates, mortality rates or the migration rate for the population within the Region estimates of future population upto the year 1991 are obtained by the Ratio Method using the corresponding population projections of the State by Sarvashri Ramchandran and Chaudhari of the Tata Demographic Research Centre, Chembur, Bombay.

10.8. According to the provisional projections made the population of the Poona Region (as shown in Table No. 10.5) is expected to increase from 9.33 lakhs in 1961 to 19.4 lakhs in 1991. Of this population about 15.12 lakhs would be in Poona City and Cantonments of Poona and Kirkee and 1.1 lakhs in other urban areas. The rural population is expected to go up from 1.69 lakhs in 1961 to 3.18 lakhs in 1991.





## CHAPTER XI

### NEED FOR REGULATING POPULATION GROWTH AND SECURING PROPER DISTRIBUTION

11.1. Our population projection indicates that the population of the Poona Metropolitan Region might increase from 9.33 lakhs as in 1961 to 19.4 lakhs by 1991 i.e. that it would be more than doubled during this period. The population of the Poona Corporation area and Poona and Kirkee Cantonments might, during the same period, increase from 7.22 lakhs to 15.12 lakhs, if the same trends of population settlement continue. Urban facilities and amenities at Poona would then have to be more than doubled by 1991 if the existing standards are to be maintained without further deterioration. While dealing with the Bombay Region we have already indicated that unit costs of urban facilities tend to increase after a certain size is reached. Adding to the existing concentration of population also almost always makes it necessary to undertake large scale improvements and re-developments which obviously are more costly, than new developments. This is brought out in relation to the necessity of undertaking a series of road-widening projects in built-up areas of overgrown and ever-growing congested towns, the necessity of acquiring costly built up areas for providing open spaces or new school sites, etc. Though the problems of Poona do not have the same magnitude as those of Bombay, we feel that it is necessary to bear these basic considerations in mind while deciding upon and planning for ultimate sizes of growing towns. The planning of growing towns like Poona must be oriented towards the stabilisation of the population at a desirable optimum figure and towards locating the likely over-spill in suitable new centres in the region.

11.2. All the existing problems of the main city having very high density will be further aggravated if its population size is not fixed in the regional plan along with other centres to have a balanced regional development which is our main objective. The regional plan for the Poona Metropolitan Region has thus to consider the question of optimum population for the Poona City including Poona Cantonment.

11.3. This committee is of the view that Poona including Cantonments should not be planned for a population of more than 12 lakhs and that the regional plan should attempt to stabilise the population of Poona at this figure by proposing advance action for the development of other centres in the region to receive and to provide work for the balance of the likely urban population.

11.4. There is another aspect of the population distribution problem which is connected with establishing a proper relationship between work places and places of residence and eliminating or reducing unnecessary commutation. At present large sections of Poona are merely dormitory areas for the work centres in the peripheral belt, viz. Pimpri-Chinchwad, Dehu Road, Loni-Kalbhor, etc. The Regional Plan of Poona must, therefore, plan for the establishment of proper neighbourhood areas in relation to the existing work centres so that unnecessary commutation is avoided, without creating unplanned and haphazard developments or schemes around the industrial centres.

11.5. Recent developments indicate that Poona is gradually emerging as a centre of modern manufacturing industry. The impact of industrialisation has created a number of complex problems as described earlier. How to weld the new industrial growth in the Poona area without thwarting the original functions of the city is an important problem. The original functions should be expanded and prove more beneficial in association with the emergent function without being affected by it. The original character of Poona City i.e. the educational, the administrative, etc. should be continued as the city is well suited and equipped for these functions.

11.6. New industrial development should be allowed mainly in areas outside the city. Two locations, one which is already developed near Chinchwad, Pimpri and the other which has just started developing, viz. Loni are suggested as future sites for industrial location. It is suggested that self-contained town-ships be planned around these areas, which would depend on the main city only for major activities such as higher education, major shopping, and cultural amenities; the functional characters of these towns would be primarily industrial. The establishment of well-balanced and well-

equipped satellite towns is deemed necessary so that the workers are able to lead a full urban life (without commuting), with diverse educational, cultural and other facilities and are not herded into monotonous, one-class industrial housing. Some of the industrialists in Chinchawad area are contemplating provision of industrial housing for their own employees. Such a development will result in an unplanned mixture of industries and residences and provision of adequate amenities would be difficult. Therefore, instead of such isolated attempt co-operation of different agencies should be brought about for a combined effort to create united, balanced and efficient township.

11.7. The suggested distribution of population in different centres is as under :—

(1) Poona City and Cantonments	...	...	12 lakhs.
(2) New Township at Chinchwad	...	...	1.5 to 2.5 lakhs.
(3) New Township at Loni-Kalbhori and Urali-Kanchan.	...	...	75,000 to 1.5 lakhs.
(4) Rest of Urban Centres	...	...	1 lakh.
(5) Rural Area	...	...	3 lakhs.

#### Areas for Industrial Development

11.8. As it is proposed that within the Poona Municipal Corporation limits the present functional character of Poona should be maintained, the labour force engaged in manufacturing industries should not go beyond the proportion (25 per cent.) observed in 1961 census. The maximum limit for the population within Poona Municipal Corporation area and the two Cantonments is set at 12 lacs, which means that provision for about 90,000 industrial workers will have to be made. Assuming a standard of 30 workers per acre in view of the fact that medium and small-scale industries will be mainly located in this area, the required total area for industrial purpose works to 3,000 acres. This should be chiefly provided in Hadapsar, Mundhawa, Kondhava and Yeravada areas, which are well suited for industrial development. Further industrial development particularly the development of large-scale industry in the Poona Metropolitan area should be located near Pimpri-Chinchawad and near Loni-Kalbhori.

11.9. Study of existing labour density in respect of Pimpri-Chinchawad-Akurdi area reveals that the average density is between 15 to 20 labourers per acre. Presumably many industrial undertakings have acquired extensive areas in this centre to guard against future non-availability of land and also with a view in certain cases, to utilise a portion for housing. But there is no defined plan or policy in this respect. In case the present extent of total acquired land is fully utilized for industrial establishments the population sustained through such development would be very large. The first requirement would, therefore, be to suspend further developments and to prepare a plan for a self-sufficient and functionally efficient township. The best course would be to confine industrial developments to the north of the Pavana river and to plan the residential-cum-trading, etc. unit to the south. In order to correlate the extent of industrial land with total population envisaged for the township it would be necessary to think of ways and means by which industrial development is limited and other uses planned for the excess areas. At an average labour density of 20 to 25 persons per acre in the new industrial centres, extent of industrial areas in the two main centres should be as under :—

#### 1. Pimpri-Chinchawad Township :

Town population : maximum	...	...	2½ lakhs.
Total No. of industrial labourers	...	...	30,000 at 12 % of population.
Industrial zone required	...	...	1,500 acres.
Existing industrial zone	...	...	3,700 acres.

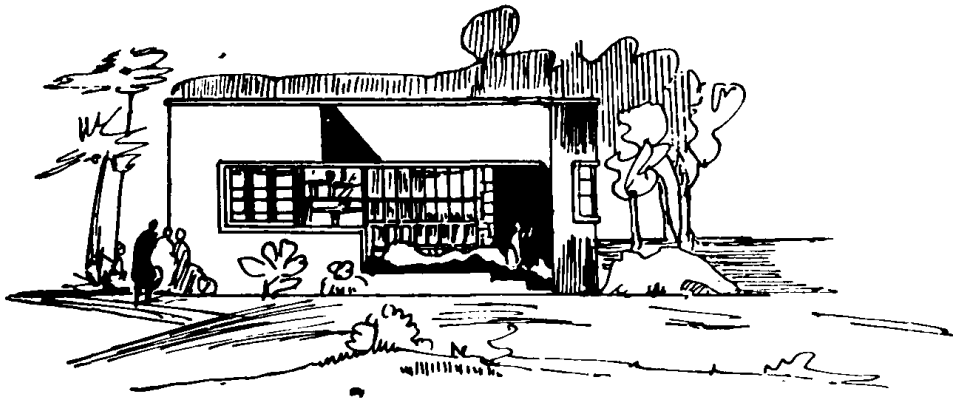
#### 2. Township between Loni-Kalbhori and Urali-Kanchan :

Total No. of industrial labourers	...	...	1.5 lakhs.
Total population : maximum	...	...	18,000
Industrial zone required	...	...	900 acres.
The committed industrial acreage is	...	...	150 acres.

11.10. We note that the existing committed industrial acreage of Pimpri-Chinchawad is excessive in relation to what would be required for the eventual population of this centre and we would recommend that the Regional Plan should give serious thought to the question of how the undeveloped or unutilised excess areas with the Industries could be diverted to other uses.

### Rural Renewal

11.11. While dealing with the Bombay Region, it has already been mentioned that there is necessity of a programme of Rural Renewal for reducing rural-urban migration and rural-urban disparities. We would emphasize in this place the responsibility of the regional authority to plan for the supply of appropriate services and utilities to villages within the region. The existing Mutha Right Bank Canal passes through region along the southern side and it is likely that due to restoration of Panshet and Khadakwasla Dams, ample water for irrigation would be made available through this canal in future. Approximately an area of 48.18 sq. miles is likely to come under command of this canal. Similarly there is a proposal to construct a dam on Pavana river near the village Fagane, taluka Mawal. Water from this dam is likely to be brought in the region through Pavana canals. Mostly this water will be utilised for the industrial development near Pimpri-Chinchawad. However, some amount of water could also be made available for irrigation purposes and approximately an area of 20.75 sq. miles would be under command of these Pavana canals. Large parts of areas under the command of these canals would be suitable for starting activities such as vegetable and fruit farming, dairy farming and poultry farming. Development of such activities in village centres in these areas would be possible and small processing, etc. industries on the basis of local production could also be established.



## CHAPTER XII

### INDUSTRIES AND ITS DEVELOPMENT

#### **Large Industries**

12.1. The table No. 12.1 sets out information regarding registered factories under the Factories Act and industrial workers in different areas within the proposed Poona Metropolitan Area during the period from 1956 to 1963. It is clear from this Table that as many as 86.2 per cent. of the factories employing 73.3 per cent. of the industrial workers in the region, are located in Poona (including Poona City and Poona Cantonment) and secondly that the factories in Dapodi-Chinchawad have grown very rapidly during 1956-63.

12.2. These factories except for the Hindustan Antibiotics at Pimpri, had not provided residential colonies for their workers. As a result centres like Chinchawad were developed almost entirely as work centres. In this respect findings of the Poona Labour Market study conducted by the Director of Employment, Bombay, in 1964, are informative. It is revealed in the study that of the 21,423 workers employed in the sample industrial establishments in and around Poona, which were covered in the Poona Labour Market study, 15,501 resided in Poona City. 83.6 per cent of the 15,501 workers residing in Poona City had their work place outside Poona and had to go daily either by Railway or bus or bicycle to their work. 2,876 workers travelled by railway, 4,440 by the city bus, 3,850 by company buses and the remaining 4,335 workers from the Poona City went on bicycle to their work places. These statistics would give an idea of the extent of traffic or the daily commutation created in the Poona city limits by the industries in the region.

12.3. Factories are being established around Poona, mainly along the major roads viz. Bombay-Poona Road, Nagar Road, etc. Problems arising out of such ribbon development are well known. The ribbon development which is now witnessed along Poona-Bombay Road is detrimental to the Planning of a co-ordinated townships. We have, therefore, suggested that further development should be planned in a big township near Pimpri, Chinchawad wherein all the services and facilities could be provided to the workers having work places at these centres.

12.4. Pockets of industrial development should not be created in the city area. Industrial development in areas like Kothrud, Erandavana, which are mainly suitable for residential development is not desirable. In such cases we would recommend suspension of further development activity in these areas, and a plan of gradually shifting existing units elsewhere. As regards new developments we would recommend concentration in the two specifically industrial townships. This would not mean necessarily an entire prohibition of location of industrial establishments elsewhere; but this should be permitted only for specific groups of industries and in areas clearly demarcated in the plan for the purpose and situated appropriately in relation to the system of communications and to residential areas. The oil, paper and paper pulp and chemical factories which are at present located in Poona City should also be shifted to Loni as large quantity of water would be available for industrial use in this area.

12.5. In discussing developments in the Bombay region we have indicated how the activities of the M.I.D.C. because of their limited scope are likely to create difficulties in relation to future planning. A similar situation has emerged in the Poona region also. We, therefore, recommend that activities of the M.I.D.C. other than those for which irreversible commitments have been made, should be suspended until a plan of regional development has been prepared which fully takes account of their present activities and gives an indication of future possibilities.

#### **Cottage and Small Scale Industries**

12.6. Poona City itself is a well known centre for a number of cottage industries such as carpentry, blacksmithy, metal works, soap making, leather goods making, bricks and tiles, pottery, weaving, dyeing and printing of cloth, bamboo works, etc. Besides Poona, Lonikalbhor, Moshi, Dehu are other important centres in the P.M.A. for cottage industries like tanning, oil pressing, toy making and bricks and pottery. Moshi has potentialities for developing tanning industry while Dehu has potentialities for developing brick making and pottery industries.

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## CHAPTER XIII

### OTHER ACTIVITIES AND THEIR CENTRES TRADE AND COMMERCE

#### Poona City

13.1. The wholesale markets for all commodities, the banks including the District Co-operative Central Bank, the District Co-operative Land Mortgage Bank and many of the business houses are located in Raviwar, Budhwar, Guruwar, Shukrawar and Bhawani Peths of the old city.

13.2. The present wholesale markets, do not have the support of neighbouring warehousing facilities or of a good direct road connection with the Poona Railway Station. The present location is convenient for the offices of wholesalers and wholesale-cum-retail shops. For the storage of bulk commodities, however, it is necessary to provide warehousing facilities in the proximity of the incoming trade-routes from where direct deliveries could be arranged. From the study of commodity flow movement in Poona via different routes it seems advisable to provide for warehousing facilities for commodities like oil, tea, groceries, building material, etc. near the Poona railway goods yards and for agricultural produce, near Bibwe Wadi off Bangalore Road. (A scheme of agricultural produce market at this location is at present in a preparatory stage.)

13.3. Retail shops are located on main roads in Budhwar, Sadashiv, Raviwar, etc. on both sides of the road creating problems of traffic movement as well as of parking. Suitable measures to prevent ribbon development of shops along the Major traffic routes and to ensure convenience of shoppers and to lessen traffic congestion, must be introduced while preparing the redevelopment plan for Poona City. Measures like precinct planning could be used appropriately for the purpose.

#### Administration

13.4. The administrative offices of the Government are concentrated in the area from Sassoon Hospitals to Council Hall and include the offices of the State Government in the Central Buildings, the Collectorate, the State Bank of India, the Zilla Parishad, the Income-Tax department and the Defence offices. The new Government offices are however distributed amongst the residential areas both in the city and suburbs. It is desirable that administrative offices of Government should be concentrated in or near the abovementioned locality. This location is central and it is desirable to remove the pressure of the demand for office accommodation from residential localities.

#### Defence Area

13.5. A special problem created in the Poona region by reason of unregulated developments has been the extensive and scattered acquisition of land by the defence services. Occupation by defence institutions of both sides of the Khadakwasla lake and near the Pashan lake have resulted in depriving Poona citizens of important recreation amenities. It is necessary to review the acquisitions by the defence services and rationalise their location and use at the earliest possible moment. Unless this is done, rational long-term planning for the region may prove difficult. It is important to realise that an additional detour of even one mile on a through route imposes for all times, an unnecessary cost on every vehicle using it. Any calculation of such added cost day after day to the nation will emphasize the need for planning long-term developments very thoroughly and carefully and not letting a false sense of prestige or consideration of some temporary convenience or inconvenience to stand in the way of fully rational planning. Therefore, while recognising the high priority claimed by defence needs, it should be possible to tackle this problem at the highest levels of State and Union Governments. The aim should be to bring about a re-allocation by exchange or other means of the present acquired areas, not actually used as yet so that while serving efficiently the needs of the defence services the distribution of the areas allows optimal regional developments in the future. We recommend that in future all acquisitions by the defence services in the Poona Metropolitan region be confined to its northern sector.

### **Agriculture**

13.6. The total geographical area of the Poona Region is 3,85,546 acres out of which 40,994 (or 10.63 per cent.) acres is under forest. These forest areas are situated in scattered patches and are classified as 'degraded' types of forests. Charcoal and firewood are the main forest produce available from the 'degraded' forests of the Region. Intensive afforestation schemes are needed for affording better vegetation cover. Some part of the region is suitable for protected forest with wild life. The region has barren and uncultivable land of 31,455 acres (8.16 per cent.) and fallow land of 51,662 acres (13.40 per cent.). The net cropped areas of the region is 2,44,439 acres (63.40 per cent.) of which 14,079 acres (6.01 per cent.) land is irrigated.

13.7. The proposed Mutha Right Bank Canal and the Pavana Left and Right Bank Canals would increase the irrigated area of the Region and the use can be made of sewage water after purification for the growth of valuable crops such as sugarcane, vegetables, and fruits within green belts to be provided around the Poona City and between the two proposed townships.

### **Green Belt**

13.8. It is imperative to have extensive green areas on the outskirts or at other suitable sites near the urban centres. Such reservations are essential to delimit urban growth and to avoid urban sprawl along communication lines. The provision of fresh, perishable agricultural products in large quantities to the urban areas could be made with minimum cost and good quality ensured when green belts are reserved near urban areas. These could provide space for dairying and poultry farming, growing fresh fruit and vegetable. The presence of greenery and vegetation around urban area will have beneficial effects on the micro-climate of the city. Certain parts of the green area, which may not be particularly suited for cultivation could be planted with native trees. Such areas and other areas near ponds or lakes would be useful as picnic spots.

13.9. It is proposed that the agricultural land between river Mutha and Mutha Right Bank Canal spreading from Hadapsar beyond the Poona Corporation limits to Loni-Kalbhori should be preserved as green area. This will act as a buffer between Poona City and the proposed township at Loni and check urban sprawl. The area between Aund and Chinchawad township along the banks of river Pavana should likewise be reserved as green area.

### **Sewage Disposal**

13.10. It is assumed that about 90 per cent. of the water consumed for domestic and other purpose appear as sewage. This amount could easily be utilised for irrigation after partial purification. It is further assumed that 1 T.M.C. of water can irrigate 3 acres of land per year. The total area required for sewage disposal may, therefore, be calculated on the above basis and necessary provision should be made in the final proposals of the Regional Plan. The area proposed as green belt mentioned above would be suitable for the purpose.



## CHAPTER XIV

### UTILITIES AND SERVICES

#### Water Requirements

14.1. The water potential in Poona Metropolitan Area is fairly high. The river Mutha has a potentiality of 35,000 T.M. cub. feet. Pavana has a potentiality of 10,000 T.M.C. The river Bhima also has a potentiality of 7,000 T.M.C. The total potentiality of water resources, therefore, comes to 52,000 T.M.C. approximately. The total annual requirement for the maximum population of actual 20 lakhs in the P.M.A (at 60 gallons per day per capita i.e. 40 gallons per head for domestic and 20 gallons per head per day for industrial and other uses) is 73,000 T.M.C. There is enough water potential in the area to provide for the Poona Metropolitan Area. However, it is necessary to reserve this quota in the Bhima Valley planning.

#### Drinking Water Facilities

14.2. According to the census of village drinking water supply carried out at the instance of Community Development and Co-operation, Ministry of Government of India about 49 villages in the region (*vide* table No. 14.1.) had inadequate supply of drinking water, throughout the year. The proportion of such villages was more towards eastern part of the region.

#### Power

14.3. There are no power generating stations in this Region. However, electric power is supplied to Poona region from the Khopoli power house through the agency of the Maharashtra State Electricity Board. This power is distributed to Poona and the surrounding areas from the three main sub-stations, viz., Chinchawad, Phursungi, and Ganeshkhind. Sub-stations at Chinchawad and Phursungi supply power to the rural areas as well as to the industries. Ganeshkhind Sub-station supplies power to Poona City area and Cantonment area.

14.4. It is understood that power from Koyna Hydro-Electric Project would be available to this region, in the year 1966. Thus the power from these two sources, viz. Khopoli and Koyna, will be supplied on Grid System to this region. Enquiries with the Maharashtra State Electricity Board, reveal that ample power is available and would be supplied as and when demand arises.

#### Rural Electrification

14.5. According to the Table No. 14.2 almost all the towns/urban areas in the region are supplied with electricity whereas in the rural areas about 37 villages covering about 53.78 per cent. of the rural population of the region were electrified. In western part of the region comparatively less number of villages had this facility.

#### Refuse Disposal

14.6. The present arrangements made by Poona Municipal Corporation in regard to the refuse disposal, location of lime and brick kilns, slaughter houses and tanning works, are not satisfactory. The location of kilns near residential area in Parvati and Pashan areas needs revision. Suitable locations must be provided for these activities in relation to other land uses considering the wind direction. We understand that certain steps are being taken by the Corporation authorities in this regard.

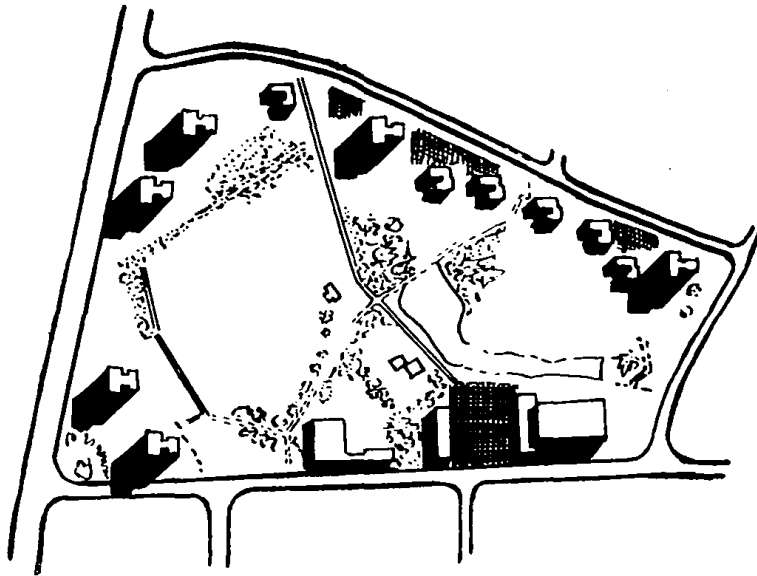
#### Educational Facilities

14.7. The proposed metropolitan area of Poona has a good educational base within Poona City. Every village in the region has a primary school. The main feature of educational facilities within the metropolitan areas is the mal-distribution of secondary and higher education facilities as can be seen from Table No. 14.3. Most of the secondary educational institutions in the metropolitan area are located within the limits of Poona City and Poona Cantonment. Provision of these facilities in the outer region must be

made so as to relieve the pressure on the schools in Poona and to make for the convenience of the students in the outer region. Many of the schools in the city, particularly primary schools, are at present accommodated in old dingy buildings, are often overcrowded and lack play-ground facilities. Provision will have to be made to improve the conditions of such schools, in the development plan.

#### Medical Facilities

14.8. The hospital and other facilities of public health in the form of dispensaries or rural health centres are inadequate in the proposed metropolitan area (*vide* Table 14.4). It is particularly important to note that there is mal-distribution of hospitals and public dispensaries, as most of them are concentrated within the limits of Poona Municipal Corporation and the Cantonment. There is need for a proper planned distribution of medical facilities within the smaller towns and the rural areas.





## CHAPTER XV

### TRANSPORT AND COMMUNICATION

15.1. The Poona Metropolitan region is served fairly well with a system of communications : Railways and Roads. In the western part there is national highway (Bombay-Poona road) and one District road (Poona-Paud Road), while in the north-eastern part of the region there are two State Highways namely Poona-Ahmednagar Road and the Poona-Nasik and Poona-Alandi, Alandi-Dehu Roads. The southern part of the region has two national highways namely Poona-Bangalore and Poona-Secunderabad and another major road viz. Poona-Pandharpur. The volume of vehicular traffic (vide Table No. 15.1) as recorded in the survey carried out by the Regional Survey Unit of Government of Maharashtra at Poona in May 1965, was 4462 vehicles per day on Bombay-Poona Road, about 1446 vehicles per day on Poona-Ahmednagar Road, 2025 vehicles per day on Poona-Sholapur Road, about 2325 vehicles per day on Poona-Bangalore road and about 1568 vehicles per day on Poona-Paud. Truck traffic constitutes 35 to 40 per cent. of the vehicular traffic on all these routes except the Paud Road.

15.2. These regional traffic routes pass through Poona City and the Bombay-Bangalore route passes even through the central part of the city. The heavy truck traffic moves by day and night through the crowded localities increasing the burden of congestion on the roads, which are already crowded by local traffic. This hampers the movement of truck, and the truck traffic becomes highly dangerous to the smaller vehicles and the pedestrians.

15.3. It is, therefore, essential to divert these regional traffic routes. The reorganization should be planned by taking into account the land-use plan and should achieve the following objectives :—

- (i) Separation of fast, long distance traffic from purely local traffic.
- (ii) Improvement of traffic circulation and reduction in number of accidents.
- (iii) Preservation of existing communities from interference of through traffic.

15.4. The last, preservation of communities, in other words creation of precincts, is vital and if properly achieved would solve the first two problems. This means that the movement of regional goods and other traffic must be diverted and taken from outside the Poona Municipal Corporation areas and the proposed "Chinchwad township" and 'Loni township'. Highway diversions from the eastern side and the western side could be aligned as follows.

15.5. Eastern Highway diversion : it would start at Akurdi on the Bombay-Poona road and run viz. Nigdi, Dighi, Lohagaon, Khardi, Hadapsar, and join Poona-Bangalore road at Bibwewadi. This by-pass will link all the major district roads and the national highways outgoing from Poona.

15.6. Western Highway diversion : It can start on Bombay-Poona road at Dehu road and run viz. Wakad, Pashan, Paud road, Vithalwadi, and join Poona-Bangalore road at Bibwewadi.

15.7. The planning of these by-passes requires considerable care. The separation of local traffic and village roads from the highways should be thorough. As such, the local roads and village traffic may have to be connected at places by under-passes or overhead passes. There should also be minimum number of junctions which have to be carefully designed. The problem of transshipment is not of large dimension in Poona as most of the truck traffic is through. Yet there is some commodity movement where assembly is made at Poona and further distribution effected. Provision of assembly of such goods should be made near the junction where the highway meets the radial roads to Sholapur, to Satara, to Nagar and to Bombay. Reservation of area a few furlongs away from the road providing enough space for truck movement, loading and unloading, and storage should be made while planning the highway diversion. At such junctions provision petrol pumps, eating houses etc. can be made.

#### Poona City

15.8. The road system in Poona City follows mostly the pattern set many decades ago. These old roads have now to carry faster and larger vehicles and to serve vastly

increased population—concentrated in increasingly crowded buildings. The number of accidents is on the increase. A number of attempts have been made since the fifties to remedy the situation by road widening, traffic lights, parking regulations, one way streets etc. These may give some temporary relief but do not touch the core of the problem. For easy and safe movement within the Poona Municipal Corporation area, possibilities of construction of outer ring road as suggested below may be explored. The purpose of the outer ring road would be to channel the traffic along periphery of the P. M. C. area. As the industrial areas, military area agricultural produce market etc. are located at the periphery of the P. M. C. area, the outer ring road could link these areas and also connect these to the highways and major district road. This would reduce the pressure of heavy traffic on the local roads. The outer ring road could be aligned roughly in an oval pattern joining Bibwewadi, Vithalwadi, Pashan, Aundh, Kirkee, Yerawada and Hadapsar.

15.9. The traffic of goods and passengers originating from the central area of Poona will be connected to the outer ring road and the regional roads by radial roads. These roads must be improved so that fast traffic is separated from local traffic and the pedestrian movement on these roads is fully segregated.

15.10. For the regulation of traffic inside the central city area inner ring road could be provided. This could include the proposed through roads along both the banks of the Mutha river, Tilak Road and Nehru Road through Bhavani Peth, linking the important focal points of the city viz. Deccan Gymkhana area, Swar-gate and Poona Station. If express bus service is provided along these roads the important focal points could be reached quickly.

15.11. All the ring roads and the radial roads which connect the centre core of the city to the periphery require careful treatment as arterial roads. No shop frontages should be allowed on these roads. The local roads should not join these major roads at many points. Vehicular traffic from inner areas should be collected and joined at few well-designed junctions.

15.12. Inside the city the problem of traffic could be further eased by detailed precinct planning particularly of shops. In the redevelopment plan, area between two blocks could be reserved for shopping precinct. The shops will have frontages on the inner side of the precinct. Area for parking and leisurely movement of the shoppers could be provided within the precinct. The roads will thus be relieved of the loss of space in car parking and pedestrian clusters, and smooth vehicular movement would be possible.

15.13. As an immediate remedial measure it is suggested that roads in the city should be suitably grouped into roads with large number of shops, and parallel road with a few number of shops. The roads with high density of shops could be reserved mainly as shopping streets restricting the vehicular traffic along these streets whereas those with a few shop fronts should be used for vehicular traffic. Shops located on the latter should be gradually shifted and no new shops should be allowed. This will ensure smooth and speedy movement of the vehicles. As an example, Laxmi Road and Kumthekar road could be cited. Laxmi road is one of the biggest retail shopping streets in Poona City. The shops could be restricted to Laxmi Road alone and Kumthekar road could be used for vehicular traffic.

15.14. For making detailed proposals regarding alignment of roads and improvement of old roads, provision of parking spaces etc. traffic surveys will have to be conducted in the Poona area.

#### **Rural Roads**

15.15. The Table No. 152 indicates the extent of road facilities available in the rural areas. It indicates that according to the population Census village Directory (1961) about 60 villages did not have even the approach roads connecting them to the main roads such as highways, district roads, etc. While preparing the Metropolitan Plan it is necessary to provide for improvement of communication between villages. The villages could be suitably grouped into clusters and the central village in the cluster should be linked with some town, so that trade to and from the villages in the cluster could be carried through the central village.

## CHAPTER XVI

### HOUSING

#### Residential Areas

16.1. The residential areas in Poona Municipal Corporation limits could be broadly divided into three groups, viz. the central city (old 17 wards), the suburban areas and the 17 villages included in 1951 in Poona Municipal Corporation area. The central city area covers only about 5 per cent. of the total Poona Municipal Corporation area, while it contains 70 per cent. of the population of the Poona Municipal Corporation. In this area residential use is badly mixed with other uses viz. commerce, administration and industry (small scale). It is, therefore, necessary to prepare a re-development plan wherein these uses are sorted out. New development should then be permitted according to this plan which will embody zones pure or mixed for whole-sale business, retail business and administrative officers, cottage and small-scale industry and residences.

16.2. A major problem of the central city area is that of congestion and overcrowding. The gross density in this area is 250 persons per acre and in certain areas like Kasba, Raviwar, Ganesh and Guruwar wards, it is as high as 400 persons per acre. It is, therefore, essential that the density of the central part be reduced to a desirable standard. The overspill population as a result of the reduction of density will have, therefore, to be accommodated in extended areas.

16.3. From the study of the existing housing in the old city areas, it is found that more than 2/3 of the houses are of very poor quality (many of these are Kachha structures) with expected life below 20 years. These are also badly lacking in basic amenities like water-tap, bath-room and latrine. On an average 5 to 6 families have to share these facilities. The density of occupancy is very high, there being on an average of 3 persons per room. Nearly 60 per cent. of the families are living in one room tenements, where the occupancy rate is 4.5 persons per room. In the re-development of the central city area, it is necessary to see that such sub-standard housing does not reappear. The problem of the development of the area along the river banks devastated in the Panshet disaster is another major issue in the development of the central area. In all the rapidly growing urban centres, where there is speedy migration and great lag in the living space made available, the problem of slum dwellers is growing serious every day. In a survey conducted by Poona Municipal Corporation it was estimated that the slum population in Poona was about 65,000 in 1965 (37,000 in 1960). The problem of providing suitable housing to the present slum dwellers and avoiding further the emergency of slum areas is an urgent social need.

16.4. Housing accommodation is hardly better in the suburban areas of Poona even though the gross density in this area is quite low, and there are still large number of open plots and undeveloped areas. The pressure on basic amenities and the high occupancy rate are also noted in this area. In addition these areas suffer from a lack of easy access to civic amenities like schools, shops, etc. These areas are not planned as compact neighbourhood units but could be termed 'urban sprawls'.

16.5. Little development has taken place in the villages which were included in Poona Municipal Corporation area in 1951. Most of the villages do not have adequate water supply, the housing is poor, underground drainage is absent, other social amenities are also either lacking or are of poor quality. The houses in the gaathan area are closely built and are of poor quality. The suburban growth of Poona has reached most of these villages. These cannot be treated as separate entities, but must be included in the neighbourhood planning schemes which are to be prepared for suburban areas. And the Schemes should be applied to them as the old houses go out of use.

16.6. The problem of slum clearance and housing is central from the point of view both of the existing situation and of future developments. During the last quarter of a century the housing situation has rapidly worsened. The absolute numbers and even the proportion of hutment dwellers have increased and hutment colonies of the Bombay

type have emerged. Post-Panshet developments have increased dimensions of the problem and its difficulties. Basically the problem is related, as elsewhere, to mounting costs of building, very high prices of land, and almost no current additions being made to housing suited to lower income strata. The approach indicated for the Bombay region for dealing with problems of soaring prices of land and inadequacy of house supply will have to be adopted for the Poona region also. This consists, on the one hand, of a definition of land use pattern and regulation of land use for various purposes and, on the other, of action by public authorities in the direction of acquisition of land and of building of houses largely for the lower income families. For middle-income group housing will have to be provided by co-operative housing societies or by a non-profit making building operation supplied with cheap credit and land from Government agencies. Utmost economy must be made in the layout of these residential colonies, and for this considerable thought must be given to this problem.

16.7. It is not advisable to carry future development on the lines of the present suburban development which is chiefly in terms of detached houses since such a development is wasteful in a number of ways. It leads to an increase in the road length and in the length of road frontage per structure which results in loss of valuable land resource. Increased road length adds to the cost of construction of roads, water lines, sewerage and electric and telephone connections. It also means increase in the expenditure on account of transport service, postal service and police protection, provision of amenities like shops, schools, dispensaries in the neighbourhood becomes difficult and the citizens have to move over increased distances for these amenities. The basic lack of unity in the suburban detached housing also leads to loss of social contacts and hampers development of civic unity. It is desirable, instead to have row housing or group housing which may be multi-storeyed so that economy will be effected both in the use of land as well as of building and other materials. Such arrangement is also convenient for securing proper orientation, ensuring protection from heat and glare and making provision of organized open space. In the present conditions of scarcity of land and building material and the urgent need of housing thousands of families, it is imperative to plan and use the available resources with utmost economy. Development of neighbourhood units, with group or row housing and common social amenities like primary schools, play-grounds, shops etc. will be economical and will ensure convenience; this seems to be the best method of planning suburban development.

16.8. Economy could be also effected in the building design and building construction by making greater use of the local material. It might be necessary to modify some of the existing Municipal Bye-laws to permit economical layout of colonies, designs of buildings etc.

16.9. We assume that the prescription of a suitably low F. S. I. to which is added a limit on tenements per acre per district will be imposed for giving effect to the Poona development plan. We would, however, draw attention to an aspect of the problem which these provisions cannot by themselves deal with. Modern urban planning provides for ample open areas and space for amenities within a neighbourhood community and does not then insist on a very low density in the areas specifically reserved for residential development. The prescription of a uniformly low density over an entire district has the effect of spreading residential development over the whole area. This has many disadvantages. It is better to develop group housing projects within a limited area intensively and to pool open spaces and neighbourhood amenities for entire residential colonies. We hope that building regulations will pay adequate attention to these considerations and make appropriate provision for them. It may be necessary in the event to prescribe a low density over a whole area with provisions for higher density in the specific residential areas.

16.10. The problem of slum clearance is more grave and more difficult to tackle. The rent of any type of permanent housing 1 room with basic amenities will be about (at the current prices) Rs. 15 which is too high for the slum dwellers. A programme which provided common sanitary facilities and water, with dormitory type accommodation, may possibly bring the housing expenditure within the reach of slum-dwellers. The responsibility will have to be shouldered by public authority and the problem tackled realistically and with great urgency. While these public housing programmes are under way it is

necessary, as suggested in relation to the Bombay region, to undertake immediately the work of renewal and reform of the existing hutment colonies.

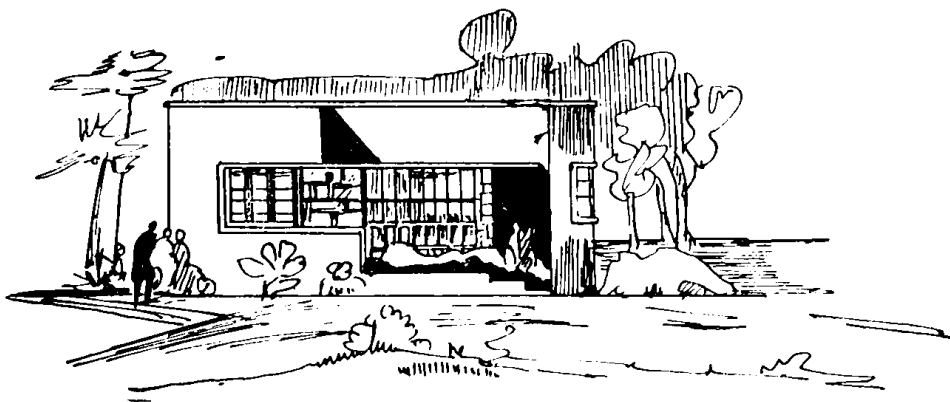
### Open Space Requirement

16.11. The necessity of healthy recreational activities which are conducted in open spaces in and around the city has been generally recognised. Provision of space for sports, rambling, resting has to be made specially since access to open land is not easy from densely developed urban areas. However, this important land use usually gets the lowest priority in the allocation of required areas; particularly as land values increase, the open space requirements suffer more and more.

16.12. Poona city like other Indian cities has grown with almost complete neglect of the need of open spaces and of recreation facilities. The gaothan regulations permit constructions to cover 100 per cent. of plot area and as a result the houses in the city are built shoulder to shoulder as well as back to back and the only unbuilt space left in the process is by way of communication lines viz. narrow roads and blind alleys. Thus lack of open space is one of the major defects in Poona City. The total open space available in gaothan area is 51 acres i.e. about 0.1 acre per 1,000 persons. Even in the suburban areas, organised open space is very inadequate. Sufficient provision of open space as well as other social and cultural amenities will have to be made. Care should be taken to provide the same in the redevelopment plan of Poona City. The area along the bank of Mutha which is proposed to be kept open as a flood protection measure could be designed properly so as to accommodate play-fields, tree-groves, parks etc. and made available to the city populace.

16.13. Poona is endowed with sets of hillocks, and has a system of canals. The hillocks and the paths along the canals provide valuable open space and should be preserved for this purpose. It must also be stressed that care must be taken to preserve historical sights like Parvati hills from any kind of encroachment.

16.14. In the development of suburban areas and the satellite towns, required area should be reserved as open space from the early stages of development.



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**PART IV**

**THE FORM AND ORGANISATION FOR THE REGIONAL  
PLANNING AUTHORITY**

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## CHAPTER XVII

### THE FORM AND ORGANISATION FOR THE REGIONAL PLANNING AUTHORITY

17.1. It is obvious that the attainment of the objectives of planning depends on the extent to which effective provision is made for plans to be properly formulated, enforced and implemented. We have already stressed that a Metropolitan Regional Plan must be operational, be capable of influencing daily decisions and be capable of being translated on site. A plan must have statutory backing for it to be capable of being enforced and implemented. The present Town Planning Act is incomplete to the extent that it does not envisage and provide for Regional Planning and it is necessary that a Regional Planning Act is passed at an early date.

17.2. Under the existing Town Planning Act, planning is undertaken for local authority areas and such local authorities are the planning authorities under the Act. With the introduction of Regional Planning covering areas within the jurisdiction of several kinds of authorities, Municipal Corporation, Municipalities, Zilla Parishads, Gram Panchayats, etc. a different kind of planning authority has necessarily to be thought of.

17.3. Such an authority must be sufficiently high powered and representative. It must be independent of the several local, public and other semi-public authorities operating in the region at various levels in order to be able to influence their decisions and to be capable of taking a comprehensive view of total regional conditions and interests; at the same time, it must not be so far removed from these authorities as not to be able to understand their points of view and appreciate their operations.

17.4. We recommend that a Regional Planning Act be passed which provides for the creation of Regional Planning Board for the preparation of a regional plan for any region notified for the purpose within the State. Under such an act, Regional Planning Boards should be set up for the Bombay Metropolitan and the Poona regions as defined by us. We suggest that a Regional Planning Board should be constituted in the following manner. It should be headed by a Chairman appointed by the Government of the State and should have a Town Planning Officer as its member-secretary. The Board should have a Vice-Chairman who should be a full time Officer of senior rank. The other members should be about 8 representatives of local authorities in the region including Gram Panchayats, and a suitable number not however, exceeding the number of representatives of local authorities, of special qualified official or non-official nominated members representing interests of Town and Country Planning, Industry, Commerce, Agriculture, etc.

17.5. We have closely considered the functions which such a Regional Planning Board should perform mainly in relation to administration and execution. Preparation of a plan, enforcement of a plan and its execution are three steps in the attainment of the same common objectives. In fact, enforcement and execution are a direct continuation of the planning process in its preparation stage and if execution does not follow preparation closely there is considerable danger of the plan being delayed, distorted or frustrated. Executors and Administrators must share the thrill of planning to be able to follow its spirit and planners must in turn be able to share in the experience of execution to be able to comprehend the major and minor pitfalls in the path of realisation of the plans. Apart from this, the forging of planning and execution activities in a single authority would also be able to achieve practical expediency, quick execution and a better co-ordination and timing in the execution of connected proposals in the plan. As Mr. Robin of the Ford Foundation stated: "We cannot afford the loss of time involved in transmitting plans from a planning agency to an implementing one and the prolonged period of indoctrination which must then take place before the implementing body is brought into agreement with the Plan." "If planners and implementers have shared in the formulation of the programme they should resolve their disagreements in the preparatory stage and the whole thing should move that much faster."

17.6. In view of these considerations, we think that the Regional Planning should in some measure be associated into the work of development and execution.

can be best achieved by the creation under the Regional Planning Act of a Regional Planning and Development Corporation of which the Regional Planning Board and the Regional Development Authority are treated as two wings. Alternatively the Development Authority would be constituted as a Committee of the Planning Board. In either case both authorities should have considerable scope for participating in the formulation of plans and in their execution.

17.7. It is clear that the Regional Planning and Development Corporation cannot and is not intended to take over the developmental activity of the local authorities in the region. Its principal function would be to work out a frame of general policy related to the needs of the region as a whole in which development plans of the local authorities are fitted in a co-ordinated manner. To give substance to its policy it will be necessary for the Regional Corporation to undertake a series of planned major works. In particular, it would have the power to purchase lands and develop them in accordance with the regional plan and it would have special responsibility in the setting up of new townships. The purpose of the Regional Corporation is to support not to supersede existing authorities and it would be mainly active in relation to major questions of land use and development and redevelopment. In addition to selective activity directly undertaken by the Corporation it would employ for its purposes public and private agencies giving them encouragement and financial assistance. Ordinarily the Regional Corporation would execute works having an overall regional significance. It may, however, be necessary to vest it with the power to take over execution, in particular instances, from existing agencies where this is found necessary for the speedier implementation of proposals which do not, for example, fit in the current programme of these agencies and are, therefore, likely to be delayed. The Corporation should be empowered to take any such action only after obtaining the permission of Government in this behalf.

17.8. The regional development of an urban area, or for the matter of that development of any kind of developing area is or should be a paying proposition. However, in a number of instances, the benefits of certain types of activities such as provision of external economies do not directly accrue to the authority providing the socio-economic overheads. Also because of welfare policy decisions the provision of certain social amenities cannot be charged for, in other cases, the pecuniary benefits that accrue may start being realised only in the distant future. It is necessary, therefore, that the regional planning and Development Corporation starts with sufficient initial finances from Government and is also given suitable sources of revenue.

17.9. Coming to the question of enforcement of the plan, we feel that it should be left to the various local and revenue authorities in the region, who, however, should have no power to make any modifications in the regional plan themselves while granting any building or development permission.

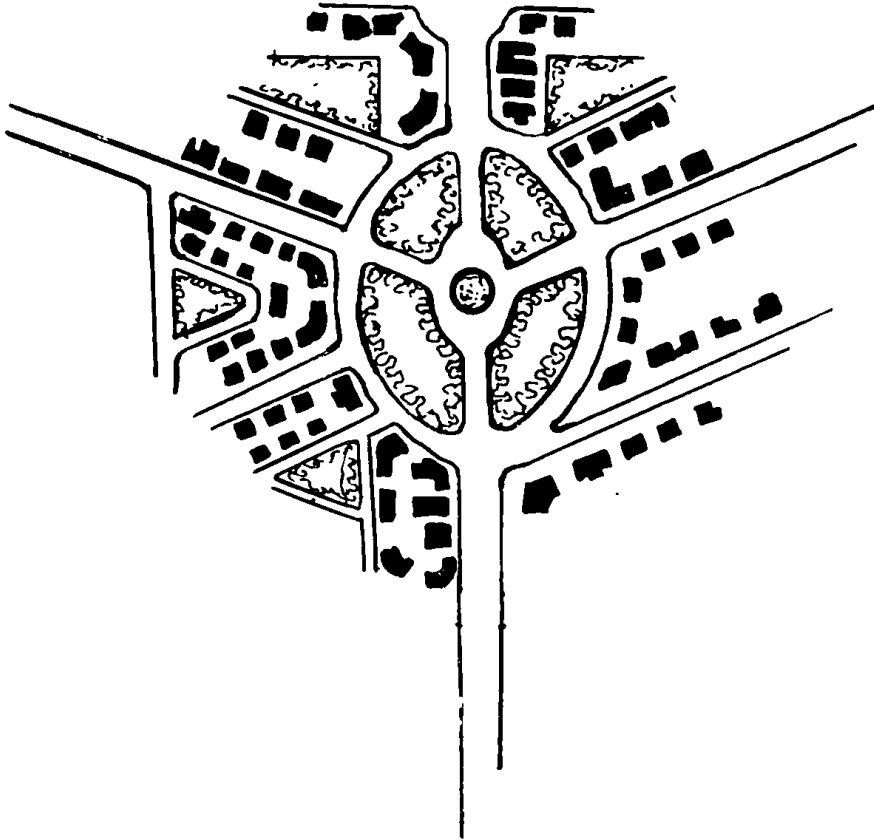
17.10. Even after the creation of a Regional Planning Board, the local authorities will continue to function as planning authorities for the preparation of Development Plan and Town Planning Schemes for areas within their jurisdiction and continue to grant or refuse building permissions within their areas. Though the Regional Planning Board will operate at a higher level and be able to guide the shape of the local area development plans in so far as they may be affected by the Regional Development proposals, we do not contemplate that the Regional Development Board should have any kind of appellate authority as that would invite direct conflict between the local authority and the Regional Planning Board. In addition to the local authority, there will be several other authorities and Corporations such as Maharashtra Industrial Development Corporation, the Maharashtra Housing Board, etc. operating in the region. The operation of these authorities which look to the individual facets of Regional Development has to be conceived of as a part of a total and co-ordinated programme and therefore made subservient to the proposals in the regional plan. The Regional Planning Act should, therefore, provide specifically that no development by whatever authority public or private including the departments of Government should be undertaken in the region if it is not according to the Regional Plan and that the regional plan should have an overriding effect over all development proposals of whatever authority. The regional development authority should for this purpose be vested with powers of giving directions or making inspections and corrections in the development permissions granted or to be granted by various local authorities.

17.11. *Interim Authority.*—The passing of a Regional Planning Act and establishment of a Regional Planning Board and the Regional Planning and Development Corporation as



above may take considerable time and the creation of an interim authority is immediately necessary to proceed with the regional planning work, regulating progress and stopping undesirable developments. The interim authority should be similarly constituted and have similar powers. It should be created immediately under an ordinance. Such an authority should also have adequate staff of all categories to enable it to proceed with the planning work expeditiously.

17.12. At present two small branch offices of the Town Planning Department of the State are working on the Regional Plans of Bombay and Poona respectively. But the total strength of staff appears very inadequate to cope up with this type of work. It does not also seem necessary or advisable that the regional planning units should continue to be part of the Town Planning Department. At the same time, however, the Town Planning Department should continue to be closely associated with the Board's activities. It is necessary to form a team of experts from a number of disciplines which are not, at present, represented on the staff of the Regional Planning units. We would, therefore, recommend the creation of a separate body of expert staff under the interim Regional Planning Corporation. This body should be broad-based and should include representatives of several disciplines such as geographers, economists, traffic planners, industrial planners, statisticians, demographers, etc. This step is essential if it is desired that a rational and sound plan should result from the recommended effort.



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**PART V**  
**SUMMARY AND RECOMMENDATIONS**

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## SUMMARY AND RECOMMENDATIONS

### BOMBAY REGION

#### CHAPTER II

(1) A metropolitan regional plan should primarily indicate the most desirable manner in which the distribution of population of the region present and future should be brought about in its various aspects of living and working. The plan has, therefore, to concern itself with patterns of land use, systems of communications, locations of centres of activity, provision of amenities and public utilities and socio-economic overheads and services. The broad socio-economic objectives may be derived from the emphasis on the provision of minimum standards of living including housing and health and education for all; and the insistence on wide dispersal of economic activity and the prevention of its concentration which are the directives of policies incorporated in the Constitution and statements made in the National Plan.

(2) In the rapid industrialisation of Maharashtra, Planning policy should lead to curbing the formation of conurbations on the one hand and on the other to creating conditions for development of depressed areas. It will be necessary to take bold measures in relation to planned decentralisation and wider dispersal of employment potential throughout the State. This will help in saving a deteriorating situation in Bombay conurbation and in better planning of growing cities like Poona.

(3) The plan for a region like Bombay should have double objective. That of a proper development of the undeveloped area and the renewal and redevelopment of the over-developed or badly developed areas. Both these aims have to be achieved through one integrated plan frame.

(4) The Regional Plan for the Bombay Metropolitan Region should address itself to the problem of stopping further deterioration and of gradually improving conditions within the city. The plan for achieving this will be closely connected with and be dependent on the plan of development of the outer areas. The total regional plan should determine the pattern of major land use and indicate the main industrial areas and residential area and their mutual interrelation. The land-use plan should set forth the restrictions on density of land use in terms of population or building bulk and should define the areas to be reserved for conservation, agricultural and recreation. The reservation of green belts and protection of areas of natural beauty should be provided for. The plan should establish the location of neighbourhood units with their special facilities. The plan should deal with overspill matters and will chart the relation of the city to the region and indicate its integration with any satellite communities that are set up. This should include the siting of new townships and their proper spacing within the region. The plan will determine the alignment of main roads and other means of communication, chart the major routes of mass transportation and present an integrated view of all lines of communications for the circulation of people and goods within and about the region. It should indicate how the provision of major public utilities and services for the people in various parts of the region should be made.

(5) The Regional Plan of Bombay should—

- (i) Lessen the concentration of economic activities in the Bombay Island;
- (ii) See that the area vacated by factories or offices is not occupied by other such activities.
- (iii) Reduce the mixed land use of industry, cattle stables, etc. with housing.
- (iv) Take measures for reducing road congestion and improving traffic pattern.
- (v) Plan for large scale slum removal.
- (vi) In relation to suburban areas reduce commuting and establish relationship between residence and work place, schools, shops and other amenities.
- (vii) Develop the main land by creating a multinucleated metropolitan region with a view to making it economic to operate providing proper relation between working and living conducive to responsible social and political participation.

(viii) Maintain the character of the area in between the urban centres as strictly agricultural or recreational.

(6) To overcome the difficulty of paying inflated prices due to planning and development activities, it is necessary to buy land, on a large scale in advance of requirement in the undeveloped region. The creation of a development authority with adequate legal powers is necessary before such operations can be undertaken.

(7) Public ownership of land will facilitate planning and is not incompatible with private development which could be carried out on leases. In areas where development has begun large-scale purchase of land by public authorities may not prove practicable. In such developing regions, a method of pooling of land seems most suitable. In developed areas dual approach of payment of compensation and collection of betterment levy would alone make public operations possible.

(8) The limits of a metropolitan region may be considered from two points of view of—

(i) the area over which the activity of the urban core is already intimately affecting socio-economic life ; and

(ii) surrounding area over which it appears necessary to plan integrated development of the future.

From this point of view, the Committee recommends the following limits for the Bombay Metropolitan and Poona Regions :—

#### *Bombay Metropolitan Region*

*North.*—Vaitarna creek and the taluka boundaries of Bassein and Bhiwandi talukas along river Tansa.

*East.*—Sahyadri ranges upto and including Khopoli in the region.

*South.*—Patalganga River.

*West.*—The sea.

#### *Poona Region*

*South.*—Hill ranges.

*West.*—Partly by the hills and partly by the large military settlement at Dehu.

*North.*—By the flows of Indrayani and Bhima.

*East.*—Administrative limits of Haveli Taluka.

#### CHAPTER IV

(9) The figures of population should not be treated by the planners as indicating inevitable development but as pointing to possible dangerous situation if policies are not changed. They should thus lead the policy-makers to take vigorous action so that the threatened increase in population of such areas does not, in fact, take place.

(10) In the matter of industrial location much more drastic action is needed. This must be in the direction of attempting a positive shift of heavy industry outside of the island. It is also necessary to do away with the special treatment at present given to the Textile Industries on Bombay Island. Locations either on the mainland in the Bombay Region or in other parts of the State must be fixed and suitably prepared to which in due course existing textile units could shift. In the suburbs, light industries to be shifted from the island and service or consumer industry directly connected with the need of the population of the Greater Bombay should be located.

Fringe areas in Salsette would also need attention and should receive similar treatment. The ban on new industries in Greater Bombay should be applicable to the whole of Salsette and not only to the Corporation limits.

Most of the industrial plots in all industrial estates of the Maharashtra Industrial Development Corporation and also in all industrial zones and areas in the Bombay Region should be reserved for shifting industries only.

(11) The Development of Satellite towns in the area would suit best the requirements of such industrial and urban development as is allowed to take place. The existing develop-

ments to be taken note of would be (i) the Kalyan-Ulhasnagar complex with existing and large projected developments of Ambarnath on one side and Dombivali on the other side. It is necessary to restrain further establishments of industries in this area. (ii) The small industrial area at Badlapur already committed should not be extended and care should be taken that operations of private industrialists do not bring about ribbon development, (iii) Thana-Belapur road area :—A much large urban development than that of a satellite town is bound to take place in this area. Detailed planning of this area should be undertaken immediately, (iv) Panvel which is at the centre of the developing communications in this area and well placed in relation to growth at Sheva Nhava and Uran should be planned as a large industrial-cum-commercial centre, (v) Khopoli. Considerable industrial activity already exists here and this should be planned as one of the smaller centres, (vi) Apta-Turade :—Same as above in view of the H.O.C. Factory. We considered also proposals for new townships at or near :— (i) Jasai-Sheva-Nhava-Uran :—In view of the alternative port facilities contemplated at Sheva-Nhava this area would need immediate attention and planning, (ii) Taloja :—This is only about 5-6 miles from Panvel and therefore not desirable. We feel that in case of a new township minimum distance of 10 miles from existing urban centre should be observed, (iii) Bhivandi or nearabouts :—No new large developments be planned here and future industrial activity should be confined to textile industry and rice mills, (iv) Vangni :—A small township may be planned to cover the commitments already made. (v) If a township is later required on Bombay-Agra Road beyond Bhivandi a site near Washind where both road and rail facilities are available may be found suitable. (vi) Nala Sopara :—May be planned as a small township if one is required in the area served by the Western Railway. But rich agricultural land in Bassein Taluka should not be taken up for urban development.

(12) We consider the lower and upper limits of town centres as 75,000 to 2½ lakhs.

(13) *Rural Renewal*.—Town Planning should be integrated with Regional Planning in which every settlement receives attention. A Regional Plan should provide for measures to improve and strengthen rural economy, improve the lay-outs of villages and provisions of services to individual villages. A study be undertaken and suitable centre selected for development.

(14) As far as possible legislative and administrative business should be shifted out of the Bombay Metropolitan Region. This will help to correct to some extent the present imbalance. Where for any reason this is not possible the location of the activities should be transferred at least to the mainland area within the region. No major offices or commercial houses should at least henceforth be allowed to be located in the Fort Area.

(15) The Bombay Corporation should take immediate action to tackle the problems of stables and mitigate the nuisance caused by their unplanned locations. This problem should also be dealt with in the Regional Plan.

(16) Fishing and the development of fishing communities deserve greater attention in town or regional planning than appears to have been given heretofore. Requirements of fishing communities in terms not only of finance and equipment but also in terms of space and area requirements must be correctly anticipated and provided for in town and Regional Plans to ensure that better-off people and more sophisticated users do not drive away fishermen from desirable locations.

(17) The Irrigation facilities in the region should be increased. Also in view of low proportion of areas under cultivation we consider it necessary to see that there is as little encroachment on good agricultural land as possible for selecting sites for new town centres.

(17A) Government measures should be directed consistently towards stabilising the population of Bombay island at a figure not higher than 25 lakhs.

(17B) The Government policy should aim at restricting immediately the population of Bombay and Salsette islands to a ceiling of about 55 lakhs.

(17C) In view of the integrated character of communications, water-supply, etc. systems of the entire region the total ceiling of population of Bombay Metropolitan region should be at about 75 lakhs.

(17D) The developments on the main land should be made to depend on the extent to which activity and population is shifted from the islands.

#### CHAPTER VI

(18) While the road system in Greater Bombay has been studied, attention has not yet been paid to the problem of mass transportation. This requires to be studied at an early date.

(19) As in other respects the development of communications in the mainland region has lagged very much behind the development in Greater Bombay. For bringing about an all-sided and even development of the mainland region it is necessary to correct this disparity.

(20) We would finally draw attention to a recommendation of the Inland Water Transport Committee which does not seem to have received adequate attention so far. It would provide considerable relief to road and rail transport in Greater Bombay if water ways could function in the manner indicated in the report. The possibilities should be fully explored at an early date.

#### CHAPTER VII

(21) The development of outdoor and weekend recreation facilities for the Bombayman as well as other residents of the region should receive greater attention and should be thought of and provided for in the Regional Plan along with town level facilities at town centres.

#### CHAPTER VIII

(22) The following should be accepted as a vital part of the housing policies of the regional plan :—

(i) It will not suffice that sufficient area for residential user is designated.

(ii) The public authorities must actively move in the matter of providing residential accommodation.

(iii) To enable the public bodies as well as the private parties to undertake housing, adequate land with basic services developed would be essential.

(iv) If the criterion that there should be an adequate return on the capital invested though not immediately but over a period is to be adopted in the case of housing the natural corollary would be that every tenement must be let out at standard or economic rent and considering the cost of land and the cost of construction the rent would be exorbitant.

It would, therefore, be essential to concede that there must be an element of subsidy in housing. It is true that the greater the subsidy the smaller would be the field which could be covered by the public authorities. Therefore, subsidy will have to be as low as possible.

(v) This being the case, it is essential that the cost of construction as well as the cost of land should be low. Special attention should now be devoted to the evolution of building materials which would be cheap and durable. More important, it would be essential to ensure that land prices do not skyrocket to foul all housing schemes.

(23) It is necessary either to have requisite legislation for freezing land values or to have a large programme of buying of land. Government should consider, for the purpose, the setting up of a Land Commission, on the lines suggested in U. K. and vest it with requisite legal powers.

(24) It is necessary to accept the principle that public provision of housing on a scale which is significantly related to the projected growth of economic activity and population is vitally necessary in all plans of development of urban and industrial areas. As a transitional measure it would be essential to prepare schemes of properly-regulated renewal or development of hutment colonies.

## POONA REGION

## CHAPTER IX

(1) The main problems relating to developments of the older city are as follows :—

(i) lack of open space and high congestion of population in the central wards of the city ;

(ii) movement of traffic in the shopping centres ;

(iii) the location of ware-housing and godowns in relation to inward and outward movement of goods and prevention of movements of trucks within the city ;

(iv) clearance of slums and movement of population from congested areas ;

(v) the lack of a logical order in the location of industrial areas and housing areas and increase in number of commuters as a result thereof ; and

(vi) partly related to most of these and partly a complex problem in itself is the planning of the centre of the city on the two banks of the Mutha.

The last problem is the most urgent and its solution must be expedited. We are anxious that the opportunity now open be taken advantage of to provide for the construction of internal express routes on the two banks to guard against floods, to achieve diminution of congestion in the central wards and to create a central area worthy of a great city.

## CHAPTER XI

(2) The planning of growing towns like Poona must be oriented towards the stabilisation of the population at a desirable optimum figure and towards locating the likely over-spill in suitable new centres in the region. The industrial, administrative and such other important centres with large employment potential should be located in this region to the extent to which they are required for maximum population target and other schemes be diverted to other regions in the State. Plans for other regions on similar lines may be prepared simultaneously so that phased and balanced development of different regions will be possible.

(3) Poona Municipal Corporation area together with the two Cantonments should not be planned for a population of more than 12 lakhs and the regional plan should attempt to stabilise the population of Poona at this figure by proposing advance action for the preparation of other centres in the region to receive and to provide work for the balance of the likely urban population.

(4) The original character of Poona City i.e. educational, administrative, etc. should be continued as the city is well suited and equipped for these functions.

(5) New industrial development should be allowed mainly in areas outside Poona City. Two locations, one which is already developed near Pimpri, Chinchawad and the other which has just started developing, viz. Loni are suggested for industrial location.

Establishment of well balanced and well equipped satellite towns at these locations is deemed necessary so that the workers are able to lead full urban life (without commuting), with its educational, cultural and other facilities and are not herded into monotonous one-class industrial housing.

(6) The suggested distribution of population in different centres is as under :—

(1) Poona City and two Cantonments	...	...	12 lakhs.
(2) New township at Pimpri-Chinchawad	...	...	1.5 to 2.5 lakhs.
(3) New township at Loni-Kalbhor and Urali-Kanchan	...	...	75,00 to 1.5 lakhs.
(4) Rest of Urban Centres	...	...	1 lakh.
(5) Rural area	...	...	3 lakhs.

(7) As it is proposed that within the Poona Municipal Corporation limits the present functional character of Poona should be maintained, the labour force engaged in manufacturing industries should not go beyond the proportion (25 per cent.) observed in 1961 Census. The maximum limit for the population within Poona Municipal Corporation area and the two Cantonments is set at 12 lakhs, which means that provision for about 90,000 industrial workers will have to be made. Assuming a standard of 30 workers per acre in

view of the fact that medium and small-scale industries will be mainly located in this area, the required total area for industrial purpose works to 3,000 acres. This should be chiefly provided in Hadapsar, Mundhava and Yeravada areas which are well suited for industrial development. Further industrial development particularly the development of large Industry in the Poona Metropolitan area should be located at Pimpri, Chinchawad and at Loni-Kalbhor.

(8) At an average labour density of 20 to 25 persons in the new industrial centres extent of industrial area in the two main centres should be as under :—

- (i) Pimpri-Chinchawad Township ... .. 1,500 acres.  
 (ii) Town-ship between Loni-Kalbhor and Urali-Kanchan. 900 acres.

Existing committed industrial acreage at Pimpri, Chinchawad is excessive in relation to what would be required for the eventual population and the Regional Plan should give serious thought to the question of how the undeveloped or unutilised excess area with the industries could be diverted to other uses.

#### CHAPTER XII

(9) Industrial development in areas like Kothrud, Erandavane, which are mainly suitable for residential development is not desirable. In such cases, we would recommend suspension of further development activity in these areas and a plan of gradually shifting existing units elsewhere.

(10) The activities of the M.I.D.C. other than those for which irreversible commitments have been made, should be suspended until a Plan of Regional Development has been replaced which fully takes account of their present activities and gives an indication of future possibilities.

#### CHAPTER XIII

(11) A special problem created in the Poona Region by reason of unregulated development has been extensive and scattered acquisition of land by the military. It is necessary to review these acquisitions and rationalise their location and use. While recognising the high priority claimed by military needs it should be possible to tackle this problem at the highest level of State and Union Governments. The aim should be to bring about a re-allocation by exchange or other means of the present acquired areas, not actually used as yet so that while serving efficiently the needs of the defence services the distribution of the areas allows optimal regional development in the future.

(12) It is imperative to have extensive green areas on the outskirts or at other suitable sites near the urban centres. Such reservations are essential to delimit urban growth and thus avoid urban sprawl along lines of communications.

(13) It is proposed that the agricultural land under command of Mutha Right Bank Canal spreading from Hadapsar beyond the Poona Municipal Corporation limits to Loni-Kalbhor should be preserved as green area. This will act as a buffer between Poona City and the proposed township near Loni and check urban sprawl. The area between Aundh and Chinchawad township along the banks of river Pavana should be reserved as green area.

#### CHAPTER XV

(14) The movement of regional goods and other traffic must be diverted and taken from outside the Poona Municipal Corporation area and the proposed Chinchawad and Loni townships. The diversions could be aligned as follows :—

*Eastern Highway diversion.*—It should start at Akurdi on the Bombay-Poona Road and run via Nigdi, Dighi, Lohogaon, Khardi, Hadapsar and join Poona-Bangalore Road at Bibwewadi. This by-pass will link all the major district roads and the national highways outgoing from Poona.

*Western Highway diversion.*—It can start on Bombay-Poona Road at Dehu road and run via Wakad, Pashan, Paud Road, Vithalwadi and join Poona-Bangalore Road at Bibwewadi.

(15) For easy and safe movement within the Poona Municipal Corporation, possibilities of construction of outer ring road may be explored. This outer ring road could be aligned roughly in an oval pattern joining Bibwewadi, Vithalwadi, Pashan, Aundh, Kirkee, Yeravada and Hadapsar.



(16) For regulation of traffic inside the Central City area an inner ring road could be provided. This could include the proposed road along the bank of Mutha River, Tilak Road, Nehru Road through Bhavani Peth, linking the important focal points of the City, viz. Deccan Gymkhana, Swargate and Poona Station. Inside the city the problem of traffic could be further eased by precinct planning particularly of shops.

(17) The problem of slum clearance and housing is central from the point of view both of the existing situation and of future developments. Basically the problem is related, as elsewhere, to mounting costs of building, very high prices of land, and almost no current additions being made to housing suited to lower income strata. The approach indicated for the Bombay region for dealing with problems of soaring prices of land and inadequacy of housing supply will have to be adopted for the Poona Region also. This consists, on the one hand, of a definition of land use pattern and regulation of land use for various purposes and on the other of action by public authorities in the direction of acquisition of land and of building of houses.

(18) It is not advisable to carry future development on the lines of the present suburban development which contains detached houses since such a development is wasteful in a number of ways. It is desirable instead to have row housing or group housing so that economy will be effected both in the use of land as well as of building and other materials.

(19) The problem of slum clearance is more grave and more difficult to tackle. The responsibility will have to be shouldered by public authority and the problem tackled realistically and with great urgency. While these public housing programmes are under way it is necessary as suggested in relation to the Bombay region, to undertake immediately the work of renewal and reform of the existing hutment colonies.

(20) Sufficient provision of open space as well as other social and cultural amenities will have to be made. Care should be taken to provide the same in the re-development plan of Poona City.

## CHAPTER XVII

(21) A Regional Plan must have statutory backing to be capable of being enforced and implemented. A Regional Planning Act should, therefore, be passed at an early date.

(22) A Regional Planning Authority must be sufficiently high powered and representative. It must be independent of the several local public and other semi-public authorities operating in the region at various levels, in order to be able to influence their decisions and to be capable of taking a comprehensive view of total regional conditions and interests; at the same time it must not be so far removed from these authorities as not to be able to understand their points of view and appreciate their operations.

(23) A Regional Planning Board should be headed by a Chairman appointed by the State Government and should have a Town Planning Officer as its Member Secretary. It should also have a Vice-Chairman who should be a full-time officer of Senior Rank. The other members should be about eight and include representatives of local authorities, specially qualified official or non-official members representing interests of Town and Country Planning, Industry, Commerce, Agriculture, etc.

(24) The Planning Board should in some measures be associated with the work of execution and development. This can best be achieved by creation under the Regional Planning Act of a Regional Planning and Development Corporation of which the planning board and the development authority are treated as two wings. Alternatively the Development Authority could be constituted as a committee of the planning board. The Development Authority would however support and not supersede existing authorities.

(25) Enforcement of the Plan should be left to the various local and Revenue Authorities in the Region. Appellate powers in this respect should remain vested in Government.

(26) Pending the passing of a Regional Planning Act interim authorities should be immediately set up for the Bombay and Poona Regions.

(27) The staff for this purpose should be suitably augmented and should be made sufficiently broad based by the inclusion of experts of various disciplines.

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4. (Sd.) P. G. Kher,

5. (Sd.) W. G. Pathak.

6. (Sd.) B. T. Talim.

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**PART VI**  
**APPENDIX AND STATISTICAL TABLES**

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## APPENDIX

*Recommendations made by the Study Group on Greater Bombay—Barve Committee—  
and the action taken thereon.*

—S. M. Y. SASTRY

It may be made clear at the outset that the report was not considered by the Government and any decisions taken for implementation. However, the recommendations made in the report formed the basis in preparing the Development Plan of the Bombay Municipal Corporation. However, as the plan preparation progressed, *ad hoc* decisions have been taken from time to time to suit the changing conditions and from that point of view the Development Plan as finalised by the Bombay Municipal Corporation and submitted to the Government might show some differences from the recommendations of the Barve Committee Report, though to start with, these recommendations formed the basis.

I give below the recommendations and the remarks regarding implementation :—

- (1) The population projection indicates that in the city the population will increase to 50 lakhs and in the Suburbs, it will go to 25 lakhs making a total of 75 lakhs. The increase of population to this extent must be viewed with grave concern and alarm. Remedial measures must be set in motion without the slightest delay.

In the Development Plan, a total population of 72 lakhs was assumed as the population for which provision will be made in the Greater Bombay area. Of this, about 32 lakhs were to be accommodated in the City and about 39 lakhs in the Suburbs. Thus, apart from assuming a slightly lower figure for the total population to be accommodated in Greater Bombay, no effective measure for limiting the population was set in motion.

- (2) The present situation (re : the acute dearth of land) in the City can be retrieved or atleast ameliorated by planned utilisation of the land that is still available or can easily be made available.

Control on the use of land by way of zoning has been introduced. A few proposals have also been made for acquiring sites for location of public amenities such as gardens hospitals, etc. Thus, for example, the disused catholic cemetery at Queen's Road has been taken over and has been converted into a garden. A large piece of land adjoining the Nair Hospital has been acquired for the expansion of the Nair Hospital. However, by and large there has been no detailed control on utilisation of land for the most useful purpose and the control has largely been negated in the sense that a non-conforming user has not been permitted to be introduced. In the connection, all our efforts to secure requisite legislation for freezing land value have not borne fruit and the paucity of proposals for acquisition of land on a very much larger scale is purely due to the exorbitant prices of land in the congested areas of the City. Further, it has been felt that acquisition of lands that have been demarcated for public use should be initiated wholesale as soon as the Development Plan is approved by the State Government.

It may also be mentioned that while reserving areas for public amenities, the present occupation of the land and the age and condition of the structures were taken into consideration, e.g. for a garden reservation when an absolutely vacant space was not available, the reservation was made on a piece of land where the existing buildings had an estimated future life of 0 to 5 years.

- (3) A definite industrial location policy in the future is a *sine qua non* for preventing further congestion of industry in the Bombay area. No new industrial units should ordinarily be allowed in the Bombay Island area, exceptions being made only in the case of industries processing large quantity of imported raw materials mainly for export of finished products, or specially dependant on port facilities or inseparably ancilliary to existing units already located there.

This has been in the main followed. In the whole of the City Area except in the Port Trust Area, no heavy industrial zone was created even the textile industry being treated as a special zone whether the existing industry will be tolerated but no new industry of that nature will be allowed to be started. So, no new heavy industry could have been started at all except in the Port Trust Area. The only heavy industry that has been permitted after the Report was the Digvijay Cement Factory at Sewree and this factory

was permitted after it was processed both at the Municipal and Government levels. Rest of the new units that had been if at all started had been very small scale units only.

Regarding the expansion of the industrial units also, a similar policy is being followed with the exception of expansion in the textile industry. In respect of that industry, there has been an agreement that reasonable expansion to balance the operations is to be permitted and is accordingly being permitted.

- (4) Non-conforming industries. Twenty industrial estates in the Island of Bombay and 25 more industrial estates in the Suburbs to afford ready facilities to these non-conforming units to shift themselves, should be established.

We have established three multi-storeyed Industrial Estates in the City to which non-conforming industries in plots acquired by the Corporation for developmental purposes are required to shift. Another industrial estate of only developed land where the parties concerned themselves will have to put up their sheds has been developed in the city mainly to serve as godown area and locate the bigger industrial units that are required to be shifted from plots purchased for developmental purposes which could not be accommodated in the smaller units of the multi-storeyed industrial estates and which yet are required to be located in the City.

To deal with a problem of dangerous storages and ancilliary processes of camphor tablet making—and methylated spirit-bottling, etc.—we have proposed to take over from the Port Trust a piece of land on which a multi-storeyed building can be constructed in co-operation with the trades and parties that would be shifted. The plans have been drawn up but the scheme has not yet been finalised.

In the Suburbs, we are proposing to develop for the present four industrial estates of developed plots out of which one has already come into existence. In addition, 28 additional sites for service industrial estates in the City and 15 sites for industrial estates in the Suburbs have been set apart.

- (5) Establishment of industries in the Suburbs—Those industries which can conveniently establish themselves outside Greater Bombay should not be allowed to be established even in the Suburban limits.

As far as the Bombay Municipal Corporation is concerned, it had no particular method of controlling the location of industries once they propose that they would be established in the conforming zone. But recently, the Government has issued a resolution in which it has been laid down that unless a no-objection certificate is obtained from the Government in the Industries Department, no new industry will be permitted in Greater Bombay. Prior to that also, the policy to decide which industry should be allowed to be located in the Greater Bombay area and which was required to be located outside was being exercised only at the State Government level.

- (6) Satellite Townships.

Nothing concrete was done.

- (7) Development of Suburbs.

(i) *Rail/Bus Concessions.*—Apart from what was already in existence, nothing new was done.

(ii) *Express Highways.*—The construction of Express Highways is proceeding quite satisfactorily except for a portion of the Western Express Highway. The entire Eastern Express Highway and portions of the Western Express Highway have already been thrown in'co commission.

(iii) *Existing main roads in Greater Bombay should be sufficiently widened and brought upto modern standards.*—A special study of traffic requirements was undertaken with the help of the World Bank Authorities by Messrs. Wilbur Smith and Associates who made detailed recommendations. The report has been accepted *in toto*. Part of the recommendations such as widening of the roads, construction of over-bridges at Kemp's corner and across the Railway Lines at Princess Street have either been completed or are in the process of execution. As per the recent suggestion of the World Bank representatives, we have also agreed to a feasibility study of the major highway works being undertaken by another team of experts. The State Government has agreed to share a part of the expenses.

For the period ending the fourth five-year plan that is upto 1971, it is expected that the cost on account of implementation of the recommendations of Messrs. Wilbur Smith and Associates will be Rs. 54.5 crores.

(iv) *Neighbourhood Units*.—Every effort is being made to provide amenities at each of the units such as Andheri, Chembur, etc. and they are developing into well-knit neighbourhood units. It may also be mentioned that the Development Plan as framed is based on the neighbourhood principle though the detailed programme for development has not been worked out. Large-scale housing development by Housing Board, however, is being done without all the requisite amenities. The Corporation has to follow with certain services, e.g. Schools and Markets. Better Co-ordination has to be achieved.

(8) Extension of Suburban Areas.

(i) *Construction of Thana Creek Bridge*.—The suggestion was for the construction of Rail-cum-Road Bridge. Since a combined bridge was not feasible, the project of a road-bridge alone was finalised and the work has already been started.

(ii) *Bridge on the Bassein Creek*.—This also is in progress.

(iii) *Ferry Service across the Harbour*.—No concrete steps seem to have been taken.

(iv) *Alternative Centre of Business*.—Land has been designated for the alternative centre but no concrete steps for the development of the land seem to have been taken apart from appointing some staff.

(9) Reclamation of land.

A special unit for reclamation of areas at Wadala, Backbay, etc. was started and it was anticipated that the work would proceed in full vigour. However, after an initial spurt there has been a lull.

(10) Public Housing.

Both the Bombay Municipal Corporation and the Housing Board have been doing certain housing. But it has not come to the levels suggested by the Report. Tenements to the extent of 55,000 per annum were suggested in the report. Perhaps 1/3rd of the No. are being constructed.

(11) Regulation of the Use of land.

(a) *A detailed survey of land use as at present*.—A survey has been done but as the scale to which this has been marked is small, the margin of error is slightly large for the Suburban Area.

(b) *An assessment specifically of requirements of localities for future land use*.—Necessary care has been taken to make reservations in the proposed Development Plan.

(c) *Designation of specific plots for particular requirements to be so appropriated as they become available*.—This has also been done in the Development Plan.

(d) *Powers to enable the local authority to appropriate such land towards such purposes as and when opportunity occurs*.—Reservation of land in the Development Plan ensures the necessary utilisation. However, in the absence of adequate powers regarding price control, the provision might become practically unusable.

(e) *A phased programme for the acquisition of land at the rate of 100 to 120 acres a year*.—The land acquisition proceedings have been dilated and our purchase of land has been very very much smaller than the suggested acreage. It is anticipated that after the Development Plan is finalised, we would go in for wholesale acquisition of all reserved lands. But unless the Land Acquisition Procedure is drastically overhauled, the progress will be very tardy.

(12) Development of Building Sites.

We have not been able to chalk out any concrete programme and go ahead with any plan.

(13) Underground Railways.

The matter is still in an investigational stage.

(14) Vertical Development.

The restriction on height except in a few specified areas has been removed. Within the total control of the F. S. I., any number of floors can be constructed and vertical development has already been started.

(15) Full Utilisation of Building Sites.

No specific incentives have been devised.

(16) Repair and Restoration of Old Buildings.

Many measures have been thought about but nothing concrete has emerged. The latest suggestion made is that old buildings should be taken over by the Corporation or the Housing Board on payment of a certain compensation based on the net existing yield of the property so that the inducement that is now available to the landlord to see that the buildings collapsed so that they can redevelop it and make huge profits is taken away.

(17) Minimum standard of Housing.

Minimum standards are being enforced. However, it has been found that the minimum standard is required to be reduced to bring down the cost of construction so as to keep the rent within reasonable limits or rent paying capacity of the occupants.

(18) Equivalence in Public Housing Standards.

By and large, buildings are being built to lower standards of accommodation. As regards relaxation of rent control restrictions and reliefs and concessions for the private investors in the house building trade, nothing concrete appears to have been done.

(19) More Finances for Co-operative Housing Long Term Finance for Housing Activity.

Nothing concrete seems to have been done.

(20) Slum Clearance.

The Municipal Corporation mainly and the Housing Board in a subsidiary way have done a certain amount of slum clearance but it has only touched the fringe of the problem. Paucity of land, finances as well as building materials have hampered the progress.

(21) Public Land-owning Authorities to comply with Zoning and other Regulations.

The State Government by and large complies with the regulations. The Central Government has not been responding. Representations have been made a number of times and this has been taken up even by the Mayors' Conference. It is anticipated that gradually the Central Government would fall in line. For the present, the situation is that the Central Governmental Departments do violate the regulations quite often.

(22) Relocation of Government Establishments.

Nothing has been done so far.

(23) Traffic Improvements.

The tunnel under Malabar Hill is a project which is likely to be taken up along with the construction of some Express ways in the City and the reclamation of the foreshore land beyond Napean Sea Road. Rest of the improvements as mentioned earlier are being done in accordance with the recommendations made by Messrs. Wilbur Smith and Associates.

(24) Staggering of office hours.

A beginning has been made by the BEST Undertaking. A number of private offices in the Fort Area already start at an earlier hours and also close on Saturdays completely. The problem of people coming from very long distances is a stumbling block in adopting staggering to any satisfactory level.

(25) Parking.

The Building Regulations have been so amended that adequate parking is now required in each building, for each flat as well as to cover the needs of the visiting public. The problem of unauthorised use of garages for other purposes is engaging attention of the Corporation.

(26) Co-ordination in the Activities of Different Utilities.

Every effort is being made to achieve co-ordination. Periodical meetings are being held in the Chamber of the City Engineer for this purpose.

(27) Goods Trucks.

The Transport Companies have now been brought under licensing provisions under Section 394 of the Bombay Municipal Corporation Act. Location reservations have been made for goods terminals also. After the Development Plan is approved, gradual implementation will have to be started.

(28) Specific Immediate Measures for improving open spaces and Recreational Facilities in the Island.

(a) *The possibility of setting up a park EXTENDING over 65 acres near the Race Course.*—Most of this area is now set apart for the Scientific and Industrial Museum for which a donation of Rs. 75 lakhs has been received from the Mafatlal Trust. The Council of Industrial and Scientific Research will develop the area into a garden with a museum.

(29) Salt Pan Areas.

Plans for reclamation of this area have been made but as some legal actions have to be taken against those to whom leases were given, the progress has been rather slow.

(30) Milch Cattle Stables.

A separate note has already been circulated.

(31) Early removal of Bandra Slaughter House.

Plans for the construction of the slaughter house at Deonar are in the final stage, the tender for the work being recently approved.

(32) Cheaper Housing and Building Materials.

So far, nothing effective has been done. Every experiment of construction with cheaper materials has proved a failure. Recently, it has been decided that a brick-making factory should be established in Powai to cater to the needs of the Housing Board and the Municipal Corporation. This would be the first achievement if it materialised.

(33) Difficulties in the Building Materials Trade; Improvement in techniques—Co-ordinating agency for the programme of improvement :

To achieve a measure of co-ordination, a Co-ordination Committee under the Chairmanship of the Minister for Urban Development has been established. It has been able to smoothen out smaller defects.

(34) Housing for Industrial Labour.

The problem to some extent is being tackled by the Housing Board and the Maharashtra Industrial Development Corporation (for the provision of land required for industrial housing).

(35) Town Administrations for Satellite Townships.

Nothing seems to have been done and the problem of organisational set-up and the authority to manage the satellite townships etc. will have to be gone into by the Gadgil Committee.

(36) Agency for long Term Programmes.

A recommendation had been made in the Committee for the revision of the Municipal Corporation Acts headed by the Minister for Urban Development that in the Corporation areas, a separate development authority with very much wider powers than the old Improvement Trust should be established to undertake the implementation of the developmental schemes. It is understood that necessary legislation would be introduced shortly.

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TABLE NO. 3.1

*Average Annual Rainfall, Rainy days, Temperature and Relative Humidity within Bombay-Panvel- Khopoli Region*

Item	Unit	Thana	Bassein	Bhivandi	Kalyan	Panvel	Karjat	Khalapur	Uran	
1	2	3	4	5	6	7	8	9	10	
<i>Weather/Climat Average :</i>										
(i) Rainfall	.. .. mm	3442.7	2554.9	3151.1	3615.7	4190.0	2885.2	4266.1	2669.6	
(ii) Rainy days	.. .. No.	134	124	126	103	138	127	135	114	
(iii) Temperature	.. .. C.	305-24.7								
(iv) Relative Humidity	.. ..	65 % to 75 %					80 o/o			

*Source.*—District Statistical Offices Thana and Kolaba Districts.

TABLE No. 3·2

*Distribution of Villages/Towns within Region according to the Population Groups in 1961*

Population Range	Number of Villages/Towns and (Population in the corresponding villages/Towns) in the Talukas					Number of Villages /Towns and (Population in the corresponding Villages/Towns in the Talukas					Total	Percentage to the Total Population.
	Bassein	Bhivandi	Kalyan	Thana	Uran	Panvel*	Karjat*	Khalapur*	Greater Bombay			
1	2	3	4	5	6	7	8	9	10	11	12	
<i>Villages</i>												
0-199 .. ..	7 817	37 4,626	35 4,133	14 957	3 404	47 4,905	29 2,729	15 1,610	....	....	187 20,181	0.38
200-499 .. ..	15 5,857	79 26,383	83 28,252	16 5,780	10 3,374	48 16,253	51 17,157	41 13,146	....	....	343 1,16,192	2.20
500-999 .. ..	21 6,157	55 38,801	54 38,334	20 15,986	12 8,784	45 30,667	23 15,536	14 9,722	....	....	244 1,73,987	3.30
1000-1999 .. ..	25 33,649	18 22,890	17 24,075	13 17,492	12 16,796	20 26,470	6 8,859	6 7,666	....	....	117 1,57,897	2.99
2000-4999 .. ..	14 43,040	8 22,370	5 17,854	9 30,045	4 10,043	5 11,443	....	....	....	....	45 1,34,795	2.55
5000-9999 .. ..	2 11,349	....	....	....	1 6,832	....	....	....	....	....	3 18,181	0.35
10000 and above .. ..	1 17,484	....	....	....	....	....	....	....	....	....	1 17,484	0.33
<b>Total No. of Villages</b> .. ..	85 1,28,363	197 1,15,070	194 1,12,648	72 70,260	42 46,233	165 89,738	109 44,261	76 32,144	....	....	940 6,38,717	12.10 ....
<i>Towns and Cities</i>												
1000-4999 .. ..	....	....	....	....	....	....	1 2,842	....	....	....	1 2,842	0.05
5000-9999 .. ..	2 15,053	....	2 13,092	2 15,082	....	....	2 10,747	....	....	....	8 53,974	1.05 1.02

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10000-19999	..	..	....	....	18,407 <sup>1</sup>	....	10,229 <sup>1</sup>	18,130 <sup>1</sup>	....	....	....	46,766 <sup>3</sup>	0.89
20000-49999	..	..	22,598 <sup>1</sup>	47,630 <sup>1</sup>	34,509 <sup>1</sup>	....	....	....	....	....	....	1,04,737 <sup>3</sup>	1.98
50000-99999	..	..	....	....	73,482 <sup>1</sup>	....	....	....	....	....	....	73,482 <sup>1</sup>	1.39
100000 and above	..	..	....	....	1,07,760 <sup>1</sup>	1,01,107 <sup>1</sup>	....	....	....	....	41,52,056 <sup>1</sup>	43,60,923 <sup>3</sup>	82.57
Total No. of Towns	..	..	37,651 <sup>3</sup>	47,630 <sup>1</sup>	2,47,250 <sup>6</sup>	1,16,189 <sup>3</sup>	10,229 <sup>1</sup>	18,130 <sup>1</sup>	15,589 <sup>3</sup>	....	41,52,056 <sup>1</sup>	46,42,724 <sup>19</sup>	87.90
Total	..	..	88	198	200	75	43	166	112	76	1	959	100.00
			1,66,014	1,62,700	3,59,898	1,86,449	56,462	11,07,868	57,850	32,144	41,52,056	52,81,441	

Source.—Population Census, 1961.

Note.—In each group the first figure indicate the No of Villages/Towns and the other indicates its population.

\*Villages/Towns included in the Region are considered.

TABLE NO. 3.3

*Density of Population in some Towns in the Bombay-Panvel Region**Town Density*

Municipal Towns			Municipal area in Sq. Kms.	Population in 1961	Density of persons per Sq. Kms.
1			3	3	4
Greater Bombay	..	..	438·80	41,52,056	9,658
Thana	..	..	26·75	1,01,107	3,780
Kalyan	..	..	7·64	73,482	9,618
Bhiwandi	..	..	4·12	47,630	11,570
Bassein	..	..	8·13	22,594	2,779
Ambarnath	..	..	16·81	34,509	2,052
Ulhasnagar	..	..	13·34	1,07,760	8,076
Panvel	..	..	12·15	18,130	1,492
Uran	..	..	2·10	10,229	4,876
Dombivali	..	..	2·33	18,407	7,896
Matheran	..	..	7·51	2,842	378
Neral	..	..	11·66	5,604	481
Karjat	..	..	1·14	5,143	4,511

Source.—Municipal Hand Book—1962, Bureau of Economics and Statistics.

TABLE NO. 3.4

*Density of Population in Greater Bombay and other Talukas in the Region*

Taluka				Geographical Area in Sq. Kms.	Population in 1961	Density of persons per Kms.
1				2	3	4
Greater Bombay	..	..	..	438·80	41,52,056	9,658
Thana	..	..	..	343·00	1,86,449	544
Kalyan	..	..	..	668·50	3,59,898	538
Bhivandi	..	..	..	685·80	1,62,700	273
Bassein	..	..	..	521·10	1,66,014	318
Panvel*	..	..	..	555·50	1,07,868	195
Uran	..	..	..	186·60	56,462	301
Karjat*	..	..	..	398·48	57,850	145
Khalapur*	..	..	..	207·20	32,144	155
Total for the Region			..	3,835·98	52,81,441	1,379

Source.—Population Census 1961.

\*Villages in the Regional area considered.

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TABLE NO. 3.5

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TABLE No. 3.5

Statement showing Wardwise Area in Acres, Population and Density in Bombay City

Ward	Locality		Area in Acres	Population				Density (per acre)			
				1931	1941	1951	1961	1931	1941	1951	1961
1	2		3	4	5	6	7	8	9	10	11
A	Upper Colaba	.. ..	605.77	430	8,301	13,728	30,553	.719	13.703	22.7	50
	Middle & Lower Colaba	.. ..	790.88	19,954	33,520	39,160	50,541	25.230	42.383	49.5	64
	Fort Southern	.. ..	454.26	3,495	13,394	16,840	24,327	7.693	29.485	37.7	54
	Fort Northern (Esplanade)	.. ..	89.70	25,832	28,556	36,628	46,982	287.982	318.350	408.33	524
		.. ..	648.41	14,303	18,468	41,786	43,465	22.058	28.4	64.4	67
	Total A-Ward		2,589.02	64,020	1,02,239	1,48,142	1,95,668	24.7	39.5	57.2	76
B	Mandvi	.. ..	171.60	41,706	38,914	36,407	36,852	243.04	226.0	212.1	215
	Chakla	.. ..	45.16	18,037	22,054	29,427	29,637	399.4	488.3	651.6	656
	Umarkhadi	.. ..	94.95	41,594	52,282	80,472	74,129	438.6	550.6	647.5	781
	Dongri	.. ..	296.50	13,028	21,762	32,546	34,438	43.9	73.39	109.8	116
		Total B-Ward		608.21	1,14,365	1,35,012	1,78,852	1,75,056	188.3	221.08	294.06
C	Kharatalao	.. ..	57.36	23,243	37,069	32,160	34,793	405.2	656.25	460.66	607
	Kumbharwada	.. ..	42.5	32,027	29,855	44,699	47,304	761.6	709.9	11,062.99	1,125
	Bhuleshwar	.. ..	43.22	35,106	27,667	59,021	65,681	812.26	640.14	1,365.58	1,520
	Market	.. ..	81.75	38,651	34,384	53,008	58,399	472.79	420.59	672.85	1,714
	Dhobitalao	.. ..	114.63	44,352	46,990	69,697	74,601	387.08	409.9	618.17	651
	Fanaswadi	.. ..	102.39	32,077	35,937	66,985	58,674	313.28	350.98	556.54	573
	Total C-Ward		441.40	2,05,476	2,11,902	3,17,570	3,39,452	466.00	480.06	719.46	769
D	Khetwadi	.. ..	153.71	39,309	52,684	70,071	86,624	255.72	342.74	455.86	564
	Girgaum	.. ..	114.42	38,786	53,955	69,893	74,131	338.97	471.55	610.84	648
	Chowpati	.. ..	106.52	16,197	22,752	33,670	33,937	152.56	213.59	317.29	319
	Walkeshwar	.. ..	584.20	22,734	25,151	39,357	51,859	38.91	43.05	67.36	89
	Mahalaxmi	.. ..	680.02	36,569	54,622	61,194	1,07,095	53.77	80.32	89.98	157
		Total D-Ward		1,64,887	1,53,593	1,09,164	2,74,185	3,53,646	94.71	28.00	167



E	Tardeo	12,187	146.62	31,748	35,212	51,438	60,768	216.00	240.00	350	414
	Mazgaon	9,705	544.41	43,153	44,337	54,323	74,271	74.20	81	100	130
	Tadwadi	51,933	359.90	40,338	38,869	59,025	68,635	113	108	164.0	191
	1st Nagpada	1,813	96.20	7,223	11,090	20,642	-24,014	75	115	215	250
	2nd Nagpada	19,831	86.53	21,032	30,690	39,388	42,894	243.06	355.00	455.19	490
	Kamathipura	13,111	60.32	37,571	42,409	57,370	57,114	623.86	703	351	950
	Byculla	17,121	536.27	91,985	96,478	1,45,894	1,70,908	172.52	180	272	319
	<b>Total E-Ward</b>		<b>1,830.55</b>	<b>2,74,060</b>	<b>2,99,085</b>	<b>4,28,080</b>	<b>4,98,814</b>	<b>138</b>	<b>163.00</b>	<b>234</b>	<b>272</b>
F	Parel	1,00,000	560.59	1,129.59	71,426	1,11,277	34,649	....	127.00	99.00	240
	Sewri	1,00,000	425.08	1,129.59	31,864	63,087	97,827	....	28.00	56.00	87
	Naigaum	1,00,000	388.46	2,727.89	52,165	66,061	112,152	....	123.00	250.00	264
	Matunga	1,00,000	2,727.89	2,727.89	43,757	53,229	-73,367	....	113.00	137.00	189
	Sion	1,00,000	1,501.00	1,501.00	22,040	77,199	131,125	....	8.00	28.00	48
	<b>Total F-Ward</b>		<b>5,321.61</b>	<b>1,59,514</b>	<b>2,21,252</b>	<b>4,10,853</b>	<b>549,120</b>	<b>30.00</b>	<b>42.00</b>	<b>79.00</b>	<b>105</b>
G	Dadar	1,00,000	1,450.38	370.74	50,612	1,40,366	139,029	....	35.00	97.00	110
	Mahim	1,00,000	489.46	489.46	44,705	64,084	102,997	....	181.00	173.00	278
	Prabhadevi	1,00,000	915.11	915.11	58,708	81,581	121,513	....	120.00	169.00	248
	Worli	1,00,000	477.31	477.31	56,664	98,380	140,443	....	62.00	108.00	153
	Chinchpokli	1,00,000	708.76	708.76	59,757	1,49,309	110,292	....	125.00	313.00	231
	Love Grove	1,00,000	....	....	4,699	10,513	25,903	....	7.00	15.83	37
	<b>Total G-Ward</b>		<b>4,411.76</b>	<b>....</b>	<b>2,75,225</b>	<b>5,44,225</b>	<b>660,177</b>	<b>37.00</b>	<b>62.00</b>	<b>123.00</b>	<b>150</b>
	Harbour, Docks, Railways and unknown			27,590	35,994	27,113	....	....	....	....	....
<b>Grand Total</b>			<b>16,751.42</b>	<b>11,69,383</b>	<b>14,89,883</b>	<b>23,29,020</b>	<b>27,71,933</b>	<b>69.00</b>	<b>89.00</b>	<b>139.00</b>	<b>165</b>

TABLE NO. 3.5—contd.

Ward	Locality	Area in acres.	Population 1961	Population per acre
1	2	3	4	5
H	Slaughter House Bunderwadi and Bazar, Bandra.	87.05	22,915	263
	Colwad and Bandra hill .. ..	309.00	15,184	49
	Pali Hill, Sherli and Chimbai .. ..	405.00	18,620	40
	Panda .. ..	70.00	10,193	140
	Khar Scheme and Chamadawalakiwadi .. ..	715.00	67,161	94
	Khar and Pali-Hill Road .. ..	190.00	18,965	100
	Hill Road and Turner Road .. ..	504.00	36,135	72
	Santacruz West .. ..	370.00	17,025	46
	Santacruz Central .. ..	195.00	21,270	109
	Santacruz East .. ..	1,990.00	62,937	32
	Total—H Ward .. ..	4,835.00	2,90,405	60
K	Vile Parle East .. ..	1,860.00	64,496	35
	Vile Parle West .. ..	338.00	28,152	83
	Juhu .. ..	1,068.00	09,990	9
	Andheri West .. ..	1,238.00	49,876	40
	Versova .. ..	1,038.00	14,580	14
	Madh .. ..	372.00	3,307	9
	Andheri East .. ..	3,210.00	72,525	23
	Jogeshwari East .. ..	780.00	45,469	58
	Jogeshwari West .. ..	1,824.00	14,513	80
	Total—K Ward .. ..	11,728.00	3,02,496	26
P	Goregaon village, Maroshi .. ..	1,895.00	3,901	2
	Aarey .. ..	1,151.00	9,464	8
	Eksar-Pakhadi .. ..	2,196.00	53,089	24
	Erangal and Paravli .. ..	1,413.00	1,289	1
	Malad West .. ..	1,036.00	47,415	45
	Malad East .. ..	1,944.00	4,493	2
	Kurar, Dindoshi, Chinchavali and Wadhwan.	1,424.00	36,379	26
	Valnai, Malvani, Hkse and Marve .. ..	3,616.00	9,103	3
	Manori .. ..	1,196.00	2,492	2
	Total—P Ward .. ..	15,881.00	1,67,625	11
R	Kandivali and Charko .. ..	2,422.00	21,587	9
	Poinsar and Akurli .. ..	2,876.00	17,602	6
	Borivli .. ..	1,548.00	21,111	14
	Eksar, Shimpoli and Mandaneshwar .. ..	1,528.00	10,931	7
	Gorai .. ..	3,544.00	1,812	1
	Karheri .. ..	281.00	21,923	78
	Nangthane .. ..	4,416.00	60,927	2
	Dahisar .. ..	2,552.00	15,484	6
	Total—R Ward .. ..	19,167.00	1,17,377	6

TABLE No. 3·5—*concl'd.*

Ward	Locality	Area in acres	Population 1961	Population per acre
1	2	3	4	5
L	New Mill, Kurla .. ..	413.00	45,948	111
	Station and Taki Kurla .. ..	90.00	20,412	227
	Swadeshi Mill, Chuna Bhatti, Khajuri Bhatti and Kasaiwada.	545.00	31,658	58
	Bazar, Church Hall, 7 Villages and Naupada.	2,278.00	44,037	19
Total—L-Ward ..		3,326.00	1,42,055	43
M	Chembur Proper .. ..	1,840.00	85,582	47
	All villages Mahul, Borla, Mankhurd, Mandla, Trombay, Govandi and vadavli.	11,731.00	50,139	4
Total—M Ward ..		13,571.00	1,35,721	10
N	Ghatkopar .. ..	3,481.00	34,256	10
	Kirol .. ..	427.00	26,512	62
	Panjarpol .. ..	1,506.00	47,905	32
	Vikroli .. ..	3,860.00	33,803	6
	Bhandup .. ..	3,993.00	33,020	8
Total—N Ward ..		13,273.00	1,65,496	12
T	Mulund East .. ..	2,064.00	12,790	6
	Mulund West .. ..	1,089.00	43,640	40
	Nahur, Tulsi, Gundgaon, velsar and Kelrobadi.	5,456.00	2,106	1
Total—T Ward ..		8,609.00	58,536	7

Source.—(1) Study Group for Greater Bombay, (2) Population Census, 1961.

TABLE No. 3·6

*Variation in Population during Sixty Years in the Greater Bombay*

Year	Persons	Decade Variation	Percentage Decade Variation
1	2	3	4
1901 .. ..	927,994	....	....
1911 .. ..	1,148,757	± 220,763	+23·79
1921 .. ..	1,380,448	+231,691	+20·17
1931 .. ..	1,397,812	+17,364	+1·26
1941 .. ..	1,801,336	+403,544	+28·87
1951 .. ..	2,994,444	+1,193,088	+66·23
1961 .. ..	4,152,056	+1,157,612	+38·66

Source.—Population Census, 1961.

TABLE NO. 3.7

*Growth of Population in the Bombay-Panvel-Khopoli Region during 1951 to 1961*

Taluka	1951	1961	Percentage increase 1951
1	2	3	4
Thana .. ..	1,31,181	1,86,449	42·07
Kalyan .. ..	2,60,981	3,59,898	37·90
Bhivandi .. ..	1,15,075	1,62,700	41·39
Panvel* .. ..	85,166	1,07,868	26·49
Uran .. ..	47,322	56,462	19·31
Karjat* .. ..	45,936	57,850	25·94
Khalapur* .. ..	24,861	32,144	29·29
Bassein .. ..	1,35,254	1,66,014	22·74
Region excluding Greater Bombay.	8,45,776	11,29,385	33·53
Greater Bombay .. ..	29,94,444	41,52,056	38·66
Region including Greater Bombay.	38,40,220	52,81,441	37·53

*Source.*—Population Census, 1961.

\*Population of the Villages included in the Region has been considered.

TABLE No. 3·8

*Rural|Urban Population in the Bombay-Panvel-Khopoli Region in 1961*

Taluka or Area	Urban			Rural			Total		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
1	2	3	4	5	6	7	8	9	10
1. Thana .. ..	65,442	50,747	1,16,189	37,012	33,248	70,260	1,02,454	83,995	1,86,449
2. Kalyan .. ..	1,33,130	1,14,120	2,47,250	58,082	54,566	1,12,648	1,91,212	1,68,686	3,59,898
3. Bassein .. ..	19,759	17,892	37,651	65,613	62,750	1,28,363	85,372	80,642	1,66,014
4. Bhivandi .. ..	28,890	18,740	47,630	59,000	56,070	1,15,070	87,890	74,810	1,62,700
5. Panvel* .. ..	9,528	8,602	18,130	45,189	44,549	89,738	54,717	53,151	1,07,868
6. Uran .. ..	5,361	4,868	10,229	23,381	22,852	46,233	28,742	27,720	56,462
7. Karjat* .. ..	7,324	6,266	13,589	22,906	21,355	44,261	30,230	27,620	57,850
8. Khalapur* .. ..	....	....	....	16,696	15,448	32,144	16,696	15,448	32,144
9. Greater Bombay .. ..	24,96,176	16,55,880	41,52,056	....	....	....	24,96,176	16,55,880	41,52,056
Regional Total .. ..	27,65,610	18,77,114	46,42,724	3,27,879	3,10,838	6,38,717	30,93,489	21,87,952	52,81,441

Source.—Population Census, 1961.

\*Population included in the region is considered.

TABLE No. 3·9

*Age-group and Sexwise Population during 1961 (Bombay-Panvel Region)*

Age-group	Taluka Thana			Taluka Kalyan			Taluka Bhivandi			Taluka Bessin			Taluka Panvel		
	Person	Male	Female	Person	Male	Female	Person	Male	Female	Person	Male	Female	Person	Male	Female
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
All Ages ..	70,260	37,013	33,248	1,12,648	58,082	54,566	1,15,070	59,000	56,070	12,363	65,613	62,750	97,248	49,013	48,235
0-4 ..	11,159	5,539	5,620	18,376	9,240	9,136	18,534	9,174	9,360	18,275	9,151	9,124	16,924	84,416	8,506
5-9 ..	10,759	5,595	5,364	18,119	9,090	9,029	17,972	8,880	9,092	19,495	9,814	9,681	15,400	7,594	7,806
10-14 ..	7,168	3,917	3,251	11,430	6,276	5,154	11,389	6,320	5,069	15,604	8,130	7,474	9,774	5,377	4,397
15-19 ..	5,010	2,604	2,406	8,577	4,234	4,343	8,418	4,333	4,085	10,570	5,387	5,183	7,198	3,626	3,572
20-24 ..	6,609	3,305	3,304	9,953	4,682	5,271	16,145	4,867	5,278	11,111	5,426	5,885	7,780	3,494	4,286
25-29 ..	6,877	3,730	3,147	10,488	5,308	5,180	10,558	5,365	5,193	11,229	5,619	6,610	8,403	4,033	4,370
30-34 ..	5,200	2,956	2,244	8,293	4,452	3,841	8,428	4,498	3,930	9,064	4,780	4,284	6,922	3,599	3,323
35-44 ..	7,814	4,542	3,272	12,443	7,035	5,408	12,962	6,999	5,963	14,161	7,596	6,565	10,581	5,622	4,959
45-59 ..	6,676	3,563	3,113	10,497	5,711	4,786	11,865	6,312	5,553	12,936	6,728	6,208	10,033	5,263	4,979
60- ..	2,935	1,436	1,499	4,420	2,026	2,394	4,767	2,234	2,533	5,896	2,976	2,920	4,211	2,003	2,208
Age not Stated.	53	25	28	52	28	24	32	18	14	22	6	16	22	13	9

TABLE No. 3.9—(contd.)

Age-group	Taluka Uran			Taluka Karjat			Taluka Khalapur			Total for the Region			Greater Bombay			
	Person	Male	Female	Persons	Male	Female	Person	Male	Female	Persons	Male	Female	Person	Male	Female	
1	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
All Ages ..	46,233	23,381	22,852	73,699	37,973	35,726	53,376	27,493	25,883	6,64,897	3,52,567	3,12,330	41,52,056	24,96,176	16,55,880	
0-4 ..	8,082	4,072	4,010	11,534	5,715	5,819	8,741	4,334	4,407	1,21,825	60,056	61,769	4,58,961	2,34,554	2,34,554	
5-9 ..	7,262	3,709	3,553	11,590	5,819	5,761	7,945	4,014	3,931	1,10,571	53,915	56,656	4,63,185	2,37,395	2,25,790	
10-14 ..	4,853	2,515	2,338	7,331	4,090	3,241	5,149	2,806	2,343	71,696	39,431	32,265	8,89,997	2,10,524	1,79,473	
15-19 ..	3,523	1,719	1,804	5,568	2,967	2,601	4,226	2,111								
20-24 ..	3,804	1,809	1,995	6,248	2,916	2,332	4,943	2,298	2,115	49,115	31,981	17,134	3,64,867	2,18,210	1,46,657	
25-29 ..	3,915	1,975	1,940	6,700	3,392	3,308	5,106	2,596	2,645	60,593	27,757	32,836	5,75,997	3,24,288	1,91,709	
30-34 ..	3,119	1,586	1,533	5,383	2,820	2,563	3,805	2,093	2,510	63,278	32,018	31,260	4,98,748	3,16,805	1,81,943	
35-44 ..	4,846	2,534	2,312	8,217	4,403	3,814	5,760	3,120	1,712	50,214	26,782	23,432	3,97,638	2,61,644	1,35,994	
45-59 ..	4,531	2,297	2,234	7,763	4,229	3,534	5,374	2,956	2,640	76,784	41,851	34,933	5,42,593	3,69,761	1,72,832	
60	2,249	1,149	1,100	3,311	1,588	1,725	2,320	1,160	1,160	2,416	69,675	37,932	31,743	3,78,747	2,46,342	1,32,375
Age not stated.	44	16	28	54	376	18	7	5	2	286	147	139	1,205	619	586	

Source.—District Census Hand Book.

\*Figures refer to full talukas.

TABLE No. 3. 10

*No. of literates in Bombay-Panvel-Khopoli Region during 1961*

Taluka		Males	Females.	Total	Percentage of Literates to total population.
1		2	3	4	5
Thana	.. ..	57,219	26,629	83,848	44.96
Kalyan	.. ..	1,05,708	53,949	1,59,657	44.38
Bhivandi	.. ..	37,060	11,077	48,137	29.56
Bassein	.. ..	43,716	20,723	64,439	38.80
Panvel *	.. ..	20,139	7,241	27,380	25.33
Uran	.. ..	12,702	3,747	16,449	29.03
Karjat *	.. ..	11,973	4,795	16,768	28.98
Khalapur *	.. ..	5,454	1,769	7,223	22.47
<hr/>					
Region excluding Greater Bombay	..	2,93,971	1,29,930	4,23,901	37.53
<hr/>					
Greater Bombay	..	16,24,958	8,08,246	24,23,204	58.49
<hr/>					
Regional including Greater Bombay	..	19,18,929	9,38,176	28,57,105	54.10

\* Figures relate to villages included in the region.

Source.—Population Census, 1961.



TABLE No. 3.11

*Literates in Bombay-Panvel-Khopoli Region according to the Standard of Literacy reached in 1961*

Standard of Literacy.	Name of the Taluka											
	Thana		Kalyan		Bhivandi		Bassein		Panvel		Uran	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
1	2	3	4	5	6	7	8	9	10	11	12	13
1. Literate (without educational level) ..	8,502	1,714	13,377	3,504	13,156	3,184	13,341	6,720	9,799	2,354	4,834	1,133
2. Primary or Junior Basic ..	5,603	1,102	7,632	2,167	7,088	1,589	15,610	5,759	4,965	1,105	4,799	922
3. Matriculation and above ..	500	52	941	177	302	29	2,247	320	151	27	103	19
All Literates ..	14,605	2,868	21,950	15,848	20,546	4,802	31,198	12,799	14,915	3,486	9,736	2,074

Standard of Literacy.	Name of the Taluka										Total for the Region including Greater Bombay	
	Karjat		Khalapur		Total for the Region including Greater Bombay		Greater Bombay District.		Grand Total			
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female		
1	14	15	16	17	18	19	20	21	22	23		
1. Literate (without educational level) ..	6,745	2,374	5,152	1,557	74,906	22,540	6,47,575	3,57,273	7,22,481	3,79,813		
2. Primary or Junior Basic ..	4,228	773	3,030	902	53,228	14,319	6,54,329	3,43,195	7,07,557	1,57,514		
3. Matriculation and above ..	317	59	279	51	4,831	734	3,33,054	1,07,778	3,27,885	1,08,512		
All Literates ..	11,290	3,206	8,452	2,510	1,32,965	37,593	16,24,958	8,08,246	17,57,923	8,45,839		

\*Complete Rural areas of the Talukas are considered.  
 Source.—District Census Hand Book.

TABLE No. 3·12

*Working Population according to Occupation in Bombay-Panvel-Khopoli Region during 1961*

Area	Working Population with occupation										Total	Non-working population.	Total population.
	Culti-vators.	Agril. Labourers.	Mining Quarring Livestock etc.	Household Industry	Manufac-turing other than house-hold Industry.	Construc-tion.	Trade and Commerce.	Transport Storage and Communi-cation.	Other Services.				
1	2	3	4	5	6	7	8	9	10	11	12	13	
Greater Bombay	.. 4,840	1,949	25,131	23,042	6,65,530	44,906	3,03,817	1,89,260	4,28,193	16,86,668	24,65,388	41,52,056	
Thana	.. 18,396	3,221	3,129	1,844	20,948	1,640	6,172	6,618	13,834	75,802	1,10,647	1,86,449	
Kalyan	.. 32,147	8,752	2,397	2,445	30,765	2,502	15,327	13,768	22,105	1,30,208	2,29,690	2,50,828	
Bassein	.. 27,238	11,112	9,595	3,231	6,078	701	5,591	3,480	7,523	75,549	90,465	1,66,014	
Bhivandi	.. 32,831	13,143	3,414	1,628	19,222	671	2,850	1,058	5,706	80,523	82,177	1,62,700	
Panvel*	.. 31,582	5,746	2,710	775	1,314	363	1,950	750	3,846	49,036	58,832	1,07,868	
Karjat*	.. 13,792	3,841	1,024	660	692	386	1,133	1,987	3,388	26,903	30,947	57,850	
Khalapur*	.. 8,777	2,316	555	427	1,055	340	604	336	1,658	16,068	16,076	32,144	
Uran	.. 13,699	1,320	3,163	517	2,622	87	1,044	843	2,307	25,602	30,860	56,462	
Region	.. 1,83,302	51,400	51,118	34,569	7,48,226	51,596	3,38,488	2,18,100	4,89,560	21,66,359	31,15,082	52,81,441	

Source.— Population Census, 1961.

\*Population of the villages included in the region is considered.

TABLE No. 3. 13

## Classification of workers in Greater Bombay according to their place of Birth

Country/State where born	Population	Total workers	Cultivators.	Agrill. Labourers	Mining Quarrying Live Stocks etc.	House hold Industries	Manufacturing other than house hold Industries.	Construc-tion.	Trade and Commerce	Transport storage communica-tion.	Other Services.	Non-Workers.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Total Population .. ..	41,52,056	16,86,668	4,840	1,949	25,131	23,042	6,65,530	44,906	3,03,817	11,89,260	4,27,893	24,65,388
Within State of Maharashtra ..	25,95,477	8,37,254	4,210	1,532	15,,568	8,719	3,67,383	18,187	1,19,291	1,03,974	2,10,390	17,58,223
Born in Gr. Bombay .. ..	14,84,924	2,53,235	2,263	836	4,191	3,397	97,894	4,268	44,764	28,657	58,679	12,31,689
Born in Dists. of Maharashtra ..	11,10,553	58,4,019	1,947	596	6,081	4,722	2,69,489	13,919	40,137	75,317	151,711	52,65,34
Andhra Pradesh, Kerala, Mosore, Madras.	4,20,890	21,8,144	116	68	1,440	5,212	84,170	13,589	27,677	28,010	76,810	183,632
Assam, Orissa, Bihar, Bengal ..	53,664	11,889	21	..	34	442	4,037	130	736	1,154	6,560	10,553
Gujrath, Rajasthan .. ..	5,04,464	2,27,237	238	323	826	3,723	62,681	7,789	87,403	13,473	49,559	2,75,410
Jammu Kashmir M. Pradesh, Punjab, Up, Delhi.	3,86,302	2,70,525	408	22	8,765	3,903	1,13,922	3,373	24,088	27,762	54,933	1,15,577
(5) Goa, Div, Daman .. ..	62	21	..	..	..	..	15	..	4	....	2	41
(6) Other Territories .. ..	....	..	..	..	..	..	..	..	..	....	..	....
Born in other countries in Assia beyond India and excluding Pakistan.	102	64	15	3	113	..	12	1	4	3	44	38
(7) Pakistan .. ..	61,106	23,104	..	..	..	681	6,352	348	8,212	2,028	5,352	38,002
(C) Countries in Europe UK. ..	13	1	..	..	..	..	..	..	..	....	1	12
(D) Countries in Africa .. ..	2	1	..	..	..	..	1	..	..	....	..	1
(E) Countries in two Americas ..	3	1	..	..	..	..	1	..	..	....	..	2
(F) Countries in Oceania .. ..	17	17	..	..	..	..	17	..	..	....	..	....
(G) Unclassifiable .. ..	89	23	..	..	..	..	8	1	4	3	7	66

Source.—Population Census, 1961.

TABLE No. 3.14

## Classification of workers in Thana City according to their place of Birth

Country/State where born	Population	Total Workers	Cultivators	Agril. Labourers.	Mining Quarrying, Live stock etc.	House hold Industries	Mfg. other than house hold industries	Const-ruction	In Trade & Commerce	Transport storage communication.	Other services	Non workers.
(1)	(2)	(3)	(4)	(6)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Total Population .. ..	1,07,107	35,531	511	294	557	407	13,777	969	4,801	3,763	10,452	65,576
(I) a Born in place of enumeration ..	31,847	5,360	144	109	119	68	2,466	75	780	613	1,484	25,987
(b) Born else where in District of Enumeration.	6,736	2,561	116	95	68	26	831	84	177	229	934	4,174
(C) Born in other dist. of Maharashtra ..	40,364	15,938	237	75	122	1	5,817	431	1,339	2,115	5,665	24,426
(II) Andhra Pradesh, Kerala, Mysore, Madras	5,872	2,652	2	2	100	30	1,161	161	246	330	820	2,810
Assam, Orissa, W Bengal, Bihar ..	183	81	..	..	....	..	50	1	9	7	14	103
Gujrath, Rajasthan .. ..	5,432	2,365	6	6	20	66	510	137	947	109	564	2,867
Jammu and Kashmir, M. Pradesh, Punjab, U. Pradesh, Delhi.	6,025	4,949	3	5	122	45	2,247	65	699	227	575	2,576
Goa, Div, Daman .. ..	400	164	..	..	2	3	76	1	12	18	52	236
Other States .. ..	..	..	..	..	....	..	....	..	..	....	..	..
(B) Born in other countries in Asia beyond India and excluding Pakistan.	231	172	..	..	1	9	110	2	9	11	37	59
Pakistan .. ..	3,736	1,538	..	..	2	30	508	8	583	105	303	2,198
Goa, Div and Daman .. ..	82,985	38,077	14	9	81	347	14,843	272	2,944	6,080	13,587	44,908
Other States .. ..	..	..	..	..	....	..	....	..	..	....	..	..
Born in countries in Asia beyond India and excluding Pakistan.	1,30,906	59,633	21	2	211	658	15,785	1,387	17,816	6,623	16,130	71,273
Pakistan .. ..	1,11,097	47,406	11	1	132	580	11,499	1,155	16,080	6,442	11,516	63,691
Countries in Europe .. ..	3,898	2,459	..	..	8	17	848	105	353	605	523	1,439
Countries in Africa .. ..	4,294	1,243	..	..	6	12	400	11	292	111	391	13,051
Countries in America .. ..	862	470	..	..	1	1	99	13	64	193	99	392
Countries in Oceania .. ..	62	24	..	..	..	..	6	..	3	1	14	38
Unclassifiable .. ..	1,047	602	2	..	4	3	425	17	29	24	82	445

Source.—Population Census, 1961.

TABLE No. 3.15

*Classification of workers in Ulhasnagar City according to their place of Birth*

Country/State where born	Population	Total workers	Cultivators.	Agril. labourers	Mining quarrying. live stock etc.	House hold industries	Mfg. other than house hold industries	Constru- tion	In Trade & Com- merce	In Trans- port, storage and commu- cation	Other Services	Non workers
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Total Population .. ..	70,776	29,815	147	22	339	733	9,111	742	8,572	2,491	7,658	77,945
(1) (a) Born in Place of Enumeration ..	30,549	210	10	..	1	5	53	2	23	70	46	30,339
	1,073	218	20	1	12	..	54	11	14	20	86	855
(b) Bornelse where in district of Enumera- tion.	22,356	2,877	1	2	115	33	964	225	124	270	1,143	4,879
(c) Born in other District of Maharashtra												
(II) (1) Andhra Pradesh, Kerala, Mysor, Madras.	1,643	587	..	..	14	3	387	115	26	32	258	706
(2) Assam, Orissa, W. Bengal, Bihar ..	154	55	..	..	1	1	35	1	2	3	12	99
(3) Gujrath, Rajasthan .. ..	1,839	591	101	15	1	8	206	21	52	8	180	1,248
(4) Jammu and Kashmir, Madhya Pra- desh, Punjab, Uttar Pradesh, Delhi.	3,352	1,775	..	1	82	2	984	18	17	54	527	1,568
(C) Countries in Europe .. ..	16	7	..	..	..	..	5	..	1	..	1	9
(D) Countries in Africa .. ..	23	35	..	..	..	..	4	..	..	1	..	18
(E) Countries in America .. ..	1	..	..	..	..	..	..	..	..	..	..	1
(F) Unclass ifiable .. ..	241	39	3	..	2	1	23	3	..	..	7	202

Source.—Population Census, 1961.

TABLE NO. 3.16

*Migrants from Maharashtra in Bombay, Thana and Ulhasnagar Cities classified by District of Birth, 1961*

Serial No.	District	Migrants in		
		Greater Bombay.	Thana.	Ulhasnagar.
1	2	3	4	5
1	Greater Bombay	.. .. .	8,635	1,061
2	Thana	.. .. .	6,735	1,073*
3	Kolaba	.. .. .	8,503	125
4	Ratnagiri	.. .. .	7,815	799
5	Nasik	.. .. .	2,584	792
6	Dhulia	.. .. .	692	151
7	Jalgaon	.. .. .	1,500	1,349
8	Ahmednagar	.. .. .	1,209	911
9	Poona	.. .. .	4,491	887
10	Satara	.. .. .	2,183	460
11	Sangli	.. .. .	377	53
12	Sholapur	.. .. .	624	242
13	Kolhapur	.. .. .	545	165
14	Aurangabad	.. .. .	225	352
15	Parbhani	.. .. .	36	16
16	Bhir	.. .. .	13	31
17	Nanded	.. .. .	53	16
18	Osmanabad	.. .. .	118	27
19	Buldhana	.. .. .	75	40
20	Akola	.. .. .	108	95
21	Amraoti	.. .. .	105	70
22	Yeotmal	.. .. .	85	8
23	Wardha	.. .. .	66	8
24	Nagpur	.. .. .	299	81
25	Bhandara	.. .. .	4	16
26	Chanda	.. .. .	19	1
27	Unclassifiable	.. .. .	65	.. .. .

\*Born elsewhere in the District.  
Source.—Population Census, 1961.

TABLE NO. 3.17

*Houseless and Institutional Population in the Region during 1961.*

Item	Population					
	Houseless population			Institutional Population		
	Rural	Urban	Total	Rural	Urban	Total
1	2	3	4	5	6	7
(1) Thana	257	676	933	99	3,088	3,187
(2) Bassein	288	221	509	40	49	89
(3) Bhiwandi	612	347	959	68	641	709
(4) Kalyan	941	759	1,700	157	805	962
(5) Panvel	629	346	975	53	231	284
(6) Karjat	459	165	624	23	68	91
(7) Khalapur	1,334	.. .. .	1,334	391	.. .. .	391
(8) Uran	39	220	259	46	45	91
(9) Region without	4,559	2,734	7,293	877	4,927	5,804
(10) Greater Bombay	.. .. .	.. .. .	.. .. .	.. .. .	.. .. .	.. .. .
(11) Greater Bombay	.. .. .	62,177	62,177	.. .. .	53,321	53,321
(12) Total	4,559	64,911	69,470	877	58,248	59,125

Source.—Population Census, 1961.  
Note.—Full Talukas are covered.

TABLE No. 3.18

*Population estimates of the Bombay-Panvel Region for the Period 1961-91 (Figures in thousands)*

Year on 1st March	Rural			Greater Bombay			Rest of Urban			Total			
	Males	Females	Total	Males	Females	Total	Males	Females	Total	Males	Females	Total	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	
1961	..	3,28	3,11	6,39	24,96	16,56	41,52	2,69	2,22	4,91	30,93	21,88	52,81
1966	..	4,10	3,89	7,99	28,50	19,19	47,69	3,27	2,37	5,64	35,87	25,45	61,32
1971	..	4,63	4,40	9,03	32,03	21,91	53,94	3,85	2,44	6,29	40,41	28,85	69,26
1976	..	5,24	4,96	10,20	36,22	24,64	60,86	4,32	2,87	7,90	45,78	32,47	78,25
1981	..	5,91	5,61	11,52	40,81	27,00	68,71	4,95	3,10	8,11	51,67	36,67	88,34
1986	..	6,60	6,38	12,98	45,80	31,68	77,48	5,76	3,31	9,07	58,16	41,37	99,53
1991	..	7,48	7,10	14,58	51,19	35,99	87,18	6,74	3,33	10,07	65,41	46,42	111,83

Note.—(1) Estimates are provisional and are subject to revision.

(2) Estimates total and sexwise upto 1981 are obtained by Ratio Method using the State's population.

Projections (by Component Method) by R. E. Chodhari, Tata Demographic Research Centre, Chembur.

(3) Estimates total for 1986, 1991 are obtained by fitting a parabolic curve of second order.

(4) Sex ratio in 1961 is repeated for 1986 and 1991.

TABLE No. 4.1

*No. of factories and factory workers in Bombay-Panvel-Khopoli region during 1956-63*

Area (1)	Large sized or small sized. (2)	No. of factories			No. of workers			Workers per Factory		
		1956 (3)	1961 (4)	1963 (5)	1956 (6)	1961 (7)	1963 (8)	1956 (9)	1961 (10)	1963 (11)
Thana and other Talukas of Thana District ..	L. S. ..	56	88	130	18,448	26,302	36,411	329	299	280
	S. S. ..	166	352	362	3,861	7,432	7,668	23	21	20
	Total ..	222	440	492	22,309	33,634	44,079	100	77	89
Panvel and other Talukas of Kolaba District ..	L. S. ..	6	9	10	1,238	1,371	2,294	38	152	229
	S. S. ..	17	34	33	258	670	662	15	20	20
	Total ..	23	43	43	1,496	2,041	2,956	65	47	68
Region of Greater Bombay ..	L. S. ..	62	97	140	19,686	27,673	38,705	317	985	276
	S. S. ..	183	386	405	4,119	8,102	8,330	22	20	20
	Total ..	245	483	545	23,805	35,775	47,035	97	74	86
Greater Bombay ..	L. S. ..	826	1,121	1,320	3,80,188	4,42,175	4,85,018	460	394	367
	S. S. ..	2,397	2,943	3,189	49,479	63,215	67,371	20	21	21
	Total ..	3,223	4,064	4,509	4,29,667	5,05,390	5,52,389	133	124	122

*Source.*—Chief Inspector of Factories.*Note.*—L. S. Large sized, S. S. Small sized.



TABLE No. 4.2

*Average number of workers per factory for different type of industries in Greater Bombay during the year 1957-1964*

Serial No.	Industries*	Year †1957	Year 1964‡	Remarks
1	2	3	4	5
1	Cotton textile .. ..	1,772	504	*Grouping of Industries in Column (2) is according to "statement C" of report of Study Group for the Greater Bombay.
2	Art Silk and silk .. ..	128	....	
3	Dying and Bleaching .. ..	82	....	
4	Food Industries .. ..	32	57	
5	Vegetable oil and Groundnut decoration etc.	56	....	†The figures in Column (3) have been taken from statement of the report of study Group for Greater Bombay.
6	Chemicals, Paints and Varnishes and glass ware.	90	102	
7	Plastics .. ..	64	....	‡Figures in Column (4) have been obtained from Bureau of Statistics and Economics, Maharashtra State.
8	Rubber .. ..	99	122	
9	Paper and Paper Board .. ..	81	44	
10	Lithography and printing .. ..	54	47	
11	General Engineering .. ..	78	86	
12	Textile Machinery and Accessories .. ..	47	....	
13	Automobile coach Building repairs etc.	130	190	
14	Metal .. ..	87	65	
15	Saw Mill, Furniture working of wood-ware.	30	54	
16	Tanning Footware and Leather Manufacturing.	44	40	
17	Miscellaneous .. ..	78	97	
	Total .. ..	137	127	

TABLE No. 4.3

*Industry-wise statement of percentage of Factories and workers in Greater Bombay during year 1957-1964*

Serial No.	Industries	For the year 1957 Percentage of		For the year 1964 Percentage of	
		Factories	Workers	Factories	Workers
1	2	3	4	5	6
1	Cotton Textile .. .. .	3.63	46.93	10.70	43.62
2	Art silk and silk .. .. .	5.40	5.40		
3	Dying and Bleaching .. .. .	4.98	3.09		
4	Food .. .. .	5.41	1.26	0.79	3.04
5	Veg., Oil Vanaspati and Groundnut, decortication.	3.17	1.29		
6	Chemicals, Paints and Varnishes and Glass ware ..	6.22	4.09	7.65	6.10
7	Plastics .. .. .	2.88	1.34		
8	Rubber .. .. .	1.72	1.25	1.05	1.31
9	Paper and Paper board .. .. .	0.29	0.17	2.11	0.79
10	Printing and Lithography .. .. .	8.81	3.47	9.06	3.30
11	General Engineering .. .. .	23.11	13.19	14.43	9.60
12	Textile, Machinery and accessories .. .. .	1.55	0.53		
13	Automobiles Coaches Building repairs etc.	2.10	1.99	1.77	2.49
14	Metals .. .. .	2.85	1.82	18.22	9.17
15	Saw Milling, Furniture working and wood ware ..	3.37	0.73	3.63	1.49
16	Tanning, Footware leather Mfg. .. .. .	0.72	0.23	0.61	0.18
17	Miscellaneous .. .. .	23.29	13.21	23.98	18.82
	All Industries .. .. .	100.00	100.00	100.00	100.00

*Note.*—Grouping of industries are according to “Statement D” of the “Report of study group for Greater Bombay”. Figure in Column Nos. 3 and 4 are from Statement D of the Report of Study Group for Greater Bombay, Figures in Column Nos. (5) and (6) are obtained from Bureau of Statistics and Economics, Maharashtra State, Bombay

TABLE No. 4.4

## Population Congestion and Industrialization in Greater Bombay during 1956-1964

Year	Estimated population of Greater Bombay (in thousands)	Density of Population (persons per sq Km.)	Number of factory workers in Greater Bombay (in thousands)	Percentage of factory workers to total population	Co-relation between Column (2) and Column (5)	Some particulars of migrating population to Greater Bombay.
1	2	3	4	5	6	7
						<i>In 1961.</i>
1956	.. 3,629	8,248	430	11.85	Co-efficient of correlation. $r^2 = 0.762$	(i) Of every 1,000 persons in Greater Bombay 642 persons were migrants.
1957	.. 3,746	8,514	425	11.35	Which is statistically significant since $r^2 = 0.58,$	(ii) Of every 1,000 were migrating persons 537 are workers.
1959	.. 3,963	9,001	456	11.51	The variations in the estimates of population congestion are explained by the variation in the percentage of the Factory workers to the extent of 58 percent.	(iii) Of every 1,000 migrating workers in Greater Bombay 396 are engaged in manufacturing industries.
1960	.. 4,061	9,230	484	11.92		(iv) Of every 1,000 workers engaged in manufacturing industries in Greater Bombay 853 are migrants (who are born outside Greater Bombay). These evidences go to show that rate of migrating population to Bombay is high and among the migrants those come for employment in manufacturing industries are also many.
1961	.. 4,152	9,436	505	12.16		
1962	.. 4,259	9,686	523	12.28		
1963	.. 4,369	9,930	552	12.63		
1964	.. 4,482	10,019	587	13.32		

Source.—Chief Inspector of Factories for Column 4. Bureau of Economics and Statistics, Bombay for column 2.

TABLE No. 4.5

*Industry-wise number of establishments and Number of daily workers, in cottage industries in selected centres of Bombay-Panvel-Khopoli Region*

Centre	Industry	Number of selected Establishment	Number of workers	
			Male	Female
1	2	3	4	5
Mhasale (District Kolaba)..	Leather works	6	9	8
	Black-smithy	1	3	1
	Carpentary	2	6	...
	Oil Pressing	6	6	4
Khalapur ...	Leather works	3	6	4
	Black smithy	1	2	...
	Bamboo work	1	1	1
	Carpentary	2	2	2
	Oil Pressing	1	1	...
Uran ..	Leather works	6	12	...
	Black smithy	2	6	...
	Weaving	4	25	...
	Bamboo work	10	11	12
	Carpentary	3	6	3
Panvel ...	Leather works	4	12	8
	Black smithy	6	14	...
	Bamboo work	9	17	13
	Carpentary	8	23	...
	Oil Pressing	1	4	...
Chowk ...	Black smithy	1	1	...
	Leather works	2	15	...
	Carpentary	3	6	...
Pali ...	Black smithy	1	3	5
	Leather works	8	12	13
	Bamboo work	5	7	2
	Carpentary	8	10	...
	Oil Pressing	1	1	...
Vare ...	Black smithy	2	5	2
	Leather works	4	5	4
Goregaon ...	Black smithy	7	12	7
	Leather works	6	10	6
	Weaving	7	14	14
	Bamboo work	2	2	4
	Carpentary	5	7	3
	Rice Mill	9	22	12
	Bricks	6	9	3
Pottery	5	9	7	
Kalwa ..	Carpentary	1	4	100
	Smithy	1	4	...
	Metal works	3	5	...
	Bricks	2	3	1
	Pottery	4	5	5
Neral --	Black Smithy	1	1	...
	Leather work	2	15	...
	Carpentary	3	6	9
Ulhasnagar	Leather works	5	15	...
	Weaving	9	28	6
	Carpentary	10	22	...
	Smithy	8	18	...
	Soop making	7	36	...
	Dyeing making	5	24	...
	Metal works	9	12	...
	Rice mills	2	5	...
	Printing	2	7	...

TABLE No. 4.5—contd.

Centre	Industry	Number of selected Establish ment	Number of workers	
			Male	Female
1	2	3	4	5
Ambarnath ..	Leather works ..	5	15	....
	Carpentary ..	6	11	2
	Smithy ..	3	6	2
	Dying ..	1	1	....
Dombivali ..	Rice Mills ..	6	9	1
	Carpentary ..	6	7	....
	Smithy ..	2	5	....
	Metal work ..	3	7	....
	Rice Mills ..	1	2	....
Bhivandi ..	Weaving ..	68	270	10
	Bamboo work ..	5	8	3
	Leather work ..	4	9	....
	Weaving ..	8	24	3
	Carpentary ..	5	8	....
	Metal work ..	6	9	....
	Rice mill ..	7	33	6
	Bricks ..	2	10	5
Pottery ..	8	15	9	
Chinchkal ..	Carpentary ..	1	1	....
Kolshit ..	Smithy ..	2	4	....
	Metal work ..	1	3	....
Walwali ..	Black smithy ..	1	1	1
	Leather works ..	1	2	4
	Oil pressing ..	1	2	1
Matheran ..	Leather works ..	6	9	....
Deolad ..	Leather work ..	2	2	....
	Carpentary ..	2	4	....
Badalapur (District Thana).	Leather making ..	5	5	....
	Carpentary ..	3	4	....
	Smithy ..	2	2	....
	Metal works ..	2	4	....
	Bricks ..	2	4	3
	Pottery work ..	6	8	7
Shahapur ..	Leather work ..	2	2	....
Virar ..	Leather work ..	2	3	....
	Smithy ..	2	6	....
	Metal work ..	3	7	....
	Bricks ..	2	4	1
	Pottery ..	8	15	9
	Dying ..	1	2	1
Kalyan ..	Leather work ..	5	10	....
	Weaving ..	1	5	....
	Bamboo works ..	7	12	9
	Carpentary ..	6	18	....
	Smithy ..	8	28	1
	Oil Pressing ..	8	18	3
	Soap making ..	3	14	....
	Metal working ..	9	14	....

TABLE No. 4.5—*concl.*

Centre	Industry	Number of selected Establish-ment	Number of workers.	
			Male	Female
1	2	3	4	5
Thana	Tanning	8	10	....
	Bamboo work	5	5	6
	Smithy	7	19	....
	Oil Pressing	3	7	....
	Metal work	8	13	....
	Rice Mills	3	11	8
	Bricks	3	7	....
	Pottery	2	3	2
	Carpentary	8	18	....
	Soap making	1	9	....
Bassein	Tanning	6	12	....
	Bamboo work	4	4	6
	Carpentary	7	14	....
	Smithy	5	10	....
	Oil Pressing	1	3	....
	Metal work	6	9	....
	Rice Mills	2	11	1
	Bricks	2	4	5
	Pottery	6	17	4

Source.—Bureau of Economics and Statistics, Bombay.

TABLE No. 5.1

*Land utilisation during the year 1962-1963 in Bombay-Panvel-Khopoli Region (Acres)*

Item	Thana	Kalyan	Bassein	Bhiwandi	*Karjat	*Panvel	Uran	*Kahalapur	Total for Region Excluding Greater Bombay	Per cent to Geographical area
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1. Total Geographical area .. .. .	84,711	1,60,680	1,33,284	1,69,735	1,60,909	1,43,232	46,066	1,00,349	9,98,966	100.00
2. Forest .. .. .	11,776	38,999	56,089	61,147	43,478	44,160	6,689	35,488	2,97,826	29.81
3. Barren of uncultivated land . . . .	9,810	11,139	7,208	5,213	15,415	19,495	10,328	14,956	93,764	9.39
4. Area put to non-Agricultural use ..	1,667	310	2,585	409	1,056	235	230	162	6,654	0.67
5. Cultivable Waste .. .. .	1,183	9,417	1,749	269	78	641	3,725	2,757	19,819	1.98
6. Permanent pastures and grazing land ..	2,532	9,844	4,701	43,519	16,853	2,753	....	....	50,202	5.03
7. Land under miscellaneous trees Graves	19,776	....	....	4,068	32,077	....	773	....	56,688	5.68
8. Current fallows .. .. .	613	....	8,613	265	21	1,669	327	61	11,569	1.16
9. Other fallows .. .. .	7,388	114	11,951	21,731	3,672	21,332	2,321	309	68,814	6.89
10. Net area shown .. .. .	29,972	90,857	40,398	63,108	48,259	52,747	21,673	46,616	393,630	39.40
11. Gross cropped area .. .. .	30,466	90,024	43,684	63,942	53,389	56,248	22,084	47,801	407,638	48.05

Source.—District Inspector of Land Records, Thana, Kolaba Districts.  
\*Full Talukas are considered.

TABLE No. 5.2

*Irrigation by Sources during year 1962-1963 in Bombay-Panvel-Khopoli Region (Acres)*

Source of Irrigation	Thana	Kalyan	Bhiwandi	Bassein	Panvel	Uran	*Karjat	*Khalapur	Total for the Region (Excluding Greater Bombay)	Per cent to total net Irrigation area
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1. Government Canals .. ..	....	....	....	....	....	....	3,449	318	3,767	34.03
2. Wells .. ..	514	26	....	3,667	1,358	185	....	127	5,877	53.07
3. Other Sources .. ..	....	706	....	....	521	....	6	188	1,421	12.90
4. Net area irrigated .. ..	514	732	....	3,667	1,879	185	3,455	633	11,065	100.00

Source.—District Inspector of Land Records, Thana and Kolaba Districts.  
\*Full Talukas are considered.



TABLE No. 5.3

*Area under important Crops during 1962-63 in Bombay-Panvel-Khopoli Region (Acres)*

Crop	Thana	Kalyan	Bassein	Bhivandi	*Karjat	*Panvel	Uran	*Khalapur	Total excluding Great er Bombay	Greater Bombay	Grand Total
1	2	3	4	5	6	7	8	9	10	11	12
1. Rice .. ..	19,836	31,727	31,622	44,649	31,624	33,719	18,398	18,880	2,35,515	6,105	2,41,620
2. Bagi .. ..	.....	1,143	633	.....	2,224	592	76	711	5,379	.....	5,379
3. Total cereals .. ..	19,969	33,313	32,460	46,818	34,751	39,615	18,515	19,975	2,44,416	6,105	2,50,521
4. Total pulses ... ..	144	1,153	1,664	1,603	1,571	1,571	157	668	8,531	.....	8,531
5. Total Oil seeds .. ..	78	301	244	438	88	2	6	49	1,206	608	1,814
6. Fruits and Vegetables ... ..	614	565	3,763	714	90	1,624	249	108	7,727	3,353	11,080
7. Fodder Crops .. ..	9,576	56,164	4,701	13,579	11,853	12,887	3,140	26,898	1,43,798	10,551	1,54,349

\*Whole talukas are covered.

Source.—Season and crop report of Thana, Kolaba and Greater Bombay District.

TABLE No. 5.4

*Distribution of Cultivating house holds according to the sizes of the holdings in Bombay-Panvel-Khopoli Region*

Item	Unit	Thana	Bassein	Bhiwandi	Kalyan	Panvel	Karjat	Khalapur	Uran	Region without Greater Bombay
1	2	3	4	5	6	7	8	9	10	11
Total cultivating households according to the land holding (Size)	....	1,400	2,257	2,419	2,325	2,643	1,927	1,205	1,238	15,414
Less than 1 Acre	.. .. .	281	561	225	308	314	198	133	257	2,277
1.0—2.4	.. .. .	615	829	823	4,034	1,118	823	472	521	6,235
2.5—4.9	.. .. .	338	487	720	626	784	578	346	326	4,205
5.0—7.4	.. .. .	95	210	318	203	260	186	143	96	1,511
7.5—9.9	.. .. .	18	65	118	55	71	69	47	19	472
10.0—12.4	.. .. .	19	35	93	46	41	32	31	8	305
12.0—14.9	.. .. .	9	15	29	10	13	15	7	3	101
15.0—29.9	.. .. .	17	43	66	24	27	21	15	5	218
30.0—49.9	.. .. .	1	6	12	5	3	1	3	....	31
50.0	.. .. .	....	1	2	....	2	2	....	....	7
Unspecified	.. .. .	7	5	13	14	10	2	8	3	62

*Source.*—Population Census, 1961.*Note.*—Based on 20 per cent. sample. All the rural areas of the talukas are considered.

TABLE No. 5.5

*Demand of Land Revenue and Outstanding Revenue in Bombay-Panvel-Khopoli Region (Rs.)*

1	Thana	Kalyan	Bhivandi	Bassein	Panvel	Uran	Karjat	Khalapur	Total for the Region (excluding Greater Bombay).
1	2	3	4	5	6	7	8	9	10
Demand 1962-63 .. ..	4,55,330	4,28,521	4,19,339	2,54,158	4,80,552	1,75,460	2,44,064	1,80,064	26,37,488
Collection 1962-63 .. ..	3,95,894	4,20,269	4,19,339	2,54,158	4,14,172	1,69,537	2,42,460	1,77,635	24,93,464
Percentage of Collection to demand ..	86.81	98.07	100.00	100.00	80.99	96.62	99.34	98.65	54.93

\*Whole Talukas are covered. Source.—District Statistical abstract for Thana and Kolaba.

TABLE No. 5.6

*Milch Cattle and Poultry in Bombay-Panvel-Khopoli Region according to 1961 live-stock census*

Item	Thana	Kalyan	Bassein	Bhivandi	Panvel	Uran	Khalapur	Karjat	Total for the region excluding Greater Bombay	Greater Bombay
1	2	3	4	5	6	7	8	9	10	11
Cows in Milk .. ..	1,626	4,476	2,033	3,017	3,087	810	3,054	3,970	21,973	3,678
Cows in Dry .. ..	4,567	13,397	6,203	11,479	9,382	2,344	8,693	13,404	69,469	5,055
Cows Young Stock .. ..	3,650	11,496	4,783	9,355	8,655	1,760	9,755	13,451	62,905	4,410
She Buffalows in milk .. ..	2,081	6,280	3,187	3,650	1,797	540	952	1,670	20,157	69,693
She Buffalows in Dry .. ..	3,737	10,819	5,431	8,036	4,096	1,129	2,177	4,629	40,054	73,390
She Buffalows Young Stock .. ..	813	2,966	1,693	4,238	4,110	708	1,825	2,121	18,474	12,650
Poultry Total .. ..	27,853	53,307	43,406	58,255	50,043	24,402	30,073	34,611	3,11,950	1,96,039
Grazing Land (Acres) .. ..	2,532	9,844	4,701	13,519	2,753	....	....	16,853	50,202	8,300

Source.—Ninth Live-stock Census, 1961 and Season crop report for the District.

\*Note.—Complete Talukas are considered.

TABLE NO. 5.7

*The Total Value of Forest Production during 1962-63 from the Forests in  
Bombay-Panvel-Khopoli Region*

Produce.			Thana, Kalyan, Bassein and Bhivandi.	Panvel, Uran, Karjat and Khalapur.	Total
	1		2	3	4
			Rs.	Rs.	Rs.
1. Timber and Charcoal	..	..	36,86,634.44	5,15,613.00	42,02,247.44
2. Bamboo	..	..	6,325.97	....	6,325.97
3. Others	..	..	38,339.98	2,023.00	40,362.98
		Total	37,31,300.39	5,17,636.00	42,48,936.39

*Source.*—Divisional Forest Officer, Thana and Kolaba Divisions.

*Note.*—Whole Talukas are Considered.

TABLE NO. 5.8

*Fisheries statistics of the Bombay-Panvel-Khopoli Region for the year 1964*

Centre of fishing village.	Fisher- men's population.	No. of fishing boats				Annual Fish products in tonnes.	Require- ment of land in acres.
		Mecha- nised.	Sail- ing.	Tonnies	Total		
1	2	3	4	5	6	7	8
<b>I. To the North of Greater Bombay—</b>							
1. Arnala							
2. Arnala (fort) .. ..	2,800	75	21	50	146	7,000	40
3. Bassein .. ..	2,300	63	14	6	83	5,500	30
4. Naigaon .. ..	1,500	20	6	4	30	1,300	10
5. Kochiwada .. ..	900	15	14	6	35	1,400	15
6. Uttan .. ..	3,400	61	20	14	95	5,000	30
7. Dongri-chowk .. ..	500	11	8	7	26	900	10
8. Georai .. ..	400	7	4	30	41	700	5
9. Manori .. ..	1,900	26	12	31	69	2,000	15
10. Rangaon .. ..	..	..	2	8	10	110	1
11. Kolamb .. ..	..	..	1	4	5	55	1
I. Sub-Total .. ..	13,700	278	92	160	540	23,965	157
<b>II. Greater Bombay—</b>							
1. Malvani .. ..	1,100	21	5	88	114	2,000	10
2. Varangal Madh .. ..	1,400	48	133	58	239	3,500	70
3. Varsova .. ..	5,000	161	26	278	465	12,000	75
4. Juhu-Tara .. ..	350	7	14	12	33	600	10
5. Danda .. ..	1,600	60	66	49	175	6,000	50
6. Chimbai .. ..	300	27	17	5	49	2,000	20
7. Mahim .. ..	1,000	24	..	1	25	1,700	10
8. Worli .. ..	1,000	29	28	60	117	2,000	22
9. Dharavi .. ..	..	..	..	13	13	65	....
10. Lower Colaba .. ..	1,300	10	40	103	153	2,000	20
11. Majgaon .. ..	77	3	4	..	7	300	2
12. Sewri .. ..	..	..	1	28	29	170	1
13. Sion .. ..	..	..	1	5	6	55	1
14. Mahul .. ..	500	..	5	49	54	300	2
15. Trombay .. ..	900	..	33	29	62	1,500	7
II. Sub-Total .. ..	14,527	300	353	823	1,561	34,190	300

TABLE NO. 5.8—*contd.*

Centre of fishing village.	Fisher- men's population.	No. of fishing boats				Annual Fish products in Tonnes.	Require- ment of land in acres	
		Mecha- nised	Sail- ing	Tonnies.	Total			
1	2	3	4	5	6	7	8	
<i>Rest—</i>								
1. Chantni Kajwada	..	NA	4	22	4	30	260	10
2. Balkumpada	..	NA	3	..	5	8	235	1
3. Panvel	..	NA	..	2	19	11	230	1
4. Waghwali	..	NA	..	..	3	3	30	....
5. Ulwa, Moba	..	475	..	50	28	78	2,600	20
6. Ghavan	..	NA	12	32	30	82	1,020	16
7. Targhar	..	NA	..	..	31	31	310	....
8. Kelewani	..	NA	2	5	19	26	290	4
9. Panje	..	NA	1	1	3	5	50	1
10. Dolghar	..	NA	..	2	..	3	40	1
11. Apte	..	NA	..	7	8	15	220	4
12. Shewa	..	NA	..	2	46	48	600	1
13. Nbawa	..	NA	..	1	2	3	40	1
14. Uran	..	180	2	1	15	18	120	1
15. Mora	..	490	25	32	25	82	2,100	24
16. Dighade	..	NA	1	6	1	8	140	4
17. Karanja	..	2,300	106	149	63	318	10,800	103
Sub-Total	..	3,445	157	312	310	769	19,085	192
Sub-Total 1	..	13,700	278	92	160	540	23,965	157
Sub-Total 2	..	14,527	390	553	823	1,561	34,190	300
Sub-Total 3	..	3,445	157	312	310	769	10,685	192
Grand Total	..	31,627	825	757	1,293	2,870	77,240	649

*Source.*—Directorate, Fisheries, Maharashtra State, Bombay-2.

TABLE NO. 6.1(A)

*Number of Villages without Post office in Bombay-Panvel-Khopoli Region*

Item	Thana	Kalyan	Bassein	Bhivandi	Panvel*	Uran	Khalapur*	Karjat*	Total	Number of villages in the range.	Percentage of Col. 10 to Col. 11.	Percentage of rangewise villages without the facility to total villages without the facility.
1	2	3	4	5	6	7	8	9	10	11	12	13
(1) Upto 199 .. ..	14	35	7	37	47	3	15	29	187	187	100.00	21.23
(2) 200—499 .. ..	16	83	15	78	48	10	39	49	338	343	98.67	38.36
(3) 500—999 .. ..	20	53	21	55	45	12	13	23	242	244	99.18	27.47
(4) 1,000—1,999 .. ..	10	13	23	15	15	10	3	5	94	117	80.34	10.67
(5) 2,000—4,999 .. ..	3	3	7	3	3	1	..	..	20	45	22.22	2.27
(6) 5,000—9,999 .. ..	..	..	..	..	..	..	..	..	..	3	....	....
(7) 10,000 and above .. ..	..	..	..	..	..	..	..	..	..	1	....	....
(8) All ranges .. ..	63	187	73	188	158	36	70	106	881	940	93.72	100.00

Source.—(1) District Census Hand Book, 1961.

\*Villages included in the region are considered.

TABLE NO. 6.1(B)

*Number of villages without Telegraph office in Bombay-Panvel-Khopoli Region*

Item	Thana	Kalyan	Bassein	Bhivandi	Panvel*	Uran	Khalapur*	Karjat*	Total	Number of villages in the range	Percentage of Col. 10 to Col. 11	Percentage of rangewise villages without the facility to total villages without the facility
1	2	3	4	5	6	7	8	9	10	11	12	13
(1) Upto 199 .. ..	14	35	7	37	47	3	15	29	187	187	100.00	19.89
(2) 200—499 .. ..	16	83	15	76	48	10	41	51	343	343	100.00	36.49
(3) 500—999 .. ..	20	53	21	55	45	12	14	23	243	244	99.59	25.96
(4) 1,000—1,999 .. ..	12	17	24	18	20	12	4	5	112	117	95.73	12.55
(5) 2,000—4,999 .. ..	9	5	14	8	5	4	..	..	45	45	100.00	4.79
(6) 5,000—9,999 .. ..	..	..	2	..	..	1	..	..	3	3	100.00	0.32
(7) 10,000 and above .. ..	..	..	..	..	..	..	..	..	..	1	....	....
(8) All ranges .. ..	71	193	83	197	165	42	74	108	933	940	99.26	100.00

*Source.*—District Census Hand book, 1961.

\*Villages included in the region are considered.



TABLE NO. 6.1(C)

## Number of Villages without Main Roads in Bombay-Panvel-Khopoli Region

Item	Thana	Kalyan	Bassein	Bhivandi	Panvel*	Uran	Khalapur*	Karjat*	Total	Number of villages in the range.	Percentage of Col. 10 to Col. 11.	Percentage of rangewise villages without the facility to total villages without the facility.
1	2	3	4	5	6	7	8	9	10	11	12	13
(1) Upto 199 .. ..	11	25	7	33	31	1	10	22	140	187	74·87	27·03
(2) 200—499 .. ..	10	62	7	55	20	5	21	37	217	343	63·27	41·89
(3) 500—999 .. ..	8	23	11	31	30	3	5	16	127	244	52·05	24·52
(4) 1,000—1,999 .. ..	2	5	5	3	4	4	..	1	24	117	21·37	4·82
(5) 2,000—4,999 .. ..	..	1	..	4	2	2	..	..	9	45	20·00	1·74
(6) 5,000—9,999 .. ..	..	..	..	..	..	..	..	..	..	3	....	....
(7) 10,000 and above .. ..	..	..	..	..	..	..	..	..	..	1	100·00	....
(8) All ranges .. ..	31	116	30	126	87	15	36	76	517	940	55·11	100·00

Source.—District Census Hand Book, 1961.

\*Villages included in the Region are considered.

TABLE NO. 6.1(D)

*Number of Villages without Railway Station in Bombay-Panvel-Khopoli Region*

Item	Thana	Kalyan	Bassein	Bhivandi	Panvel*	Uran	Khalapur*	Karjat*	Total	Number of villages in the range.	Percentage of Col. 10 to Col 11.	Percentage of rangewise villages without the facility to total villages without the facility.
1	2	3	4	5	6	7	8	9	10	11	12	13
(1) Upto 199 .. ..	14	35	7	37	47	3	14	29	186	187	99.47	20.17
(2) 200—499 .. ..	16	82	15	79	48	10	40	49	339	343	98.95	36.77
(3) 500—999 .. ..	20	53	21	55	45	12	13	23	242	244	99.18	26.25
(4) 1,000—1,999 .. ..	12	15	21	18	20	12	5	6	109	117	93.16	11.82
(5) 2,000—4,999 .. ..	8	3	14	8	5	4	..	..	42	45	93.33	4.55
(6) 5,000—9,999 .. ..	..	..	2	..	..	1	..	..	3	3	100	0.33
(7) 10,000 and above .. ..	..	..	1	..	..	..	..	..	1	1	100	0.11
(8) All ranges .. ..	70	188	81	197	165	42	72	107	922	940	98.09	100.00

*Source.*—District Census Hand Book, 1961.

\*Villages included in the region are considered.

TABLE NO. 6.1 (E)

*Distribution of Villages without Common facilities in Bombay-Panvel-Khopoli Region 1961.*

Facility	Total Villages in the Region	Villages without the given facility			Their distribution according to population ranges					
		Number	Percent to Column 2	Upto 199	200-499	500-999	1,000-1,999	2,000-4,999	5000-9,999	10,000 & above
1	2	3	4	5	6	7	8	9	10	11
1. Post Office .. .. .	940	881	93.72	187	338	242	94	20	....	....
2. Telegraph Office .. .. .	940	933	99.26	187	343	243	112	45	3	....
3. Main Road .. .. .	940	518	55.11	140	217	127	24	9	....	....
4. Railway Station .. .. .	940	922	98.09	186	339	242	109	42	3	1

*Source.*—District Census Hand Book, 1961.*Note.*—Villages included in the region are considered.

TABLE No. 6.2

*Density of Road Traffic on some important focal points in Bombay-Panvel-Khopoli Region in 1965*

Focal point	Name of Road	In coming vehicles per day				Outgoing vehicles per day				
		Trucks	Buses	Others	Total	Trucks	Buses	Others	Total	
1	2	3	4	5	6	7	8	9	10	
Thana	.. Ghod Bunder Road (Kelshi Village)	..	385	111	280	776	430	114	295	839
	.. Thana-Belapur Road	..	187	121	193	501	195	60	229	484
	.. Bombay-Agra Road	..	736	128	565	1,429	1,135	272	754	2,161
	.. Bombay-Poona Road	..	572	200	619	1,391	545	120	590	1,255
Kalyan	.. Kalyan-Bhivandi Road	..	248	115	318	681	314	79	260	653
	.. Kalyan-Murbad Road	..	214	155	376	745	206	266	463	935
	.. Kalyan-Shil Road	..	143	47	245	435	145	54	231	430
Bhivandi	.. Bhivandi-Agra Road	..	583	58	495	1,136	611	68	727	1,406
	.. Bhivandi-Kalyan Road	..	285	42	283	610	222	40	534	6,796
Panvel	.. Bombay-Poona Road	..	815	151	648	1,614	793	131	513	1,437
	.. Poona-Bombay junction with West Coast Road	..	747	178	692	1,617	714	148	724	1,586

Source.—Regional Transport Survey Unit, Finance Department, Maharashtra State, Bombay 8.

TABLE No. 6.3(1)

*Average daily goods traffic according to the origin and destination at the Focal Point at Panvel Check point No. 1 in the Region* (Quantity in Kg.)

Origin of the traffic	Destination within the Bombay, Panvel, Khopoli Region										Total			
	Bombay	Thana	Kalyan	Mumbra	Ambernath	Panvel	Karjat	Uran	Kalwa	Bassein				
1	2	3	4	5	6	7	8	9	10	11	12			
Origin with in the Region	..	..	..	..	....	....	1,00,850	....	....	....	....	....		
1. Bombay City	..	..	..	..	....	....	....	14,000	9,000	....	....	1,23,850		
2. Thana District	..	..	..	..	....	....	3,500	10,300	....	....	....	13,800		
3. Kalyan	..	..	..	..	....	....	12,000	....	....	....	....	12,000		
4. Mumbra	..	..	..	..	....	....	....	....	....	....	....	....		
5. Ambernath	..	..	..	..	....	....	....	....	....	....	....	....		
6. Panvel	..	..	..	1,18,700	6,400	5,000	....	....	....	....	....	1,30,100		
7. Karjat	..	..	..	19,000	..	1,000	....	....	....	....	....	20,000		
8. Uran	..	..	..	5,000	..	..	....	....	....	....	....	5,000		
9. Kalwa	..	..	..	..	..	..	....	....	....	....	....	....		
10. Bassein	..	..	..	..	..	..	....	....	....	....	....	....		
Total	..	..	..	1,42,700	6,400	6,000	....	....	1,16,350	24,300	9,000	....	....	3,04,750

TABLE NO. 6.3(1)—(contd).

Average daily goods traffic according to the origin and destination at the Focal Point at Panvel Check point No. 1 in the Region (Quantity in Kg.)

Origin of the traffic	Destination outside the				Region but within Maharashtra				Total
	Thana district	Kolaba district	Poona	Satara, Sangli, Khalapur	Ahmednagar	Sholapur, Osmanabad	Nasik, Dhulia	Ratnagiri	
1	13	14	15	16	17	18	19	20	21
Origin with in the Region—									
1. Bombay City	--	2,82,199	15,41,216	3,22,965	1,16,630	8,697	....	1,51,050	24,22,757
2. Thana District	..	10,100	....	....	....	....	....	....	....
3. Kalyan	..	7,000	16,500	....	....	....	....	....	26,600
4. Mumbra	..	....	....	....	....	....	....	....	7,000
5. Ambernath	..	....	....	....	....	....	....	....	....
6. Panvel	--	9,000	....	....	....	....	18,000	....	22,000
7. Karjat	..	....	....	....	....	....	....	....	....
8. Uran	..	....	....	....	....	....	....	....	....
9. Kalwa	--	....	....	....	....	....	....	....	....
10. Bassein	--	....	....	....	....	....	....	....	....
Total	..	3,08,299	15,57,716	3,22,965	1,16,630	8,697	13,000	1,51,050	24,78,857

TABLE NO. 6.3(1)—contd.

Average daily goods traffic according to the origin and destination at the Focal Point at Panvel Check Point No. 1 in the Region. (Quantity in Kg.)

Origin of the traffic	Destination outside Maharashtra									Grand Total	
	Mysore	Madras	Andhra Pradesh	Bengal (West)	Madhya Pradesh	Gujarat	Rajasthan	Goa	Total		
1	22	23	24	25	26	27	28	29	30	31	
<b>(Origin within the region)—</b>											
1. Bombay .. ..	77,828	20,500	1,22,600	6,500	....	....	....	38,500	9,66,381	35,12,988	
2. Thana .. ..	20,200	....	....	....	....	....	....	....	20,200	34,000	
3. Kalyan .. ..	30,500	....	....	....	....	....	....	....	30,500	69,100	
4. Mumbra .. ..	....	....	....	....	....	....	....	....	....	7,000	
5. Ambernath .. ..	....	....	....	....	....	....	....	....	....	....	
6. Panvel .. ..	....	....	....	....	....	....	....	....	....	1,52,100	
7. Karjat .. ..	....	....	....	....	....	....	....	....	....	20,000	
8. Uran .. ..	....	....	....	....	....	....	....	....	....	5,000	
9. Kalwa .. ..	....	....	....	....	....	....	....	....	....	....	
10. Bassein .. ..	....	....	....	....	....	....	....	....	....	....	
<b>Total .. ..</b>	<b>8,28,981</b>	<b>20,500</b>	<b>1,22,600</b>	<b>6,500</b>	<b>....</b>	<b>....</b>	<b>....</b>	<b>38,500</b>	<b>10,17,081</b>	<b>38,00,188</b>	

TABLE NO. 6·3(1)—contd.

Origin of the traffic	Destination within the Bombay, Panvel, Khopoli Region										Total
	Bombay	Thana	Kalyan	Mumbra	Ambarnath	Panvel	Karjat	Uran	Kalwa	Bassein	
1	2	3	4	5	6	7	8	9	10	11	12
(Origin outside region but within Maharashtra).—											
12. Thana District .. ..	..	..	..	..	..	..	..	..	..	..	..
13. Kolaba District .. ..	2,74,500	12,000	29,700	..	..	3,300	..	..	..	..	3,49,200
14. Poona District .. ..	9,54,246	4,300	14,400	..	..	..	..	..	9,000	..	9,81,946
15. Satara, Sangli and Kolhapur .. ..	6,73,350	42,799	6,500	..	..	..	..	..	..	..	7,22,649
16. Ahmednagar, Aurangabad and Bhir .. ..	1,32,050	..	4,000	..	..	..	..	..	..	..	1,36,050
17. Sholapur .. ..	3,77,950	..	..	..	..	..	..	..	7,000	..	3,84,950
18. Nasik, Dhulia .. ..	..	..	..	..	..	..	..	..	..	..	..
19. Ratnagiri .. ..	2,54,796	..	4,500	..	..	..	..	..	..	..	2,59,296
20. Total .. ..	26,66,892	59,099	59,100	..	..	3,300	..	..	16,000	..	28,34,091
(Origin from other States)—											
21. Mysore .. ..	7,79,558	..	..	..	..	..	..	..	..	..	7,79,558
22. Madras .. ..	5,000	..	..	..	..	..	..	..	..	..	5,000
23. Andhra Pradesh .. ..	1,21,200	..	..	..	..	..	..	..	..	..	1,21,200
24. West Bengal .. ..	..	..	..	..	..	..	..	..	..	..	..
25. Madhya Pradesh .. ..	..	..	..	..	..	..	..	..	..	..	..
26. Gujarat .. ..	..	..	..	..	..	..	..	..	..	..	..
27. Rajasthan .. ..	..	..	..	..	..	..	..	..	..	..	..
28. Goa .. ..	16,000	..	..	..	..	..	..	..	..	..	16,000
29. Total .. ..	9,21,758	..	..	..	..	..	..	..	..	..	9,21,758
30. All Originating Stations .. ..	37,31,350	65,499	65,100	..	..	1,49,350	24,300	9,000	16,000	..	40,60,599
31. Grand Total .. ..	..	..	..	..	..	..	..	..	..	..	..



TABLE No. 6·3(1)—contd.

Origin of the traffic 1	Destination outside the									
	Thana district 13	Kolaba district 14	Poona 15	Satara, Sangli, Khalapur 16	17	18	19	20	21	
(Origin outside region but within Maharashtra)—										
12. Thana district .. ..	....	4,000	....	....	....	....	....	....	....	4,000
13. Kolaba district .. ..	....	....	....	....	....	4,000	....	....	....	4,000
14. Poona district .. ..	....	3,000	....	....	....	....	....	....	....	3,000
15. Satara, Sangli and Kolhapur ..	....	....	....	....	....	....	....	....	....	....
16. Ahmednagar, Ahmedabad and Bhir.	....	....	6,750	....	....	....	....	....	....	6,750
17. Sholapur .. ..	....	....	....	....	....	....	....	....	....	....
18. Nasik, Dhulia .. ..	....	....	....	....	....	....	....	....	....	....
19. Ratnagiri .. ..	....	....	....	....	....	....	....	....	....	....
20. Total .. ..	....	7,000	6,750	....	....	4,000	....	....	....	17,750
(Origin from other States)—										
21. Mysore .. ..	....	....	6,000	....	....	....	....	....	....	6,000
22. Madras .. ..	....	....	....	....	....	....	....	....	....	....
23. Andhra-Pradesh .. ..	....	....	....	....	....	....	....	....	....	....
24. West Bengal .. ..	....	....	....	....	....	....	....	....	....	....
25. Madhya Pradesh .. ..	....	....	....	....	....	....	....	....	....	....
26. Gujarat .. ..	....	....	27,199	15,000	....	7,200	....	....	....	49,399
27. Rajasthan .. ..	....	....	....	....	....	....	....	....	....	....
28. Goa .. ..	....	....	....	....	....	....	....	....	....	....
29. Total .. ..	....	....	33,199	15,000	....	7,200	....	....	....	55,399
30. All originating stations .. ..	....	3,15,299	15,97,665	3,37,965	....	19,897	13,000	1,51,050	....	25,51,506
31. Grant Total .. ..	....	....	....	....	....	....	....	....	....	....

TABLE No. 6·3(1)—concl'd.

Origin of the traffic 1	Destination outside Maharashtra									Grand Total 31
	Mysore 22	Madras 23	Andhara Pradesh 24	Bengal (West) 25	Madhya Pradesh 26	Gujarat 27	Rajasthan 28	Goa 29	Total 30	
<b>(Origin within Maharashtra)—</b>										
12. Thana .. ..	....	....	....	....	....	....	....	....	....	4,000
13. Kolaba .. ..	....	....	....	....	....	....	....	....	....	3,53,200
14. Poona .. ..	....	....	....	....	....	....	....	....	....	9,84,946
15. Satara, Sangli, Kolhapur .. ..	....	....	....	....	....	....	31,500	....	31,500	7,54,149
16. Ahmednagar, Ahmedabad and Bhir .. ..	....	....	....	....	....	....	....	....	....	1,42,800
17. Sholapur .. ..	....	....	....	....	....	....	8,500	....	8,500	3,93,450
18. Nasik, Dhulia and Jalgaon .. ..	....	....	....	....	....	....	....	....	....	....
19. Ratnagiri .. ..	....	....	....	....	....	....	....	....	....	2,59,296
20. Total .. ..	....	....	....	....	....	....	40,000	....	40,000	28,91,841
<b>(Origin from other States)—</b>										
21. Mysore .. ..	....	....	....	....	....	15,099	....	....	15,099	8,00,657
22. Madras .. ..	....	....	....	....	....	....	....	....	....	5,000
23. Andhra Pradesh .. ..	....	....	....	....	....	....	....	....	....	1,21,200
24. West Bengal .. ..	....	....	....	....	....	....	....	....	....	....
25. Madhya Pradesh .. ..	....	....	....	....	....	....	....	....	....	....
26. Gujarat .. ..	....	....	....	....	....	....	....	....	....	49,999
27. Rajasthan .. ..	....	....	....	....	....	....	....	....	....	....
28. Goa .. ..	....	....	....	....	....	....	....	....	....	16,000
29. Total .. ..	....	....	....	....	....	15,099	....	....	15,099	9,92,256
30. All originating stations .. ..	8,28,991	20,500	1,22,600	6,500	....	15,099	40,000	38,500	10,72,780	76,84,285

Source: Regional Transport Survey Unit, Finance Department, Bombay-8

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TABLE NO. 6.3(2)

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TABLE NO. 6.3(2)

*Average Daily Goods Traffic according to the Origin and Destination at the Focal Point at Panvel Check Point No. 2*

Place of Origin of the Traffic	Destination within the Bombay, Panvel, Khopoli Region										
	Bombay	Thana	Kalyan	Mumbra	Ambarnath	Panvel	Karjat	Uran	Kalwa	Bassein	Total
1	2	3	4	5	6	7	8	9	10	11	12
(Origin with in the Region)—											
1. Bombay City .. ..	..	..	..	..	..	17,499	33,450	..	..	..	50,949
2. Thana .. ..	..	..	..	..	..	..	5,500	..	..	..	5,500
3. Kalyan .. ..	..	6,660	..	..	..	..	..	..	..	..	6,660
4. Mumbra .. ..	..	..	..	..	..	..	..	..	..	..	..
5. Ambarnath .. ..	..	..	..	..	..	..	..	..	..	..	..
6. Panvel .. ..	..	3,500	..	..	..	..	..	..	..	..	..
7. Karjat .. ..	..	19,050	..	..	..	..	..	..	..	..	..
8. Uran .. ..	..	..	..	..	..	..	..	..	..	..	..
9. Kalwa .. ..	..	..	..	..	..	..	..	..	..	..	..
10. Bassein .. ..	..	..	..	..	..	..	..	..	..	..	..
11. Total .. ..	..	29,210	..	..	..	17,499	38,950	..	..	..	85,659

(Places outside the Region, but within the Maharashtra)—												
Y 4422-19a	12.	Thana District	..	..	....	..	..	..	....	....	....	....
	13.	Kolaba	..	..	2,93,210	26,500	26,200	..	....	42,660	....	3,88,570
	14.	Poona	..	..	6,47,500	17,000	6,990	..	....	....	....	6,71,490
	15.	Satara, Sangli, Kolhapur	..	..	5,24,005	..	..	..	....	6,500	....	5,30,505
	16.	Ahmednagar, Aurangabad, Bhir District.	..	..	97,860	..	..	..	....	6,500	....	1,04,360
	17.	Sholapur Osmanabad.	..	..	2,27,390	..	..	..	....	....	....	2,27,390
	18.	Nasik, Dhulia, Jalgaon District	..	..	7,500	..	..	..	....	....	....	7,500
	19.	Ratnagiri District	..	..	2,76,910	..	..	..	....	....	....	2,76,910
	20.	Total	..	..	20,74,375	43,500	33,190	..	....	55,660	....	22,06,729
	Origin from other State.											
	21.	Mysore	..	..	6,38,858	..	..	..	....	....	....	6,38,858
	22.	Madras	..	..	18,000	..	..	..	....	....	....	18,000
	23.	Andhra Pradesh	..	..	93,659	..	..	..	....	....	....	93,659
	24.	West Bengal	..	..	....	..	..	..	....	....	....	....
	25.	Madhya Pradesh	..	..	6,780	..	..	..	....	....	....	6,780
	26.	Gujrat	..	..	6,000	..	..	..	....	....	....	6,000
	27.	Rajastan	..	..	....	..	..	..	....	....	....	....
	28.	Goa	..	..	9,000	..	..	..	....	....	....	9,000
	29.	Total	..	..	7,72,297	..	..	..	....	....	....	7,72,297
	Grand Total		..	..	28,75,882	43,500	33,190	..	....	73,159	38,950	30,64,681

Source.—Regional Transport Survey Unit, Finance Department, Bombay-8

TABLE No. 6.3(2)—contd.

Average Daily Goods Traffic according to the Origin and Destination at the Focal Point at Panvel Check Point No. 2:

Place of Origin of the Traffic	Places outside the region but					Within Maharashtra State				Total
	Thana district	Kolaba district	Poona district	Satara, Sangli, Kolhapur district	Ahmednagar, Aurangabad, Bhir district	Sholapur, Usmanabad	Nasik, Dhulia, Jalgaon	Ratnagiri		
1	13	14	15	16	17	18	19	20	21	
(Origin within the Region)—										
1. Bombay City .. ..	....	3,49,254	14,58,345	7,66,469	1,05,750	4,02,030	....	1,71,000	32,52,848	
2. Thana .. ..	....	....	5,000	....	....	....	....	....	12,000	
3. Kalyan .. ..	....	....	14,800	7,000	6,000	....	....	....	20,800	
4. Mumbra .. ..	....	....	....	....	....	....	....	....	....	
5. Ambarnath .. ..	....	....	....	....	....	....	....	....	....	
6. Panvel .. ..	....	5,66,800	29,900	6,500	....	15,500	....	....	6,18,700	
7. Karjat .. ..	....	....	....	....	....	..	....	....	....	
8. Uran .. ..	....	....	....	....	....	....	....	....	....	
9. Kalwa .. ..	....	....	....	....	..	....	....	....	....	
10. Bassein .. ..	....	....	....	....	....	....	....	....	....	
11. Total .. ..	....	9,16,054	15,08,045	7,79,969	1,11,750	4,17,530	....	1,71,000	39,04,348	

Places outside the Region, but within the Maharashtra—												
12.	Thana District	..	..	....	....	....	....	....	....	....	....	
13.	Kolaba	..	..	....	28,500	....	....	....	....	....	28,500	
14.	Poona	..	..	....	....	....	....	....	....	....	....	
15.	Satara, Sangli, Kolhapur Districts.			....	....	....	....	....	....	....	....	
16.	Ahmednagar, Aurangabad, Bhir District.			....	....	....	....	....	....	....	....	
17.	Sholapur Osmanabad.	..	..	....	....	....	....	....	....	....	....	
18.	Nasik, Dhulia, Jalgaon District	..	..	....	....	....	....	....	....	....	....	
19.	Ratnagiri District	..	..	....	....	....	....	....	....	6,500	6,500	
20.	Total	..	..	....	....	28,500	....	....	....	6,500	35,000	
Origin from other State.												
21.	Mysore	..	..	....	....	....	....	....	....	....	....	
22.	Madras	..	..	....	....	....	....	....	....	....	....	
23.	Andhra Pradesh	..	..	....	....	....	....	....	....	....	....	
24.	West Bengal	..	..	....	....	....	....	....	....	....	....	
25.	Madhya Pradesh	..	..	....	....	....	....	....	....	....	....	
26.	Gujrat	..	..	....	....	12,415	5,000	....	....	....	17,415	
27.	Rajasthan	..	..	....	....	....	....	....	....	....	....	
28.	Goa	..	..	....	....	....	....	....	....	....	....	
29.	Total	..	..	....	....	12,415	5,000	....	....	....	17,415	
Grand Total												
		..	..	....	9,16,054	15,48,960	7,84,969	1,11,750	4,17,530	6,500	1,71,000	30,56,763

Source—Regional transport Survey Unit, Finance Department, Bombay-8

TABLE NO. 6.3(2)—concl'd.

Average Daily Goods Traffic according to the Origin and Destination at the Panvel Check Point No. 2

Places of Origin of the Traffic	Other States										Grand Total	
	Mysore	Madras	Andhra Pradesh	West Bengal	Madhya Pradesh	Gujrat	Rajastan	Goa	Kerala	Total		
1												
(Origin within the Region)—												
1. Bombay City .. ..	9,08,467	12,500	1,33,940	6,000	6,500	....	....	6,500	7,000	10,80,907	43,84,704	
2. Thana .. ..	..	..	..	....	....	....	....	....	..	....	17,500	
3. Kalyan .. ..	..	..	..	....	....	....	....	....	....	....	27,460	
4. Mumbra .. ..	..	..	..	....	....	....	....	....	....	....	....	
5. Ambarnath .. ..	..	..	..	....	....	....	....	....	....	....	....	
6. Panvel .. ..	..	..	..	....	....	....	....	....	....	..	6,22,200	
7. Karjat .. ..	..	..	..	....	....	....	....	....	....	....	19,050	
8. Uran .. ..	..	..	..	....	....	....	....	....	....	....	....	
9. Kalwa .. ..	..	..	..	....	....	....	....	....	....	....	....	
10. Bassein .. ..	..	..	..	....	....	....	....	....	....	....	....	
11. Total .. ..	9,08,467	12,500	1,33,940	6,000	6,500	....	....	6,500	7,000	10,80,907	50,70,914	



Places outside the Region, but within the Maharashtra—														
12.	Thana District	..	..	..	..	..	....	....	....	....	....	....	....	
13.	Kolaba	..	..	..	..	..	....	....	....	....	....	....	4,17,070	
14.	Poona	..	..	..	..	..	....	....	5,000	....	....	....	5,000	6,76,490
15.	Satara, Sangli, Kolhapur Districts.	..	..	..	..	..	....	....	19,000	....	....	....	19,000	5,49,505
16.	Ahmednagar, Aurangabad, Bhir Districts.	..	..	..	..	..	....	..	....	....	....	....	....	1,04,360
17.	Sholapur, Osmanabad.	..	..	..	..	..	....	....	....	....	....	....	....	2,27,390
18.	Nasik, Dhulia, Jalgaon District	..	..	..	..	..	....	....	....	....	....	....	....	7,500
19.	Ratnagiri District	..	..	..	..	..	....	....	....	....	....	....	....	2,83,410
20.	Total	..	..	..	..	..	....	....	24,000	....	....	....	24,000	22,65,725
Origin from other States.														
21.	Mysore	..	..	..	..	..	....	....	....	....	....	....	....	6,38,858
22.	Madras	..	..	..	..	..	....	....	....	....	....	....	....	18,000
23.	Andhra Pradesh	..	..	..	..	..	....	....	....	....	....	....	....	93,659
24.	West Bengal	..	..	..	..	..	....	....	....	....	....	....	....	....
25.	Madhya Pradesh	..	..	..	..	..	....	....	....	....	....	....	....	6,780
26.	Gujrat	..	..	..	6,000	..	....	....	....	....	....	....	6,000	29,415
27.	Rajasthan	..	..	..	..	..	....	....	....	....	....	....	....	....
28.	Goa	..	..	..	..	..	....	....	....	....	....	....	....	9,000
29.	Total	..	..	..	6,000	..	....	....	....	....	....	....	6,000	7,95,712
Grand Total		..	..	9,14,467	12,500	1,33,940	6,000	6,500	24,000	....	6,500	7,000	11,10,907	81,32,351

Source : Regional transport Survey Unit, Finance Department, Bombay-8.

TABLE NO. 6.4

*Outward Traffic of Goods & Passengers from some Stations in the Bombay-Panvel-Khopoli Region during 1960-61*

Station (1)	Outward traffic		Inward traffic.			
	Passenger		Goods		Goods.	
	Number (2)	Revenue (Rs.) (3)	Quantity (4)	Revenue (5)	Quantity (6)	Revenue(Rs.) (7)
1. Thana ..	1,43,915	5,10,561	7,76,413	14,64,593	5,37,931	8,52,862
	....	....	4,726	3,263	....	....
	....	....	206	890	....	....
2. Kalwa ..	1,791	1,001	....	....	....	....
3. Mumbra ..	14,537	11,005	1,18,368	41,831	41,032	76,342
4. Diva ..	502	541	36,972	29,962	28,168	61,833
5. Dombivali ..	45,932	66,158	184	....	137,22,082	12,394
6. Thakurli ..	15,257	3,400	....	....	268	337
7. C. P. House ..	....	....	4,33,653	2,03,465	3,01,184	48,887
8. Kalyan ..	7,62,623	16,37,638	7,95,753	4,77,987	42,21,758	37,08,894
9. Wadavali ..	....	....	11,217	1,399	....	....
10. Shahad ..	1,28,909	56,969	2,543	6,368	....	....
11. Titwal ..	1,46,936	44,927	14,696	3,439	17,449	62,380
12. Khadavli ..	55,349	30,484	4,498	3,012	22	53
13. Vasind ..	61,731	31,734	21,369	12,092	1,11,435	2,274
14. Vithalwadi ..	2,24,294	93,270	53,755	1,86,166	7,249	7,198
15. Ulhasnagar ..	3,23,796	1,49,202	....	....	....	....
16. Ambarnath ..	5,40,690	2,77,079	7,27,170	12,86,721	7,20,425	8,76,618
	....	....	26,796	20,664	26,283	30,923
17. Badlapur ..	2,43,692	90,951	29,873	22,571	13,238	20,859
18. Vangani ..	87,459	31,066	66,543	37,041	4,810	1,387
19. Neral ..	1,71,556	1,08,932	44,716	24,591	32,570	54,445
20. Bhiwpuri road ..	96,782	34,610	34	....	18,865	15,121
	....	....	1,599	5,752	1,502	5,140
21. Karjat ..	3,40,715	3,09,786	58,437	36,706	56,046	71,742
22. Palasdhari ..	7,985	898	....	....	....	....
23. Thakurwadi ..	....	....	35	208	41	128
24. Neral (Local) ..	14,983	12,435	7,362	10,797	963	1,553
25. Jummapathi ..	....	....	43,274	89,604	13,612	48,450
26. Matheran ..	30,948	49,804	1,419	2,872	15,955	22,891
27. Kelavali ..	15,118	2,224	....	....	8	32
28. Dolavli ..	24,438	6,730	1	3	....	....
29. Lowjee ..	7,212	1,367	1,491	2,070	538	137
30. Khopoli ..	30,950	21,172	177,348	250,717	1,89,407	3,31,790
			5,166	11,202	100	3,346

TABLE NO. 6.4—*contd.**Outward Traffic of Goods & Passengers from some Stations in the Bombay-Panvel-Khopoli Region during 1960-61.*

Station	Outward traffic		Inward traffic.			
	Passenger		Goods		Goods	
	Number	Revenue Rs.	Quantity	Revenue	Quantity	Revenue(Rs)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
31. Dahisar ..	13,88,102	2,61,205	22	823	112	N.A.
32. Mira Road ..	42,087	8,888	46,863	14,066,672	1,761	N.A.
33. Bhainder ..	9,22,086	2,19,615	75,890	16,50,366	5,478	N.A.
34. Naigaon ..	3,96,368	82,757	....	....	45	N.A.
35. Bassein Road ..	27,92,501	7,91,605	39,125	15,11,819	33,857	N.A.
36. Nalla Sopara ..	8,71,167	1,84,185	187	3,043	2,505	N.A.
37. Virar ..	15,23,333	5,25,864	9,380	42,320	10,564	N.A.
<b>Total ..</b>	<b>1,14,73,724</b>	<b>11,5,09,458</b>	<b>55,129,40</b>	<b>72,59,446</b>	<b>71,46,661</b>	<b>63,18,216</b>
Greater Bombay B.P.T.	N.A.	" N.A.	13,53,204	67,182,913	43,94,000	N.A.
Greater Bombay ..						
Western Railway ..	22,00,61478	87,323,135	74,771,962	26,37,798	18,81,511	N.A.
Greater Bombay ..						
Central Railway ..	20,36,45,295	55,216,567	3,25,23,954	95,511,935	3,54,45,785	5,24,42,379

N.A. = Not available.

Source.—Central and Western Railways.

TABLE NO. 7.1

*Villages with inadequate and/without drinking water facilities during 1964 in Bombay-Panvel-Khopoli Region*

Item	Thana	Bassein	Bhivandi	Kalyan	Panvel*	Karjat*	Khalapur	Uran	Region without Greater Bombay	Greater Bombay
1	2	3	4	5	6	7	8	9	10	11
Villages without sources of drinking water ..	6	6	5	4	....	23	29	4	77	....
Villages with inadequate drinking water ..	37	32	63	16	103	47	63	26	287	....

Source.—Bureau of Economics and Statistics, Bombay.

\*Full talukas are covered

TABLE NO. 7.2

*Number of Villages/Towns Electrified and the Corresponding Population benefited in Bombay-Panvel-Khopoli Region*

Taluka	Population			No. of places having electricity		Population served with Electricity			Percentage of		
	Rural	Urban	Total	Villages	Towns	Rural	Urban	Total	Col. 7 to Col. 2	Col. 8 to Col. 3	Col. 9 to Col. 4
1	2	3	4	5	6	7	8	9	10	11	12
1. Thana .. .. .	70,260	1,16,189	1,86,449	6	3	9,700	1,16,189	1,25,889	13·80	100·00	67·52
2. Kalyan .. .. .	1,12,648	2,47,250	3,59,898	18	4	26,705	2,34,158	2,60,863	23·71	94·71	72·48
3. Bassein .. .. .	1,28,363	37,651	1,66,014	32	3	84,107	37,651	1,21,758	65·50	100·00	73·34
4. Bhivandi .. .. .	1,15,070	47,630	1,62,700	23	1	22,565	47,630	70,195	19·61	100·00	43·76
5. Karjat* .. .. .	44,261	13,589	57,850	4	3	3,760	13,589	17,349	8·49	100·00	29·99
6. Panvel* .. .. .	89,738	18,130	1,07,868	21	1	23,606	18,130	41,736	26·31	100·00	38·69
7. Uran .. .. .	46,233	10,299	56,462	11	1	18,349	10,229	28,578	59·69	100·00	50·60
8. Khalapur* ... .. .	32,144	....	32,144	4	....	4,052	....	4,052	12·61	....	12·61
9. Region excluding Greater Bombay ..	6,38,717	44,90,668	11,29,385	119	16	1,83,144	4,77,576	6,60,720	28·58	97·33	58·41
Greater Bombay .. .. .	....	41,52,056	41,52,056	....	1	....	41,52,056	41,52,056	....	100·00	100·00
Region including Greater Bombay ..	6,38,717	46,42,724	52,81,441	119	17	1,71,144	46,29,632	48,12,776	28·58	99·70	91·12

*Note.*—Only those areas in the Talukas that fall within the Region are covered.

*Source.*—Bureau of Economics and Statistics Bombay, M. S. State Electricity Board, Bombay.

TABLE NO. 7.3

*Recreation Grounds with restrictions if any (Areas are in acres) in Greater Bombay*

Ward	According to Study Group				According to Development Plan.			
	Public have full Access	Public have limited Access	Public have no Access	Total	Public have full Access	Public have limited Access	Public have no Access	Total
1	2	3	4	5	6	7	8	9
A ..	132.36	20.15	16.98	169.49	138.77	22.57	22.03	183.37
B ..	3.71	....	....	3.71	4.41	0.826	....	5.236
C ..	3.36	20.68	....	24.04	5.689	22.93	0.12	287.39
D ..	42.62	58.94	2.24	103.80	48.94	52.25	11.14	13.33
E ..	74.08	2.57	....	76.65	73.329	6.548	13.16	98.037
F ..	32.16	28.59	35.04	95.79	52.39	40.336	14.27	109.905
G ..	48.98	195.23	29.49	273.70	39.61	260.300	14.07	260.98
<b>Total ..</b>	<b>337.27</b>	<b>326.16</b>	<b>83.75</b>	<b>747.18</b>	<b>363.138</b>	<b>355.759</b>	<b>74.79</b>	<b>793.687</b>
H ..	....	....	....	....	32.133	....	12.449	44.582
K ..	....	....	....	....	9.12	....	25.19	34.31
L ..	....	....	....	....	3.45	....	1.25	4.70
M ..	....	....	....	....	20.62	....	86.81	107.43
N ..	....	....	....	....	42.48	....	4.23	4.71
P ..	....	....	....	....	502.40	....	4.4	506.80
R ..	....	....	....	....	5,111.50	....	3.5	5,115.00
T ..	....	....	....	....	12.984	....	....	12.984
<b>Total ..</b>	<b>....</b>	<b>....</b>	<b>....</b>	<b>....</b>	<b>5,734.687</b>	<b>....</b>	<b>137.829</b>	<b>5,872.516</b>

*Source.—Study Group of Bombay, Development Plan of Bombay.*

TABLE NO. 7·4

*Educational Facilities in the Bombay-Panvel-Khopoli Region during 1963-64*

Item	Thana Taluka	Kalyan Taluka	Bassein Taluka	Bhivandi Taluka	Karjat Taluka	Panvel Taluka	Uran Taluka	Khalapur Taluka	Region excluding Greater Bombay	Greater Bombay	Region including Greater Bombay
1	2	3	4	5	6	7	8	9	10	11	12
<i>Primary Education</i>											
No. of schools .. ..	118	282	116	160	123	133	47	71	1,050	1,373	2,423
No. of pupils .. ..	27,557	56,075	26,179	12,828	11,397	16,260	9,749	7,200	1,67,235	5,51,834	7,19,069
Teachers .. ..	614	1,215	610	306	293	446	247	199	3,930	15,927	19,857
No. of pupils per teacher ..	44·88	43·98	42·59	41·92	38·89	36·23	35·42	36·25	42·06	34·65	36·21
No. of schools per thousand population.	6·34	7·83	6·99	9·88	14·13	11·56	8·39	12·67	8·82	3·31	4·54
<i>Secondary Education</i>											
No. of schools .. ..	21	39	417	9	4	7	4	3	104	550	654
No. of pupils .. ..	10,356	18,018	7,969	2,548	1,410	1,658	1,059	488	3,506	2,95,263	3,38,769
Teachers .. ..	364	670	296	100	51	67	46	32	1,626	11,505	13,131
No. of pupils per teacher ..	28·45	26·89	30·16	25·48	27·07	24·74	23·02	15·25	26·70	25·66	25·79
Ratio of Secondary enrolment to primary enrolment.	0·40	0·32	0·30	0·20	0·12	0·10	0·11	0·68	0·26	0·64	0·47
No. of schools per lakh of population.	11·26	10·83	10·24	5·53	6·86	7·72	7·08	11·15	9·38	13·24	12·16
<i>Higher Education</i>											
No. of colleges .. ..	.....	1	1	.....	.....	.....	.....	.....	2	44	46
No. of pupils .. ..	.....	N.A.	N.A.	.....	.....	.....	.....	.....	N.A.	47,162	.....

Source :—(i) Parishad Education Officers of Thana and Kolaba Districts.

(ii) Statistical epitom, 1963-64.

\*Complete Talukas are covered.

TABLE No. 7.5

*Total requirement of floor area under school buildings and area of playgrounds in different years in Greater Bombay*

Ward	Total students population according to study group rent	1964	According to Bombay Development Plan (Est. 1981)	Total space recorded in sq. yds.			Existing area in sq. yds.	Deficit		
				According to study group report	1964	According to Bombay Development Plan Estimate 1981		According to study group report	1964	Bombay Development Plan Estimate 1981
1	2	2-A	3	4	5	6	7	8	9	10
A	11,962	....	44,000	1,43,544	....	77,668	5,369	1,38,175	....	72,299
B	11,879	....	34,195	1,42,548	....	31,438	14,501	1 28,047	....	16,937
C	16,372	....	36,890	1,96,464	....	53,466	3,068	1 93,396	....	50,398
D & E	39,567	....	1,07,786	4,74,804	....	1,03,194	30,198	4 44-606	....	1 32,996
F	33,372	....	82,500	4,00,464	....	1,33,862	28,641	3,71,823	....	1,05,221
G	14,417	....	77,000	1,73,004	....	1,30,178	23,184	1,49,820	....	1,26,994
Total ..	1,27,569	3,26,267	3,72,371	15,30,828	39,15,204	5,89,806	1,04,961	14,25,867	38,10,243	4,84,845
E ..	21,745	....	62,700	5,00,135	....	1,62,972	27,297	4,72,838	....	1,35,675
K ..	11,417	....	79,200	2,62,591	....	2,04,525	36,638	2,25,953	....	1,67,887
L ..	1,942	....	49,500	44,666	....	1,39,782	1,597	43,069	....	1,38,185
M ..	3,600	....	56,100	82,800	....	1,60,119	12,992	69,979	....	1,47,197
N ..	5,160	....	65,670	1,18,680	....	1,87,221	2,807	1,15,873	....	1,84,414
P ..	9,749	....	57,430	2,24,227	....	1,46,607	17,327	2,06,900	....	1,29,280
R ..	8,328	....	37,950	1,91,544	....	....	1,568	1,89,476	....	1,99,886
T ..	2,272	....	20,460	52,256	....	53,655	2,003	50,253	....	5,76,552
Total ..	64,213	5,20,615	4,29,000	14,76,899	1,19,74,145	11,56,335	1,02,159	13,74,740	1,18,71,986	10,54,176

\*Space required is calculated @ of 2 sq. yds per pupil for school building and 10 sq. yds for play ground in the island and 3.5 sq. yds. per pupil for school building and 20 sq. yds. for play ground in the suburbs and extended suburbs. Figures for (a) are taken from Bombay Development Plan for Greater Bombay Table XXXVI.



TABLE No. 7·6

*Public Health facilities in the Region outside Greater Bombay during 1960*  
*Public Health (1960)*

Item	No. of Hospital	No. of Dispensaries	No. of Rural Health Centres	No. of Doctors	No. of Beds
(1)	(2)	(3)	(4)	(5)	(6)
					Unit
Thana ..	1	2	Not available	10	104
Bassein ..	....	1	....	2	6
Bhivandi ..	....	2	....	4	4
Kalyan ..	6	3	1	Not available	225
*Panvel ..	....	2	4	Do.	2
*Karjat ..	1	1	3	Do.	6
*Khalapur ..	....	1	3	Do.	3
Uran ..	....	2	....	Do.	4

Source.— District Census Hand Book, 1961.

\*Full Talukas are considered.

TABLE NO. 7.7

*Talukawise Number of Births and Deaths during 1963 in Bombay- Panvel-Khopoli region.*

Item	Thana	Kalyan	Bhivandi	Bassein	Panvel*	Uran	Karjat*	Khalapur*	Total Region Excluding Gr. Bombay
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1. Births ..	5,290	9,827	3,935	3,596	3,361	1,880	1,362	1,372	30,623
2. Deaths ..	1,816	2,894	1,323	1,046	1,549	913	670	831	11,042
3. Infant Deaths ..	365	517	270	148	247	167	154	148	2,016

*Source.*—Mamlatdars of the Talukas.

\*Full Talukas are covered.

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TABLE NO. 8.1

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TABLE  
Census Houses and the uses

District/Taluka	Total Rural Urban	Total No. of Census Houses	Census Houses vacant at the time of house listing	Dwelling	Shop-cum-Dwellings	Workshop cum Dwellings	Hotels Sarfas Dharmashalas Tourist home and Inspection houses
1	2	3	4	5	6	7	8
	Total ..	45,493	2,417	35,299	470	79	36
Thana	.. Rural ..	17,702	1,342		134	8	11
	Urban ..	27,791	1,075		336	71	25
	Total ..	88,584	4,391		727	259	40
Kalyan	.. Rural ..	31,384	1,850		427	74	13
	Urban ..	57,200	2,541		400	185	27
	Total ..	37,291	1,895		421	344	23
Bhivandi	.. Rural ..	25,652	1,273		275	92	10
	Urban ..	11,639	622		146	252	13
	Total ..	34,916	2,627		436	156	22
Bassein	.. Rural ..	26,435	1,836		262	117	10
	Urban ..	8,481	791		174	39	12
	Total ..	28,554	1,022		286	88	41
Panvel	.. Rural ..	23,624	762		205	50	22
	Urban ..	4,930	260		81	38	19
	Total ..	13,758	1,316	9,761	113	26	12
Uran	.. Rural ..	10,435	813	7,802	92	9	8
	Urban ..	3,323	503	1,959	21	17	4
	Total ..	23,108	2,035	15,502	248	212	24
Karjat*	.. Rural ..	20,704	672	14,963	236	211	21
	Urban ..	2,404	1,363	539	12	1	3
	Total ..	13,656	401	9,725	213	109	21
Khalapur*	.. Rural ..	13,656	401	9,725	213	109	21
	Urban ..	..	..	..	..	..	..
	Total ..	2,85,360	16,104	2,14,755	2,914	1,273	219
Total for the Region	.. Rural ..	1,69,592	8,949	1,27,477	1,744	670	116
	Urban ..	1,15,768	7,155	87,278	1,170	603	103
	Total ..	9,29,085	22,376	7,11,728	12,985	5,658	1,854
Greater Bombay	.. Rural ..	..	..	..	..	..	..
	Urban ..	9,29,085	22,376	7,11,728	12,985	5,658	1,854

\*All the villages in the talukas are considered.

Source.—District Census Hand Book.

No. 8.1

*to which they are put*

Shop excluding eating houses	Business Houses and Offices	Factories Workshops and workshade	Schools and other educational Institutions including Training Classes chocking and Shop Classes	Restaurants Sweetmeat shops and Eating Places	Places of Entertainment and Community gathering (Panchayat ghar)	Public Health and Medical Institutions Hospitals, Health Centres Doctors, Clinics, Dispensaries etc.	Others
9	10	11	12	13	14	15	16
977	398	525	156	206	421	160	4,349
187	110	105	71	74	212	27	2,672
790	288	420	85	132	209	133	1,677
3,552	536	1,480	384	468	767	254	5,760
255	93	150	141	52	346	24	3,169
3,297	443	1,330	243	416	421	230	2,591
497	368	1,562	204	98	399	48	3,494
164	74	86	159	19	315	23	2,909
333	294	1,476	45	79	84	25	585
753	170	240	203	92	350	67	3,881
838	105	137	149	59	260	34	3,302
415	65	103	54	33	90	33	579
354	134	206	153	48	558	45	4,974
120	50	59	128	15	484	12	4,448
234	84	147	25	33	74	33	526
209	87	123	64	30	263	75	1,739
66	35	30	50	11	220	3	1,296
143	52	93	14	19	43	72	443
296	97	178	130	49	430	36	3,871
266	78	167	128	41	418	30	3,473
30	19	11	2	8	12	6	398
62	70	93	92	34	323	16	2,497
62	70	93	92	34	323	16	2,497
..	..	..	..	..	..	..	..
6,700	1,850	4,407	1,386	1,025	3,511	641	30,565
1,458	615	827	918	305	2,578	169	23,766
5,242	1,245	3,580	468	720	933	472	6,799
43,275	19,852	20,456	2,745	5,443	4,016	3,998	74,699
..	..	..	..	..	..	..	..
43,275	19,852	20,456	2,745	5,443	4,016	3,998	74,699

TABLE NO. 8.2 (a)

Distribution of 1,000 House-holds Living in census Houses Used wholly or partly as Dwellings by Predominant Material of wall. (Based on 20 per cent Sample.)

Raluka		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	10	11
Thana	.. Total	303	17	1	61	498	40	37	39	4
	.. Rural	456	1	0	134	286	27	80	16	N
	.. Urban	219	26	2	20	615	47	14	51	6
Kalyan	.. Total	235	47	6	21	572	35	25	55	4
	.. Rural	558	24	6	31	253	16	48	62	2
	.. Urban	51	60	6	15	755	46	11	51	5
Bassein	.. Total	517	81	3	14	344	10	12	16	3
	.. Rural	590	100	3	14	257	7	12	13	4
	.. Urban	261	15	1	12	650	18	13	28	2
Bhivandi	.. Total	684	8	N	6	278	3	3	14	4
	.. Rural	802	2	N	7	168	2	3	14	2
	.. Urban	389	24	1	2	555	4	4	13	8
Panvel*	.. Total	637	2	3	25	319	1	3	10	0
	.. Rural	746	2	3	25	212	1	4	7	0
	.. Urban	87	3	4	21	862	....	....	23	0
Karjat	.. Total	728	N	0	9	174	16	29	43	1
	.. Rural	753	N	0	9	180	5	8	44	1
	.. Urban	35	0	0	0	17	328	603	17	0
Uran	.. Total	284	2	56	39	520	9	24	64	2
	.. Rural	343	1	70	37	437	10	24	76	2
	.. Urban	32	7	0	46	871	5	24	12	3
Khalapur*	.. Total	738	1	1	2	235	8	11	4	0
	.. Rural	738	1	1	2	235	8	11	4	0
	.. Urban	....	....	....	....	....	....	....	....	....
Greater Bombay	.. Total	65	37	13	N	591	130	10	144	10
	.. Rural	....	....	....	....	....	....	....	....	....
	.. Urban	65	37	13	116	591	130	10	144	10

Source.—Population Census, 1961.

Note—Complete Talukas are covered

TABLE NO. 8.2 (b)

*Distribution of 1,000 Households in Census Houses Used wholly or partly as Dwellings by Predominant Material of Roof. (Based on 20 per cent sample).*

Taluka		Grass leaves, reeds, 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
1	2	3	4	5	6	7	8	9
Thana	.. Total	145	558	111	18	1	95	72
	Rural..	294	623	65	5	N	4	9
	Urban	62	522	137	25	2	145	107
Kalyan	.. Total	162	573	76	73	N	98	18
	Rural..	387	479	31	20	0	51	32
	Urban	33	626	102	104	1	125	9
Bassein	.. Total	225	721	16	4	1	17	16
	Rural..	258	722	5	4	0	9	2
	Urban	112	717	53	5	3	46	64
Bhivandi	.. Total	328	614	25	3	1	6	23
	Rural..	419	519	10	1	1	3	17
	Urban	97	780	63	7	1	15	37
Panvel	.. Total	487	491	16	3	0	2	1
	Rural..	578	413	8	0	0	1	0
	Urban	21	890	55	20	0	10	4
Karjat	.. Total	672	237	68	6	1	6	10
	Rural..	697	244	38	6	N	5	10
	Urban	0	43	914	0	9	34	0
Uran	.. Total	393	590	8	4	N	4	1
	Rural..	450	544	3	0	0	2	1
	Urban	153	784	29	22	2	10	0
Khalapur	.. Total	660	227	108	2	0	3	0
	Rural..	660	227	108	2	0	3	0
	Urban	....	..	....	..	..	..	..
Greater Bombay	Total	73	336	115	27	69	362	18
	Rural..	....	..	....	..	....	..	..
	Urban	73	336	115	27	69	362	18

*Note.*—Complete Talukas are covered.

N=Negligible.

*Source.*—Population Census, 1961

TABLE NO. 8.3

*Ward-wise slums in Bombay (City Limits) in 1956-57*

Ward	No. of slums.	Area in Sq. Yds.	Area in Acres	No. of Buildings	No. of Residential Buildings.	No. of Non-Residential Buildings.	No. of Families of	No. of Families of Industrial workers	Population in persons.	Minimum density of Population in Slums.	Average density of Population in Slums.
1	2	3	4	5	6	7	8	9	10	11	12
A	7	99,182	20.60	8,525	458	67	4,181	441	22,109	652	1,073
B	20	1,11,015	22.60	447	367	30	5,761	1,093	26,785	442	1,175
C	24	4,38,498	90.50	2,062	1,651	411	19,268	704	85,273	417	942
D	27	3,74,294	77.00	1,000	872	128	10,972	1,459	48,677	294	632
E	24	6,06,637	125.70	1,914	1,613	301	18,618	7,161	1,16,425	444	926
F	18	4,45,351	91.80	840+ 935 huts.	711+ 935 huts.	129	8,218	5,037	40,225	100	438
G	24	21,70,555	448.60	2,163+ 3,303 huts.	1,919+ 3,303 huts.	244	16,433	7,163	76,381	93	172
Total	144	42,45,532	877.00	8,951+ 4,238 huts.	7,591+ 4,238 huts.	1,360	83,451	23,068	4,15,875	....	....

Source :—Report on the Survey of old Buildings in Bombay City.



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TABLE NO. 8.4

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TABLE

*Sample Households classified by Number of Members and*

Taluka	No. of Household	No. of Persons	No. of Rooms	Households with no regular rooms	
				No.	Persons
1	2	3	4	5	6
Thana .. ..	7,282	35,462	11,551	69	298
Kalyan .. ..	14,530	70,745	23,774	67	217
Bhivandi .. ..	5,823	31,411	8,917	39	128
Bassein .. ..	5,917	33,032	9,432	8	34
*Panvel .. ..	4,272	23,214	7,559	18	91
Uran .. ..	2,161	11,120	3,820	12	76
*Karjat .. ..	3,343	17,360	5,418	16	54
*Khalapur .. ..	2,069	10,910	3,121	20	60
Region Excluding Greater Bombay .. ..	45,397	2,33,254	73,592	249	958
Greater Bombay .. ..	1,48,659	7,83,733	2,06,667	3,591	15,373

\*Full Talukas are considered.  
Source.—Population Census, 1961.

No. 8.4

*No. of Rooms occupied (Based on 20 percent sample)*

Households with One Room.		Households with Two Rooms		Households with Three Rooms		Households with Four Rooms		Households with Five or More Rooms	
No.	Persons	No.	Persons	No.	Persons	No.	Persons	No.	Persons
7	8	9	10	11	12	13	14	15	16
4,260	18,054	2,151	11,375	501	3,198	171	1,265	130	1,272
7,739	33,682	5,013	25,558	1,170	7,087	351	2,518	190	1,683
3,523	16,814	1,741	9,884	332	2,672	110	966	78	947
3,789	17,987	1,374	8,579	397	3,068	209	1,869	140	1,495
2,001	9,185	1,629	9,546	368	2,303	151	1,167	105	922
943	4,103	913	5,032	181	1,188	80	500	32	221
1,700	7,666	1,327	7,537	206	1,363	56	395	38	345
1,183	5,309	715	4,342	110	896	31	192	10	101
25,138	1,12,780	14,863	81,853	3,265	21,775	1,159	8,872	723	6,986
1,07,512	5,34,525	24,488	1,39,612	7,488	47,569	3,141	21,920	2,439	24,734

TABLE NO. 8.5

*Deficiencies with respect to the future estimated population for 1981 with the adopted standard of 1/2 acre per 1,000 population for the City and 1 acre per 1,000 population for suburbs on neighbourhood basis and 3 acres per 1,000 population in large parks for the Suburbs.*

	Ward		Population 1981	Existing open spaces in acres	Require- ments	Deficit	Surplus
	1		2	3	4	5	6
<b>City—</b>							
A	..	..	4,00,000	180.00	200.00	20.00	
B		..	1,45,000	9.80	72.50	62.7	
C	..	..	2,40,000	89.36	120.00	80.64	
D	..	..	5,25,000	202.59	262.50	59.91	
E	..	..	4,00,000	104.4	200.00	95.6	
F	..	..	7,50,000	161.27	375.00	213.73	
G	..	..	7,00,000	313.61	350.00	36.39	
<b>Total</b>			31,60,000	1,011.03	1,580.00	568.97	
<b>Suburbs (on neighbourhood basis)—</b>							
H	..	..	5,70,000	55.788	570.00	514.212	
K	..	..	7,20,000	46.36	720.00	673.64	
L	..	..	4,50,000	11.625	450.00	348.375	
M	..	..	5,10,000	29.66	510.00	480.34	
N	..	..	5,97,000	22.61	597.00	574.39	
P	..	..	5,22,000	10.28	522.00	511.72	
R	..	..	3,45,000	11.00	345.00	334.00	
T	..	..	1,86,000	13.25	186.00	172.75	
<b>Total</b>			39,00,000	200.573	3,900.00	3,699.427	
<b>Suburbs (in larger parks)—</b>							
H	..	..	5,70,000	....	1,710.00	1,710.00	
K	..	..	7,20,000	....	2,160.00	2,160.00	
L	..	..	4,50,000	....	1,350.00	1,350.00	
M	..	..	5,10,000	81.20	1,530.00	1,448.80	
N	..	..	5,97,000	26.00	1,791.00	1,726.00	
P	..	..	5,22,000	500.00	1,566.00	1,056.00	
R	..	..	3,45,000	5,110.00	1,035.00	....	4,075
T	..	..	1,86,000	....	558.00	558.00	
<b>Total</b>			39,00,000	5,717.20	11,700.00	5,982.80	

*Note.*—The existing open spaces in the statement above are as shown on the Development Plan.  
*Source.*—Development Plan for Greater Bombay 1964.

TABLE NO. 8.6

Finances of Municipalities.....in 1961-62 (in Rs.)

Head	Thana District							Kolaba				
	Bassein	Khalapur	Thana	Bhivandi	Dombivali	Ambarnath	Ulhasnagar	Matheran	Panvel	Uran	Greater Bombay	
1	2	3	4	5	6	7	8	9	10	11	12	
<i>Income</i> .. ..	2,74,652	13,13,512	21,97,419	19,76,104	3,24,036	1,29,288	6,67,171	2,32,934	4,96,489	1,53,312	18,99,32,000	
I. (a) Tax duties and Fees	2,32,918	11,00,186	19,35,322	19,00,337	3,05,375	1,06,143	....	1,52,620	4,03,002	1,15,155	17,72,34,000	
(b) Houses of Land	35,655	3,81,620	7,77,511	2,10,745	1,43,970	6,82,267	....	....	1,32,339	41,769	6,84,89,000	
(c) Octroi ..	91,943	4,12,308	3,13,078	15,37,786	....	....	....	5,820	1,98,199	52,516	1,34,39,000	
(d) Other taxes	40,188	2,62,668	7,10,715	1,02,346	1,22,905	22,315	....	1,45,369	53,923	10,667	7,17,47,000	
(e) Other Fees	65,092	43,590	1,34,018	49,520	28,500	15,561	....	8,731	18,591	10,213	2,35,59,000	
Other Income	41,734	2,13,326	2,62,097	75,607	28,661	23,145	6,67,171	70,314	93,487	35,157	1,26,98,000	
<i>Expenditure</i> .. ..	2,73,071	12,73,346	22,20,585	4,91,821	3,22,290	99,330	5,70,512	1,97,178	4,60,177	1,44,537	5,11,96,000	
A. Current	2,73,071	12,59,701	17,81,241	9,12,061	2,25,949	70,075	5,70,512	1,85,540	3,91,493	1,30,178	18,66,45,000	
B. Capital	....	13,645	4,39,344	4,20,240	96,341	29,255	....	11,638	68,684	14,389	23,65,91,000	
(a) Hospital	....	....	....	....	....	....	....	....	....	....	51,33,000	
(b) Roads	....	....	3,92,387	1,71,219	64,147	24,360	....	3,217	30,479	....	1,40,11,000	
(c) Water-supply	....	....	....	....	....	....	....	3,203	915,365	....	1,08,45,000	
(d) Other Sources	....	13,645	....	1,50,874	32,194	4,895	....	5,218	22,840	2,276	2,12,07,000	
Investment	....	....	46,957	85,000	....	....	....	....	....	12,113	18,53,95,000	
Population	22,598	73,482	1,01,107	47,630	18,407	34,509	1,07,760	2,842	18,130	10,229	41,52,056	
Per Capita on Income	12.13	17.88	21.73	41.40	17.58	3.75	6.18	87.88	27.35	14.69	45.74	
Per Capita Income from Taxes and Duties.	10.31	14.91	19.16	45.30	16.58	3.07	Nil.	57.22	22.22	11.25	43.16	
Per Capita. Capita Expenditure	Nil.	0.19	4.03	8.83	5.23	0.84	Nil.	4.50	3.48	1.40	53.98	

Source.—Municipal Year Book, 1962,

## STATISTICAL TABLES FOR POONA METROPOLITAN REGION

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TABLE NO. 9.1

*Rainfall, No. of Rainy days and Temperature at some Stations in Poona Region  
(year 1962, 1963)*

Serial No.	Centre	1962				1963			
		Rainfall M. Ms.	Rainy days	Temperature		Rainfall M. Ms.	Rainy days	Temperature	
				Maxi- mum	Mini- mum			Maxi- mum	Mini- mum
1	2	3	4	5	6	7	8	9	10
1	Poona	.. 715.6	53	42 c	6.6 c	726.5	50	40.2 c	8.2 c
2	Paud	.. 1,540.5	78	N.A.	N.A.	1,620.8	75	N.A.	N.A.

Source—District Statistical Officer, Poona.

TABLE NO. 10.1

*Number of inhabited villages and Towns according to Population Groups in Poona Region (1961-Census)*

Population groups	Rural			Urban			
	No. of villages	Total population of villages in Col. 2	Percentage of population covered in Col. 2	No. of towns	Total population of towns in Col. 5	Percentage of population covered by towns in Col. 5	
	2	3	4	5	6	7	
Below 200	..	3	254	0.15	..	....	
200 to 499	..	11	4,158	2.46	..	....	
500 to 999	..	34	26,154	15.49	..	....	
1,000 to 1,999	..	34	47,632	28.21	..	....	
2,000 to 4,999	..	18	51,889	30.73	..	....	
3,000 to 9,999	..	6	38,766	22.96	4	26,694	
10,000 to 19,999	..	..	....	....	1	15,611	
20,000 to 49,999	..	..	....	....	..	....	
50,000 and above	..	..	....	....	3	7,21,896	
Total	..	106	1,68,853	100.00	8	7,64,201	100.00

Source.—District Statistical Office, Poona

TABLE No. 10.2

*Extent of Migration in Poona City according to place of Birth*

Serial No.	Place of Birth				Persons migrated in 000's	Percentage of total migrants	
1	2				3	4	
I	Within Poona District .. .. .				80	25.9	
II	<i>Outside the District but within the State—</i>						
	1.	Ahmednagar	..	..	..	23	....
	2.	Jalgaon	..	..	..	5	
	3.	Kolaba	..	..	..	8	
	4.	Kolhapur	..	..	..	7	
	5.	Nasik	..	..	..	8	
	6.	Ratnagiri	..	..	..	15	
	7.	Sangli	..	..	..	6	
	8.	Satara	..	..	..	24	
	9.	Sholapur	..	..	..	17	
	10.	Thana	..	..	..	5	
	11.	Greater Bombay	..	..	..	12	
					Sub-Total ..	130	42.1
III	<i>Outside State—</i>						
	1.	Andhra Pradesh	..	..	..	10	
	2.	Gujrath	..	..	..	10	....
	3.	Kerala	..	..	..	3	
	4.	Madhya Pradesh	..	..	..	4	
	5.	Madras	..	..	..	6	
	6.	Mysore	..	..	..	23	
	7.	Punjab	..	..	..	2	
	8.	Rajasthan	..	..	..	5	
	9.	Uttar Pradesh	..	..	..	4	
					Sub Total ..	67	21.7
IV	Pakistan .. .. .				9	2.9	
V	Other Places .. .. .				23	7.4	
					Total Migrants ..	309	100.0



TABLE NO. 10.3

*Growth of Population according to Rural/Urban and Sex during the decade (1951-61)  
in Poona Region*

Rural and Urban	1951			1961			Percentage growth during decade		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
1	2	3	4	5	6	7	8	9	10
Rural ..	72,828	68,031	1,40,859	86,910	81,943	1,68,853	11.9	12.0	11.9
Urban ..	3,25,605	2,74,204	5,99,810	4,08,691	3,55,510	7,64,201	12.6	13.0	12.7
Total ..	3,98,434	3,42,235	7,40,669	4,59,601	4,37,453	9,33,054	12.4	12.8	12.6

Source.—District Statistical Office, Poona.

TABLE NO. 10.4

*Working Population and Non-Working Population according to Occupation in  
Poona Region (1961-Census)*

Occupation Group	Male		Female		Total	
	Population ÷ Total	Population ÷ Total	Population ÷ Total	Population ÷ Total	Population ÷ Total	Population ÷ Total
1	2	3	4	5	6	7
<b>I. Working population—</b>						
1. Cultivator including agricultural Labour.	32,585	6.57	30,269	6.91	62,845	6.74
2. Manufacturing .. ..	57,096	11.52	4,202	0.96	61,298	6.57
3. Household Industries .. ..	7,556	1.52	5,067	1.16	22,623	1.35
4. Mining and Quarrying .. ..	4,055	0.82	791	0.18	4,846	0.51
5. Construction .. ..	10,003	2.02	1,518	0.35	11,526	1.24
6. Trade and Commerce .. ..	32,704	6.60	3,921	.89	36,625	3.93
7. Transport and Communication (including storage etc.).	21,742	4.38	2,264	0.52	24,006	2.57
8. Other Services .. ..	80,846	16.32	17,489	3.99	98,335	10.54
<b>I.—Total Working Population .. ..</b>	<b>2,46,592</b>	<b>49.75</b>	<b>65,512</b>	<b>14.96</b>	<b>3,12,104</b>	<b>33.45</b>
<b>II.—Non-working population .. ..</b>	<b>3,49,009</b>	<b>50.25</b>	<b>3,71,941</b>	<b>85.04</b>	<b>6,20,950</b>	<b>66.55</b>
<b>Total .. ..</b>	<b>4,95,601</b>	<b>100.00</b>	<b>4,37,453</b>	<b>100.00</b>	<b>9,33,054</b>	<b>100.00</b>

Source.—District Statistical Office, Poona.

TABLE NO. 10.5

*Estimated Population in Poona Region according to Rural/Urban and Sex for the period 1961-1991*

Rural/Urban	Sex	1961	1966	1971	1976	1981	1986	1991
1	2	3	4	5	6	7	8	9
Rural	Male	869	995	1,096	1,207	1,334	1,471	1,603
	Female	820	943	1,036	1,134	1,285	1,450	1,579
	Total	1,689	1,941	2,132	2,341	2,619	2,921	3,182
Poona City including Cantonment of Poona and Kirkee.	Male	3,859	4,526	5,154	5,823	6,589	7,406	8,322
	Female	3,360	3,709	4,210	4,755	5,383	6,050	6,798
	Total	7,219	8,235	9,364	10,578	11,972	13,456	15,120
(*) Rest of Urban Areas	Male	228	288	315	376	425	498	591
	Female	195	228	269	323	364	428	507
	Total	423	516	584	699	789	926	1,098
Poona Region	Male	4,956	5,809	6,565	7,406	8,348	9,375	10,516
	Female	4,375	4,883	5,515	6,212	7,032	7,928	8,884
	Total	9,331	10,692	12,080	13,618	15,380	17,303	19,400

(\*) Rest of Urban Areas includes Bhosari, Dapodi, Chinchawad, Pimpri and Lohagaon.

TABLE NO. 10.6

*Table showing the Density per Sq. Mile in Rural and Urban areas in Poona Region (year 1961 Census)*

Y 4422-23a

Serial No.	Name of Taluka	Population of the Area			Area of Region			Density per square mile		
		Rural	Urban	Total	Rural	Urban	Total	Rural	Urban	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1	Haveli .. ..	1,47,989	42,305	1,90,294	371.3	30.3	401.6	398.6	1,396.2	473.8
2	Mulshi .. ..	20,242	Nil.	20,242	69.0	.....	69.0	293.4	.....	293.4
3	Poona City .. ..	622	7,21,896	7,22,518	3.6	64.2	67.8	172.8	11,244.0	10,656.6
	Total Region ..	1,68,853	7,64,201	9,33,054	443.9	94.5	538.4	380.3	8,086.7	1,733.0

TABLE No. 10.7

## Poona Region

*List of villages and towns in Poona Region*

## 1. Towns :

## I. Haveli Taluka :

- (1) Bhosari.
- (2) Chinchawad.
- (3) Dapodi.
- (4) Lohogaon.
- (5) Pimpri.

## II. Poona City Taluka :

- (1) Kirkee Cantonment.
- (2) Poona Cantonment.
- (3) Poona City.

## 2. Villages :

## I. Taluka Haveli :

- (1) Akurdi.
- (2) Alandi Chorachi.
- (3) Ambegaon Bk.
- (4) Ambegaon Kh.
- (5) Ashtapur.
- (6) Bakori.
- (7) Balewadi.
- (8) Banere.
- (9) Bhawadi.
- (10) Bhiyari.
- (11) Bhaurapur.
- (12) Bopkhel.
- (13) Burkegaon.
- (14) Charholi Bk.
- (15) Chikhali.
- (16) Dehu.
- (17) Dhankaodi.
- (18) Dhanori.
- (19) Dhayari.
- (20) Dighi.
- (21) Dongargaon.
- (22) Dudulgaon.
- (23) Fulgaon.
- (24) Fursungi.
- (25) Hadapsar.
- (26) Hingne Kh.
- (27) Hingangaon.
- (28) Kala.
- (29) Katraj.
- (30) Kesnand.
- (31) Khamgaon Tek.
- (32) Kharadi.
- (33) Kivle.
- (34) Kolawdi.
- (35) Kondhave Bk.
- (36) Kondhave Kh.
- (37) Kondhave Dhavade.
- (38) Kopre.
- (39) Koregaon Mul.
- (40) Kothrud.
- (41) Lohogaon.
- (42) Loni-kand.
- (43) Loni-Kalbhor.
- (44) Mohmadwadi.
- (45) Manjri Bk.
- (46) Manjri Kh.
- (47) Moshi.

- (48) Naigaon.
- (49) Nanded.
- (50) Narhe.
- (51) Nhavi Sandas.
- (52) Nigadi.
- (53) Nirgudi.
- (54) Pashan.
- (55) Perne.
- (56) Pimpri Sandas.
- (57) Pimpale Gurao.
- (58) Pimpale Nilakh.
- (59) Pimpale, Saudagar
- (60) Pisoli.
- (61) Rahetni.
- (62) Ravet.
- (63) Sangvi Haveli.
- (64) Sangvi Sandas.
- (65) Sashte.
- (66) Shindaone.
- (67) Shivane.
- (68) Shirasaodi.
- (69) Talavade.
- (70) Tarade.
- (71) Theur.
- (72) Tulapur.
- (73) Undri.
- (74) Urali-Kanchan.
- (75) Urali-Devachi.
- (76) Wadgaon Bk.
- (77) Wadgaon Kh.
- (78) Wadgaon Sheri.
- (79) Wadgaon Shinde.
- (80) Wadhu Kh.
- (81) Wadaki.
- (82) Walti.
- (83) Wade Bolai.
- (84) Wagholi.
- (85) Warje.

## II. Taluka-Mulshi :

- (86) Badhan Bk.
- (87) Baudhan Kh.
- (88) Bhugaon.
- (89) Bhukum.
- (90) Chande.
- (91) Hinjawadi.
- (92) Jambe.
- (93) Kasarsai.
- (94) Lawale.
- (95) Mahalunge.
- (96) Man.
- (97) Marunje.
- (98) Malkhed.
- (99) Nande.
- (100) Nire.
- (101) Poonaoale.
- (102) Sus.
- (103) Tathaura.
- (104) Thergaon.
- (105) Wakad.

## III. Poona City Taluka :

- (106) Mundhava.

TABLE NO. 12.1

*No. of factories and factory workers in Poona Region  
(Years 1956, 1961, 1963)*

Group of Centres along	No. of factories			No. of factory workers		
	1956	1961	1963	1956	1961	1963
1. Poona .. .. .	343	437	575	15,783	21,060	26,085
2. Dapodi-Chinchawad .. .. .	8	26	45	954	3,341	6,666
3. Poona-Ahmednagar .. .. .	Nil	..	..	..	..	..
4. Poona-Sholapur .. .. .	24	47	34	379	2,848	2,380
5. Poona-Bangalore .. .. .	..	..	..	..	..	..
6. Other scattered centres .. .. .	1	8	13	89	138	467
<b>Total .. .. .</b>	<b>376</b>	<b>518</b>	<b>667</b>	<b>17,205</b>	<b>27,387</b>	<b>35,598</b>

*Source.*—Bureau of Economics and Statistics, Bombay.

TABLE NO. 12.2

*Statement showing No. of workers daily engaged in some sample cottage industry establishments surveyed in Poona Region*

Centre	Type of Industry	No. of sample Establishments	No. of workers daily engaged
1	2	3	4
I. Poona .. .. .	1. Bamboo work .. .. .	41	115
	2. Brick .. .. .	2	3
	3. Carpentry .. .. .	185	353
	4. Cobbler .. .. .	60	101
	5. Dying Printing .. .. .	9	20
	6. Gur Industries .. .. .	7	27
	7. Leather working .. .. .	52	112
	8. Metal work .. .. .	124	410
	9. Other Potteries .. .. .	40	99
	10. Paddy rice mills .. .. .	7	27
	11. Printing .. .. .	3	13
	12. Smithy .. .. .	53	143
	13. Soap Industry .. .. .	3	31
	14. Weaving .. .. .	21	76
II. Loni Kalbhor .. .. .	1. Bamboo work .. .. .	7	27
	2. Brick and tiles .. .. .	1	4
	3. Carpentry .. .. .	8	21
	4. Gur Industry .. .. .	6	33
	5. Other Potteries .. .. .	6	15
	6. Oil Pressing .. .. .	1	6
	7. Shoe making .. .. .	3	7
	8. Smithy .. .. .	6	18
III. Hadapsar .. .. .	1. Bamboo work .. .. .	6	19
	2. Brick .. .. .	4	18
	3. Carpentry .. .. .	4	12
	4. Gur .. .. .	8	24
	5. Leather working .. .. .	5	6
	6. Smithy .. .. .	4	8

*Source.*—Bureau of Economics and Statistics, Bombay

TABLE NO. 12.3

*Table showing the details of the number of Trains running in Poona Region with passenger carrying capacity (Year 1964)*

Selected Station to and from	Distance from Poona (in Kms.)	Season tickets issued	Passenger carrying capacity of each train
(1)	(2)	(3)	(4)
Poona-Kirkee .. .. .	9	479	Average 100 for Class-III per train.
Poona-Dapodi .. .. .	9	234	
Poona-Pimpri .. .. .	16	966	
Poona-Chinchawad .. .. .	21	1,177	
Poona-Hadapsar-Loni .. .. .	8	20	
Total .. .. .	....	2,876	

Railway Timings :From Poona to Lonavala :  
6-00, 6-35, 6-50, 8-30.

From Lonavala to Poona :  
15-55 (Chinchawad).  
16-30 (Dehu Road).  
16-15 ; 18-00 ; 20-45.

*Source.*—Pilot Study of "Poona Labour Market" by Director of Employment and Training, Maharashtra State.

TABLE No. 12.4

*Table showing Commuting Facilities provided by Poona Municipal Transport (Year 1964)*

From Station to Work Site	Distance (in Kms.)	No. of persons using bus daily
(1)	(2)	(3)
Poona Municipal Corporation Building to Kirkee/Dapodi/Chinchawad	20	2,400
Poona Station to Yervada .. .. .	8	960
Poona to Manjri/Loni .. .. .	17	630
Cantonment to Mundhawa .. .. .	9	240
Deccan Gymkhana to Kothrud .. .. .	5	210
Total .. .. .	....	4,440

*Source.*—"Pilot Study of Poona Labour Market" by Director of Employment and Training, Maharashtra State.

TABLE NO. 12.5

*Integrated picture of the communiting pattern and the various facilities used by workers in the selected establishments in Poona Region (Year 1964)*

Mode of Conveyance								
		Kirkee Dapodi	Pimpri Chinchwad	Kothrud	Hadapsar	Yeravada Mundhwa	Poona City	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	
Train .. ..	380	2,882	..	..	..	8	3,270	
Public Bus .. ..	600	..	50	258	156	145	1,209	
Cycle .. ..	3,673	642	302	1,476	1,048	2,380	9,521	
Industry's Buses .. ..	750	2,028	..	872	200	..	3,850	
Self-propelled .. ..	110	187	15	33	34	24	403	
Pedestrian .. ..	2,044	296	118	137	375	200	3,170	
Total .. ..	7,557	6,035	485	2,776	1,813	2,757	21,423	

*Source.*—"Pilot Study of Poona Labour Market" by Director of Employment and Training, Maharashtra State.

TABLE No. 12.6

*Residence to Work-Place, pattern of workers in Poona Region in selected Establishments  
(Year 1964)*

Serial No.	Item	Residence to work site						Total Number	Per cent
		Kirkee/Dapodi	Pimpri/Chinchwad	Kothrud	Hadapsar	Yeravada/Mundhwa	Poona City		
1	2	3	4	5	6	7	8	9	10
1	Poona City	5,426	3,908	463	2,361	799	2,544	15,501	72.9
2	Pimpri	71.9	64.8	04.4	85.1	44.1	92.2	1,273	5.9
3	Kirkee	106	1,160	.....	.....	3	4	1,226	5.9
4	Yeravada	1.3	19.2	.....	.....	0.1	0.1	.....	.....
5	Chinchawad	953	31	.....	.....	240	2	613	2.6
6	Dapodi	12.7	0.5	.....	.....	13.4	0.1	.....	.....
7	Hadapsar	78	5	.....	.....	467	63	560	2.5
8	Dehu-Road	1.0	.....	.....	.....	25.0	2.2	.....	.....
9	Mundhawa	155	404	.....	.....	1	.....	313	1.5
10	Loni	2.1	6.7	.....	.....	.....	.....	287	1.4
11	Aundh	294	17	.....	.....	2	.....	261	1.2
12	Alandi	3.9	0.3	.....	.....	0.1	.....	221	1.0
13	Talegaon	2	12	7	200	62	4	192	0.8
14	Dighi	.....	0.1	1.4	7.2	3.5	0.1	110	0.5
15	Manjri	1	260	.....	.....	.....	.....	77	0.3
16	Others	.....	4.2	.....	.....	.....	.....	64	0.3
17	Total Numbers	1	.....	.....	.....	220	.....	51	0.2
18	Percentage	94	.....	10	.....	.....	6	30	0.1
		10.2	.....	2.1	.....	.....	0.2	.....	.....
		.....	.....	.....	.....	2	75	.....	.....
		.....	.....	.....	.....	0.1	3.0	.....	.....
		.....	63	.....	.....	.....	1	.....	.....
		.....	1.4	.....	.....	.....	.....	.....	.....
		1	.....	.....	.....	.....	50	.....	.....
		.....	.....	.....	.....	.....	1.8	.....	.....
		.....	.....	.....	30	.....	.....	30	0.1
		.....	.....	.....	1.0	.....	.....	.....	.....
		446	175	85	.....	10	8	664	2.9
		5.9	2.8	1.1	.....	0.6	0.3	.....	.....
		7,557	6,035	485	2,776	1,813	2,757	21,423	.....
		100.0	100.0	100.0	100.0	100.0	100.0	.....	100.0

Source.—“ Pilot Study of Poona Labour Market, Director of Employment and Training, Maharashtra State.



TABLE NO. 12.7

*Distribution of Employees by occupation in selected establishments in Poona Region (Year 1964)*

Occupational Division	Prof. and Tech.	Admn. Exc.	Clerical	Transport	Craftsmen	Un-skilled	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Foodstuffs .. ..	3	16	24	10	104	95	252
Textiles Cotton .. ..	33	3	109	2	1,249	434	1,830
Paper and Paper products ..	2	1	15	11	117	91	237
Rubber and Rubber products ..	25	60	106	..	928	276	1,395
Chemical and Chemical products.	446	181	441	7	1,026	1,852	3,953
Basic Metals and its products ..	27	18	21	..	226	268	560
Electric Machinery and Electric Equipment Mfg.	976	442	1,096	57	4,645	2,900	10,116
Transport Equipment and Machinery Mfg.	167	96	305	21	1,762	729	3,080
<b>Total ..</b>	<b>1,679</b>	<b>817</b>	<b>2,117</b>	<b>108</b>	<b>10,057</b>	<b>6,645</b>	<b>21,423</b>
<b>Percentage ..</b>	<b>7.8</b>	<b>3.8</b>	<b>9.9</b>	<b>0.5</b>	<b>47.0</b>	<b>31.0</b>	<b>100.0</b>

*Source.*—Pilot study of "Poona Labour Market" by Director of Employment and Training, Maharashtra State.

TABLE NO. 12.8

*Salary/Wages structure in Poona Labour Market Area as revealed in Selected Establishments in Poona Region (Year 1964)*

Serial No.	Description of Industry	Sector	Salary offered to (in Broad N. C. O.'s)												
			Prof. and Tech. Min.	Prof. and Tech. Max.	Adm. and Exec.		Clerical		Transport		Craftsmen		All Unskilled		
					Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
			(Rs.)	(Rs.)	(Rs.)	(Rs.)	(Rs.)	(Rs.)	(Rs.)	(Rs.)	(Rs.)	(Rs.)	(Rs.)	(Rs.)	(Rs.)
1	Mfg. of food stuffs .. ..	Private	300	500	700	2,000	50	200	54	92	60	105	30	95	
2	Mfg. of Paper and Paper Production ..	Do.	225	590	150	350	52	170	52	95	90	115	30	85	
3	Mfg. of Textile (Cotton) .. ..	Do.	500	2,500	500	2,200	40	320	55	90	120	450	90	180	
4	Mfg. of Rubber Production .. ..	Do.	700	2,000	250	700	125	300	55	100	120	200	90	105	
5	Mfg. of Medicine and Chemicals .. ..	Public	600	2,250	250	850	80	500	60	90	85	275	35	60	
6	Mfg. of Basic Metals and their products ..	Private	250	500	250	500	125	250	55	85	120	210	90	110	
7	Mfg. of Machinery .. ..	Do.	200	3,000	120	850	100	600	55	170	85	250	45	160	
8	Mfg. of Transport equipment .. ..	Public	250	500	290	850	100	355	60	185	100	220	45	135	
9	Mfg. of Vehicle and Accessories .. ..	Private	400	3,000	350	2,000	110	350	55	110	150	340	60	120	

*Note.*—This table indicates normal Pay ranges occupation-wise but does not include Dearness Allowance and incentives offered in different establishments.

*Source.*—Pilot Study of "Poona Labour Market" by Director of Employment and Training, Maharashtra State.

TABLE NO. 13.1

*No. of villages having Weekly Market|Cattle Market|Retail shops within a village in Poona Region*

Taluka	No. of villages and Towns in the Poona Region	No. of villages having within itself		
		A Weekly Market	A Cattle Market	Retail Shops
(1)	(2)	(3)	(4)	(5)
1. Poon City .. .. .	4	3	1	4
2. Haveli .. .. .	90	9	2	45
3. Mulshi .. .. .	20	....	....	5
Poona Region ..	114	12	3	54

Source.—District Statistical Office, Poona.

TABLE NO. 13.2

*Land Utilisation according to its classification in the Poona Region (Year 1963-64)*

Serial No.	Classification of Land	Area in Acres	Percentage to Total
(1)	(2)	(3)	(4)
1	Geographical Area .. .. .	3,85,546	100.00
2	Forest .. .. .	40,994	10.63
3	Barren and uncultivable land .. .. .	31,455	8.16
4	Land put to Non-Agricultural uses .. .. .	7,660	1.99
5	Cultivable waste .. .. .	586	0.15
6	Land under trees groves .. .. .	Nil.	....
7	Permanent pastures .. .. .	8,750	2.27
8	Current fallows .. .. .	6,142	1.59
9	Other fallows .. .. .	45,520	11.81
10	Net sown Area .. .. .	2,44,439	63.40
11	Area sown more than once .. .. .	15,922	4.13
12	Gross Cropped Area .. .. .	2,60,361	67.53
13	Net Irrigated Area .. .. .	14,079	6.01*
14	Gross Irrigated Area .. .. .	16,979	6.52**

(\*) This percentage is with the Net cropped area.

(\*\*)(\*) This percentage is with the Gross cropped area.

Source.—Mamlatdars, Haveli, Poona City and Mulshi Talukas.

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TABLE NO. 13.3

*Area under Principal Crops in Poona Region (Year 1963-64)*

Serial No.	Principal Crops	Gross sown Area	Percentage to Gross sown Area
(1)	(2)	(3)	(4)
<i>Cereals</i>			
1	Paddy	6,035	2.3
2	Wheat	1,786	0.7
3	Kharif Jowar	28,046	10.7
4	Rabi Jowar	64,788	24.9
5	Total Jowar	92,834	35.6
6	Other Cereals	58,766	22.6
7	Total Cereals	1,59,421	61.2
	All Pulses	15,517	6.0
	Sugarcane	2,905	1.1
I,	Total Food Crops	1,83,666	70.5
	Groundnut	2,434	0.9
	Other Oil Seeds	2,753	1.0
	Total Oil Seeds	5,187	1.9
	Cotton	380	0.1
	Total Fibre Crop	759	0.2
	Total non-food Crops	76,695	29.5
	Gross Cropped Area	2,60,311	100.0

Source.—Mamlatdars, Haveli, Poona City and Mulshi Talukas.

TABLE NO. 13.4

*Census of the Livestock and Agricultural Implements in Poona Region (1961-Census)*

Serial No.	Item.	Year 1961
<b>I LIVESTOCK—</b>		
<i>Cattle—</i>		
<i>Male—</i>		
1.	Working	30,005
2.	Breeding	502
3.	Young Stock	8,793
<i>Female—</i>		
1.	In milk	9,661
2.	Dry	18,652
3.	Young Stock	8,882
		Total—Cattle ... 76,495
<i>Buffaloes—</i>		
<i>Male—</i>		
1.	Breeding	188
<i>Females—</i>		
1.	In milk	16,547
2.	Dry	9,867
3.	Young Stock	
		Total—Buffaloes ... 32,659
		Total—Poultry ... 1,30,102
		Total—Sheep ... 13,253
<b>II AGRICULTURAL IMPLEMENT—</b>		
<i>Ploughs—</i>		
1.	Wooden	3,336
2.	Iron	3,511
<i>Pumps sets with</i>		
1.	Oil Engine	514
2.	Electrical Engine	13
	Tractors	17
	Oil Ghanies	4
	Carts	4,554

Source.—District Statistical Office, Poona.

TABLE NO. 14.1

*No. of villages without Medical Facilities and without adequate drinking Water facilities in Poona Region*

Taluka				No. of villages and Towns in the Region	Number of villages without	
					Medical Facilities	Adequate drinking water supply
1				2	3	4
1. Haveli	...	...	...	90	79	42
2. Mulshi	...	...	...	20	18	5
3. Poona City	...	...	..	4	1	2
Poona Region ..				114	98	49

Source.—Zilla Parishad, Poona.

TABLE NO. 14.2

*No. of Towns and villages Electrified and percentage of Population benefitted thereby in Poona Region (Year 1964-65).*

Item				No. of Villages/Towns in the Region	No. of Towns/Villages Electrified	Population covered by Towns/Villages	Percentage of Population having benefits of Electricity
Rural	..	..	..	106	37	90,811	53.78
Urban	..	..	..	8	8	7,64,201	100.00
Total				114	45	8,55,012	91.64

Source.—District Statistical Office, Poona.

TABLE NO. 14.3

*Educational facilities in Poona Region. (Year 1964-65)*

Type of Education			No. of Schools/Institutions	Pupils	No. of Teachers	Teacher/Pupil ratio	Ratio of secondary enrolment to primary enrolment	Ratio of higher enrolment to secondary enrolment
Primary	..	..	455	1,26,554	3,404	37.17	....	....
Secondary	...	..	85	70,584	2,304	30.63	1.79	....
Higher	...	..	37	18,899	N.A.	N.A.	....	3.73

Source.—Zilla Parishad, Poona, Director of Education, Poona.

TABLE NO. 14.4

*Medical and Public Health facilities in Poona Region*

Area	No. of Hospitals (excluding T. B., Leprosy and Mental)	No. of Dis- pensaries	No. of Beds	No. of Doctors	No. of Nurses	Beds per 10,000 popu- lation	Doctors per 1,00,000 popu- lation
1	2	3	4	5	6	7	8
<i>Urban area—</i>							
1. Poona Municipal ..	15	26	1,964	213	567	33.8	3.5
2. Poona Cantonment ..	1	..	76	25	14	11.5	4.2
3. Kirkee Cantonment ..	1	..	75	4	9	12.8	0.7
4. Pimpri ..	1	..	22	2	2	14.0	1.3
Urban Total ..	18	26	2,137	244	592	27.9	3.2
<i>Rural area—</i>							
1. Dehu ..	..	1-PHU	6	1	2	14.9	2.6
2. Nergudi ..	..	1-PHC	2	1	2	48.9	24.5
3. Man ..	..	1-PHC	..	1	2	..	5.0
4. Marunji ..	..	1-Disp.	..	1	1	..	14.0
5. Wagholi ..	..	SMPAU	..	1	..	..	2.0
6. Wade-Bolhai ..	..	SMPAU	3	1	1	21.1	7.0
7. Urali-Kanchan ..	..	SMPAU	2	1	1	4.0	2.0
8. Theur ..	..	SMPAU	4	1	2	12.5	3.1
9. Pursungi ..	..	SMPAU	2	1	2	3.2	1.6
10. Moshi ..	..	SMPAU	1	1	2	3.4	3.4
11. Alandi-Chorchi ..	..	SMPAU	..	1	..	..	4.8
Rural Total ..	..	3-PHC 1-DISP 7-SMPAU	20	11	15	1.18	0.6
Poona Regional Total ..	18	27-DISP 3-PHC 7-SMPAU	2,157	255	607	23.11	2.7

Note.—PHU—Public Health Unit, PHC—Public Health Centre, SMPAU—Subsidised Medical Practitioner in Ayurved.

Source—Bureau of Economics and Statistics, Bombay.

TABLE NO. 15.1

*Traffic densities of vehicular traffic on main roads passing through Poona Region  
(Year 1965).*

Roads	No of incoming vehicles of type					No of outgoing vehicles of type				
	Cars, Taxis etc	Buses	Trucks	Slow moving	Total Taxis etc.	Cars	Buses	Trucks	Slow moving	Total
1	2	3	4	5	6	7	8	9	10	11
Bangalore-Poona ..	550	157	335	80	1022	604	140	477	82	1303
Bombay-Poona ..	1095	366	891	99	2451	856	239	800	66	2011
Poona-N. D. ..	320	70	228	52	700	303	112	203	250	868
Poona-Sholapur ..	355	168	384	181	1088	295	102	359	181	937
Poona-Ahmednagar.	249	104	238	78	769	236	107	261	73	677
All Roads ..	2569	865	2076	520	6030	2294	760	2100	652	5796

Source.—Regional Transport Survey Unit, Finance Department, Bombay-8.

TABLE NO. 15.2

*Table showing No. of villages not connected by roads in Poona Region. (year 1961)*

Serial No.	Name of Taluka	No. of villages and Towns in the Region	No. of villages and Towns in column 3 not connected by road
(1)	(2)	(3)	(4)
1	Haveli .. .. .	90	43
2	Poona City .. .	4	....
3	Mulshi .. .. .	20	17
Poona Region ..		114	60

*Source.*—District Census Hand Book, 1961.

TABLE NO. 15.3

*No. of villages and Towns having Post Offices/Telegraph Offices/Railway Station/Bus stops in Poona Region (Year 1965)*

Taluka	No. of villages and Towns in the Region	No. of villages and towns having within itself.			
		A Post Office	A Telegraph Office	A Railway Station	A Bus Stop
1	2	3	4	5	6
1. Poona City ..	4	4	3	2	4
2. Haveli ..	90	22	1	8	26
3. Mulshi ..	20	....	....	....	2
	114	26	4	10	32

*Source.*—District Statistical Office, Poona.

TABLE NO. 15.4

*Inward and Outward traffic of goods and Passengers at important Railway Stations in Poona (Year 1960)*

Serial No.	Important Railway Stations	Inward Traffic Goods (Quintals)	Outward Traffic goods (Quintals)	Outward traffic Passengers (No.)
(1)	(2)	(3)	(4)	(5)
1	Poona Central Railway .. .. .	45,61,649	3,56,758	23,51,383
2	Poona Southern Railway .. .	N. A.	N. A.	4,08,065
3	Shivajinagar .. .. .	8,563	2,667	6,16,826
4	Kirkee .. .. .	5,96,042	3,46,673	4,30,686
5	Pimpri .. .. .	33,652	135	4,48,157
6	Chinchawad .. .. .	82,311	36,825	2,06,356
7	Dehuroad .. .. .	2,09,227	2,50,027	4,81,728
8	Fursungi .. .. .	N.A.	N.A.	11,622
9	Alandi Chorachi .. .. .	N.A.	N.A.	10,956

*Source.*—Central and Southern Railways.



TABLE NO. 15.5

*No. of passengers carried per day on different routes by Poona Municipal Transport  
(Year 1964)*

Serial No.	Routes	Average No. of Buses in Service.	No. of Passengers carried per day	Daily average miles per bus in service
(1)	(2)	(3)	(4)	(5)
1	All Routes within Poona City .. .. .	88	1,13,088	83
2.	Poona-Chinchawad .. .. .	17	23,695	127
3.	Poona-Loni .. .. .	6	7,301	143
4.	Poona-Lohogaon .. .. .	8	1,02,07	122
5.	Poona-Mundhava .. .. .	2	2,269	95
6.	Poona-Kothrud Hingne .. .. .	3	3,739	113
7.	Poona-Aundh .. .. .	8	8,682	129
8.	Poona-Pashan .. .. .	2	2,309	142

*Source.*—Revenue and Profitability analysis for September 1964, Poona Municipal Transport, Poona.