

# FIRST FIVE YEAR PLAN



*Issued by*

THE PUBLICATIONS DIVISION

MINISTRY OF INFORMATION & BROADCASTING

GOVERNMENT OF INDIA

DELHI-8.

**January 1953**

**Price**

**Rs. 2/8**

**Sh. 4/6**

**60 cents**

## NATIONAL DEVELOPMENT COUNCIL

Having considered the First Five Year Plan, the National Development Council places on record its general approval and acceptance of the objectives, priorities and programmes embodied in the Plan; affirms the common resolve of the Governments of all the States of the Union of India, in co-operation with the Central Government and with one another and with the support of their people, to carry out the Plan with determination and achieve its targets; and calls upon all citizens of India to work for the fulfilment of the National Plan.

*Jawaharlal Nehru*

November 9, 1952.

Chairman

## FOREWORD

The First Five Year Plan as presented by the Planning Commission to the Government of India runs to over one thousand pages. This abridged and slightly simplified version of it contains the substance of the original and also preserves, as far as possible, its form and language.



## Pictographs and Maps

	Page
National Income and Aggregate Consumption (Graph) ..	16
Central and State Government Plans (Pictograph) ..	40-41
Targets of the Five Year Plan—Agriculture, Irrigation and Power (Pictograph) ..	98-99
Targets of the Five Year Plan—Industry (Pictograph)	184-185
Targets of the Five Year Plan—Transport, Education, Health, etc. (Pictograph)	216-217
Development Expenditure of the State and Central Governments ..	265
Community Projects, Development Blocks, etc. (Map) ..	266
Major Irrigation and Power Projects (Map) ..	267

# CONTENTS

## PART ONE

### THE PLAN

	<b>Pages</b>
I. Objectives .. .. .	11
II. Priorities and Techniques in Planning ..	20
III. Assessment of Resources .. .. .	26
IV. The Five Year Plan in Outline .. .. .	35

## PART TWO

### ADMINISTRATION & PUBLIC CO-OPERATION

V. Introduction .. .. .	53
VI. Reform of Public Administration .. .. .	55
VII. Administration of District Development Programmes	64
VIII. Public Co-operation in National Development ..	70

## PART THREE

### PROGRAMMES OF DEVELOPMENT

IX. State of the Agricultural Economy .. .. .	77
X. Development of the Co-operative Movement ..	80
XI. Food Policy for the Plan .. .. .	84
XII. Land Policy .. .. .	88
XIII. The Agricultural Worker .. .. .	95
XIV. Programme for Agriculture .. .. .	98
XV. Community Development and Rural Extension ..	102
XVI. Finance for Agriculture .. .. .	106
XVII. Agricultural Marketing .. .. .	110
XVIII. Some Problems of Agricultural Development ..	114
XIX. Animal Husbandry .. .. .	122

	Pages
XX. Dairying and Horticulture .. ..	126
XXI. Forests .. ..	129
XXII. Soil Conservation .. ..	134
XXIII. Fisheries .. ..	138
XXIV. Village Industries .. ..	142
XXV. Small Industries and Handicrafts .. ..	146
XXVI. Irrigation and Power .. ..	150
XXVII. Development of Mineral Resources .. ..	164
XXVIII. Scientific and Industrial Research .. ..	174
XXIX. Industrial Development and Policy .. ..	177
XXX. Foreign Trade and Commercial Policy .. ..	199
XXXI. Transport and Communications .. ..	202
XXXII. Health .. ..	208
XXXIII. Education .. ..	220
XXXIV. Labour .. ..	227
XXXV. Housing .. ..	233
XXXVI. Social Welfare .. ..	239
XXXVII. Welfare of Backward Classes .. ..	243
XXXVIII. Rehabilitation of Displaced Persons .. ..	246
XXXIX. Employment .. ..	251

**PART I**  
**THE PLAN**

## CHAPTER I

### OBJECTIVES

The central objective of planning in India is to raise the standard of living of the people and to open to them opportunities for a richer and more varied life. Planning must, therefore, aim both at utilising more effectively the resources, human and material, available to the community so as to obtain from them a larger output of goods and services, and also at reducing inequalities of income, wealth and opportunity. A programme aiming only at raising output might result in most of the increased wealth flowing into the hands of a few, leaving the mass of the people in their present state of poverty. It would thus fail to achieve wider social objectives. On the other hand, a mere redistribution of existing wealth would impair the well-being of certain sections of society without sensibly improving the lot of the rest. Our programme must, therefore, be two-fold, leading at once to increased productivity and reduction of inequalities. These two sides of the programme act and react on one another and it is a matter of delicate judgement to decide to what extent an immediate advance in one direction is compatible with advance in the other. While in the initial stages the accent of endeavour must be on increased production—because without this no advance is possible at all—our planning even in the initial stages should not be confined to stimulating economic activity within the existing social and economic framework. That framework itself has to be remoulded so as to secure progressively for all members of the community full employment, education, security against sickness and other disabilities and adequate income.

#### INCREASED PRODUCTION

2. Something may be said in general terms about both these aspects of planning. Let us take increased production first. India is still a very poor country inasmuch as the income per capita is exceedingly low. No doubt during the last twenty or thirty years there has been considerable industrial development. Large towns and cities have grown up. Transport and communications have developed extensively. The isolation of the village has been broken and the average citizen lives in an environment significantly different from the one in which he lived and worked fifty or sixty years ago. But industrialism and the use of modern techniques have affected only limited segments of the economy. Agriculture is still the mainstay of life for about 70 per cent of the population, and productivity in this vital sector is exceedingly low. The size of holdings has progressively diminished; the old cottage and small-scale industries have been decaying, and the rural population which constitutes about 83 per cent of the total suffers from chronic under-employment and low incomes. The growth of alternative occupations either in the rural

areas or in the towns has not been on a scale which could absorb the growing population. For the community as a whole, the level of income per capita is as low as one-twelfth or one-fifteenth of that in industrially advanced countries.

3. To raise the productivity of a poor country is a difficult task and the hardest part of it is to give the initial impulse for an upward movement. The reasons for this can be explained in quite simple terms. The level of production and the material well-being of a community depend mainly upon the stock of capital at its disposal—the amount of land per capita and of productive equipment in the shape of factories, locomotives, machinery, irrigation facilities, power installations and communications. An increase in the stock of capital—accompanied by knowledge of how to use it to best advantage—will lead to an increase in the community's output of goods and services and so to a rise in its material well-being. This may be put shortly in the phrase that 'the key to economic progress is capital formation.' But it is not easy for a poor community to increase its production by making substantial additions to its capital equipment. On a vaster scale and with infinitely more complexity its position is similar to that of a poor cultivator trying to wrest more from his holding by sinking a well. He can sink the well, if at all, only by working hard and tightening his belt. Much of the manual labour he and his family may be able to supply; but the well gear he will have to purchase from others. In order to save money for this purchase he will have to cut down his consumption and if his standard of living is already low, this will be difficult and may be well-nigh impossible. Thus, if he is to sink the well at all, he will have to work hard and endure privation. In essence, though on a larger scale, capital formation by a poor country presents similar difficulties. India has considerable resources of water, power and minerals still to be harnessed and exploited; there is land which can be reclaimed, and industries which can be developed. But to do this it will be necessary to divert to these capital works resources which would otherwise be utilised by the community for current consumption. In some degree it may be possible to bring into use idle resources of manpower at present unemployed or under-employed; but for many purposes the unemployed manpower will not possess the requisite technical skill; nor will it always be possible to mobilise it at the required places. Hence some restraint on current consumption is necessary if the country is to find the resources to build up the capital equipment required for sustained increase of production. Thus we must expect both hard work and even some privation in the initial stages of development. No planning can dispel the need for toil and sacrifice, and the need will be greatest in the first few years. But the task, once well begun, becomes progressively easier. Once the vicious circle of low output, low savings and low capital formation is broken, the economy can start on an upward course. As production and hence income per capita increase, larger amounts can be saved without excessive privation and more and more additions can be made to the stock of capital equipment so that output and the income per capita begin to rise rapidly.

4. Two questions naturally suggest themselves. What increase in per capita income can we reasonably hope to attain over a given period of years? And what rate of capital formation will be required to achieve it? No precise answers can be given to these questions, but some rough judgements can be offered on the basis of certain assumptions and in the light of the experience of other countries in the early stages of their development.

5. First, however, let it be made clear that we are confronted with a definite problem of choice—a choice between, on the one hand, a small or moderate increase in the standard of living in the near future but with only relatively small additions to capital equipment and hence no marked and sustained upward trend; and, on the other, a substantially higher standard of living for the next generation at the cost of continued austerity and privation to the present generation in the interests of rapid capital formation. It is evident that some sort of a balance has to be struck between the two, but it is assumed that the weight will incline towards the second alternative.

6. Two other important assumptions must be mentioned. The first relates to the growth of population. We may assume for the present that this will continue at the rate of about 1.25 per cent per annum, which is the rate disclosed for the last decennial period. If this assumption is correct, a considerable increase in aggregate national income is required merely to keep pace with the growing population.

7. The second assumption is concerned with the relationship between a unit of investment and the additional output likely to be created thereby. Obviously this varies widely. The effectiveness of an investment in capital equipment depends not merely on its size but on a large number of other variable factors. In one set of circumstances, investment of a given amount will be several times more fruitful than in another. In certain circumstances, through mischance or miscalculation, it may fail to yield any fruitful result at all. There is also variation in the time which investment takes to bear fruit. It is possible to sink a well and draw benefit therefrom within the space of a few months, whereas to build an irrigation barrage and utilise the water so impounded may take several years.

8. In an under-developed country quite small investments in capital equipment may be able to produce quick and significant increases of output. Thus in Japan between 1890 and 1920 agricultural production was increased by 77 per cent mainly through better seeds, manures and insecticides and improved agricultural practices, none of which involved large capital outlays. Though there are climatic and other differences which in the case of India might necessitate somewhat higher initial investments, it should be possible, in view of the present low yields in agriculture, to secure comparable results in this country. The present Plan, with its emphasis on agriculture, makes considerable provision for investment of this character. Then again, the additions to investment that are required can to some

extent come about by more intensive utilisation of man-power, land and existing equipment. Idle man-power can be used for digging canals, repairing tanks, constructing roads and bunds, improving sanitation and imparting elementary education. There is a great need to mobilise local resources for local works of this kind and for this also some provision has been made in the Plan. On the other hand, large investments are also being made in big multi-purpose projects. These cannot come to full fruition in the shape of increased output for several years, though over a period they will be highly productive, directly as well as indirectly.

9. Taking all factors into consideration, it has been assumed in the calculations which follow that during the first ten years starting from 1951 the ratio of investment to output will be as 3 to 1 and will then gradually rise to about 4 to 1 and continue at that rate from 1970 onwards. It has also been assumed that on an average the increased output will materialise about two years from the date of investment.

10. So much for basic assumptions. Now let us turn to the experience of other countries. In the United States over the thirty years, 1870-1900, capital formation at the rate of 12 per cent to 15 per cent of the national income raised the flow of goods to consumers about three-fold. Similarly in Japan over the thirty years, 1900-1930, the national income increased three times with new capital formation running at an average rate of about 14 per cent. The U.S.S.R., during the period of the first five year plan, had a target of net investment amounting to 'between a quarter and a third of the national income' which was somewhat lowered during the period of the second five year plan. According to conservative estimates the actual rate of investment for the whole period 1923-38 was of the order of 20 per cent of the national income. With this very high rate of capital formation the national income is believed to have rather more than doubled during the ten year period.

11. In view of these achievements elsewhere, this country should set itself at least to double the per capita national income within the space of about a generation. For a country, which is already densely populated and which has to provide, at least for the next few years, for a steadily rising population, this is an ambitious target, calling for organisation and nation-wide effort such as is normally associated with emergency conditions like war. The rate of saving and capital formation will have to be raised very much above their present level. It is estimated that in 1950-51 saving amounted only to 5 per cent of the national income. This is very low compared with the rates which enabled the U.S.A., Japan, and the U.S.S.R. to achieve the increases of national income mentioned above. Moreover for a population growing at the rate of 1.25 per cent per annum, such a rate of saving is believed to be only just sufficient to keep per capita incomes constant. This is, of course, only a rough generalisation and must not be taken too literally. Nevertheless it serves to explain the relative stagnancy of the Indian economy in terms of per capita income



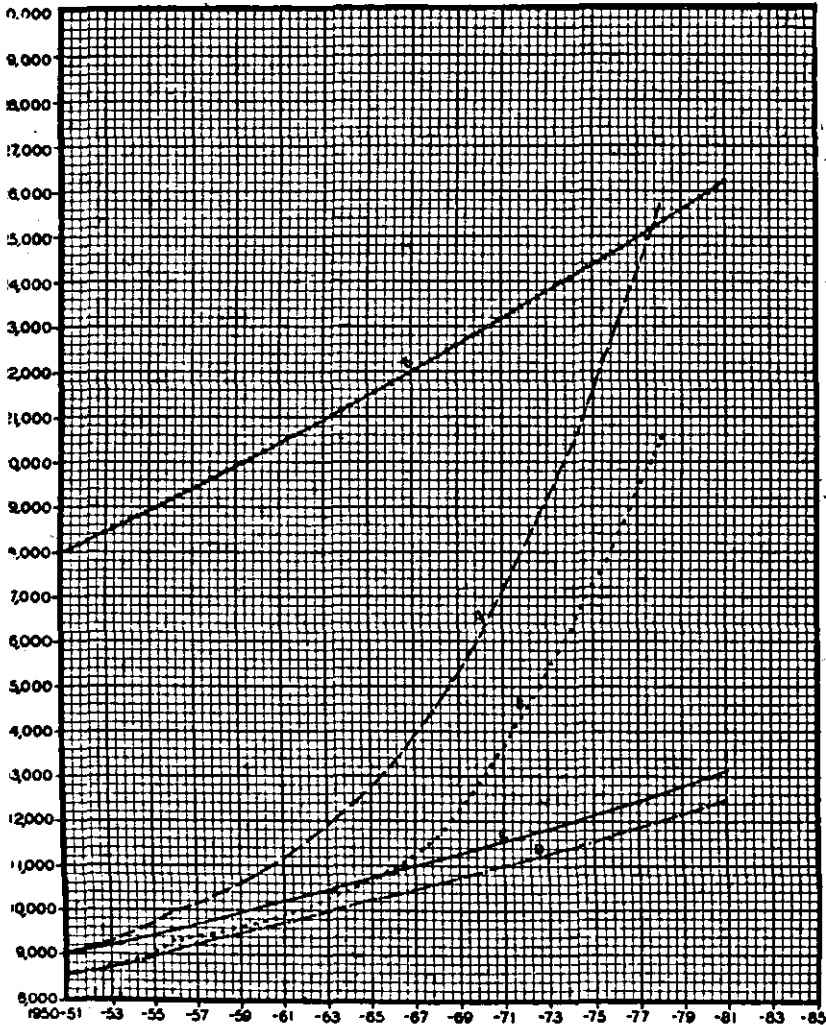
and indicates the scale of effort required in order to attain the target of doubling the per capita income.

12. The Plan envisages that the national income, which was estimated at Rs. 9,000 crore in 1950-51, will have risen to Rs. 10,000 crore by 1955-56, and that during these five years 20 per cent of the additional income annually accruing should be added to investment and capital formation. This would mean that by the end of five years the rate of investment would rise to 6.75 per cent of the national income. In the light of the experience of other countries, this may appear far from adequate and, doubtless, if we were to be governed by purely abstract reasoning as to what is desirable, a greater increase would be proposed. But we have to be guided by what appears to be actually feasible, and it does not seem feasible during the first five years to step up the rate of investment faster without imposing on the people excessive privation and subjecting the whole economy to dangerous strain. Even this modest increase will call for special effort and, as will be shown later, though to achieve it main reliance is placed on domestic saving, some measure of assistance from foreign capital is also looked for. In subsequent periods, however, as increased investment begins to be reflected in increased national income, it will become progressively easier to step up the rate of saving and investment which in turn will lead to a more rapid rise in the national income. Thus if, in every year after 1956-57, fifty per cent of the additional income accruing is saved and re-invested, then by 1967-68 the annual saving would amount to no less than 20 per cent of the aggregate national income—a rate which it would not be necessary to exceed.

13. The accompanying graph illustrates the progress in regard to national income and consumption that could be attained on the basis of the rate of investment suggested in the preceding paragraph. It will be seen that during the period of the present Five Year Plan total national income (line A) and aggregate consumption (line B) are expected to rise only slightly above the levels required to maintain the present per capita income and consumption. In other words during this period the rise in the standard of living is likely to be small. During the next ten years national income would rise about 50 per cent faster, but the rise, though substantial, would still not be spectacular, and, owing to the necessity of saving 50 per cent of the increased income, consumption would still only rise slowly. From about 1965, however, national income would rise at a much accelerated rate so that per capita income would be doubled by 1978. Similarly, consumption would begin to rise steeply from about 1970.

14. At first sight this may not seem a very rosy picture. It may disappoint those who believe (quite wrongly) that rapid and spectacular progress can be made in the initial period of planning. The first five years will inevitably be a period of preparation and painful gathering of resources to support a sustained advance. On the other hand, those who are young men today may expect in middle age to see that a general rise in the standard of living has taken place—a rise not so small as to be scarcely perceptible and a matter of debate but quite marked and indisputable. In the life of a nation one cannot look for more than this.

# NATIONAL INCOME AND AGGREGATE CONSUMPTION



### ASSUMPTIONS

1. NATIONAL INCOME IN 1950-51: RS. 9,000 CRORES.
2. AGGREGATE CONSUMPTION EXPENDITURE IN 1950-51: RS. 8,580 CRORES
3. INCREASE IN NATIONAL INCOME AND AGGREGATE CONSUMPTION EXPENDITURE BY 1955-56: RS. 1,000 CRORES AND RS. 775 CRORES RESPECTIVELY.
4. PROPORTION OF ADDITIONAL INCOME REINVESTED EACH YEAR AFTER 1955-56, 50 PERCENT; CEILING ON INVESTMENT WHEN SAVINGS AS A PROPORTION OF AGGREGATE INCOME REACH 20% (i.e. IN 1968-69)

### NOTATIONS

1. NATIONAL INCOME ON THE ABOVE ASSUMPTIONS ----- A
2. AGGREGATE CONSUMPTION EXPENDITURE ON THE ABOVE ASSUMPTIONS ..... B
3. NATIONAL INCOME REQUIRED TO MAINTAIN PER CAPITA INCOME CONSTANT AT 1950-51 LEVEL \_\_\_\_\_ C
4. AGGREGATE CONSUMPTION EXPENDITURE REQUIRED TO MAINTAIN PER CAPITA CONSUMPTION CONSTANT AT 1950-51 LEVEL ..... D
5. NATIONAL INCOME REQUIRED TO DOUBLE 1950-51 PER CAPITA INCOME ..... E

15. Moreover, the rise may be even greater than we have suggested, if there is a change in the population trend. Such trends cannot be altered quickly, but the pressure of population in India is so great that a reduction in the rate of growth must be regarded as a major desideratum. As already stated, we have assumed that the population will continue to grow at the rate of 1.25 per cent per annum. A reduction to one per cent in the near future would materially assist the raising of standards of living and cannot be regarded as impossible. To some extent the growth of education, especially among women, will tend to bring down the rate of increase ; but positive measures are also required to inculcate the need and techniques of family planning. Recommendations in this regard are made elsewhere.\*

#### REDUCTION IN INEQUALITIES

16. We may pass now from the question of increased production to our other aim of reducing economic inequalities. This aim, it may be remarked, is implicit in the Directive Principles of State Policy enunciated in articles 36 to 51 of the Constitution, more particularly in the specific direction that the operation of the economic system should not result in the concentration of wealth and the means of production in the hands of a few to the common detriment. In this matter, there are risks in trying to go too far and too fast, but there are also risks in standing still and condoning the existence or accentuation of sectional privileges. A middle way has to be sought which, while avoiding a violent overturning of society will, nevertheless, enable the State to promote rapid changes in the social structure. The view is sometimes put forward that great social and economic changes cannot be effected except through class hatred and violence and in the guise of reprisals against those sections of society which are associated in the public mind with the inequalities of the old order. Such methods are far removed from the traditions and ideals of this country. They are also inconsistent with the basic premises of democratic planning, namely that society can develop and adapt itself to changing conditions as an integral whole and that the position occupied by particular classes at a given time can be altered peacefully by democratic methods through these very classes appreciating the need for change and respecting the democratic system.

17. Already with the abolition of zamindari one far-reaching social change has been peacefully carried through. In Chapter 12 suggestions are made for further changes in land tenures, which will have the effect of eliminating all large inequalities in holdings.

18. Inequalities of wealth can also be reduced by fiscal measures. Death duties, which are now an integral part of the system of taxation in advanced countries, are an important equaliser. Over a period of years they can reduce inequalities to an extent that could be achieved straightaway only by the disruption of society. Direct taxation, falling mainly or more heavily on the rich, can also be made to have an increasingly levelling effect ; but here there is need for balancing the advantage of greater equality of incomes against the disad-

---

\*Vide Chapter XXXII.

vantages of a possible fall in private savings and capital formation and general discouragement of productive activities. Taxation of the rich can be stepped up as alternative sources of savings and agencies for capital formation are developed.

19. Taking a long view, one cannot resist the conclusion that in order to secure throughout the whole economy a realignment of productive forces and class relationships, there will inevitably have to be rapid expansion of the economic and social responsibilities of the State. This need not involve complete nationalisation of the means of production and distribution or the elimination of private agencies in agriculture, industry and trade. It does mean, however, a progressive widening of the public sector and progressive enlargement of the State's direction and control of the private sector to meet the needs of a planned economy.

20. In this connection, it is necessary to emphasise, as it is perhaps not generally realised, that the share of the State in the ownership of productive capital assets is already large. Excluding the fields of agriculture, small-scale industry, road transport and residential housing, the book value of capital assets owned by the Central and State Governments amounted to over Rs. 1,200 crore at the end of 1950-51, made up as follows:—

	<i>Rs. crores</i>
Railways	837
Irrigation works (including multi-purpose river valley projects)	230
Communications and Broadcasting	53
Electricity undertakings	49
Industries	44
Civil Aviation	10
Ports	8
Central Tractor Organisation	5
Total:	1,236

To this should be added about Rs. 100 crore representing productive capital assets owned by public institutions, municipalities and other semi-public agencies. As compared with this the value of productive assets in the private sector, again excluding the same fields, was probably not more than about Rs. 1,500 crore, the breakdown of which was roughly as below:—

	<i>Rs. crores</i>
Factory establishments	1,110
Plantation Industries	100
Electricity undertakings	70
Mines	30
Shipping and Aviation	32
Motor transport	130
Total:	1,472

The above estimates are necessarily rough and relate to original values and not to present-day replacement values. But they show

that the State has already been playing a not insignificant part in providing services essential for organised industry and to some extent in industrial development itself.

21. This part, as stated above, must inevitably grow. It has already been laid down in the Industrial Policy Statement of 1948 that in regard to certain industries like coal, iron and steel, ship-building and aircraft-manufacture, the State will be responsible for further development except to the extent that it considers private co-operation necessary, and in some of these industries, e.g., iron and steel and ship-building, the State will be embarking on important new enterprises during the period of the Plan. Over the rest of the industrial field, which is left to private enterprise, the State has considerable powers of regulation and control, and recent experience has shown that major extensions of private enterprise can rarely, in present conditions, be undertaken except with the assistance of the State. The fact is that the concept of private enterprise is undergoing rapid change and the view that it can function only on the basis of unregulated profits is an anachronism. The enlargement of the State's direction and control is a process which will continue and gather speed.

22. It is evident that, with the expansion of the public sector and the growing regulation of the private sector, there will be no place for large inequalities of wealth and income, and it will become increasingly easier to reduce these without danger to economic progress and social stability.

## CHAPTER II

### PRIORITIES AND TECHNIQUES IN PLANNING

#### PRIORITIES

The resources available to the country for development are very small in relation to its needs. As was mentioned in the preceding chapter, the annual savings in 1950-51 amounted to only about five per cent of the national income, that is, to about Rs. 450 crore ; by 1955-56 they could with effort be stepped up to Rs. 675 crore. Great care has, therefore, to be taken in allocating these limited resources. Looking ahead over a long stretch of years, there is no sector of the economy in which a large increase in investment would not be justified. But with a limited horizon of time, the problem assumes a different aspect ; first things have to come first and for the given limited period priorities must be determined, though these will change with the passage of years and the emphasis will shift from sector to sector as development in those taken up initially prepares the ground for development in others.

2. For the immediate five year period, agriculture, including irrigation and power, must have the topmost priority. This emphasis is to some extent indicated by the need to complete projects already in hand. Apart from this, however, it is clear that without a substantial increase in the production of food and of the raw materials needed for industry, it will be impossible to sustain a higher tempo of development in other sectors. Food and raw materials are the wherewithal for further development, and the creation of conditions of sufficiency and even plenitude in respect of them is, therefore, fundamental.

3. The improvement of agriculture will have to come to a very great extent from investment made by the State, and since agriculture is given topmost priority, the investment which the State can itself undertake in industries is correspondingly limited. Progress in this field must depend, at this stage, to a great extent on private effort and investment. The State in this initial period has to concentrate on the provision of basic services like power and transportation. But it also has a special responsibility for developing key industries such as the iron and steel, heavy chemical and heavy electrical industries, which, in the modern world, are the basis of industrial progress. The initial investment required for the development of such enterprises is large and the period of construction fairly long. A beginning in this direction has, therefore, to be made from the very start.

4. To the extent that the initial emphasis has to be on increasing production, the scope for expanding social services is inevitably restricted. And yet it is obvious that no plan can succeed unless

it 'invests' in the improvement of human material. Even from the point of view of increasing production, social services like education, technical training and health, can bring significant returns. There is large scope in this field for direct community effort. Much can, therefore, be accomplished over and above that for which specific financial provision is made. The spread of literacy among the rural people, for example, can be secured by the literates in the community volunteering their services. The improvement of public health is often a matter of imparting elementary knowledge regarding sanitation and hygiene. As regards technical training, it is essential that adequate financial provision be made, since it is vital not only for the process of development itself, but also for correcting the present bias towards a purely literary education, which is responsible for unemployment among the middle classes.

5. In view of the large under-utilised reserves of man-power, schemes for mobilising local labour for local development have to receive high priority. Their contribution to the improvement of living conditions, small though it might appear at first sight, will in aggregate and in terms of cumulative psychological effects be more than proportionate to the initial investment. Programmes of community development based on this principle and aiming at an intensive all-round development in selected areas are of special value from this point of view.

6. Within the general pattern of priorities indicated above, there are of course more detailed patterns varying to some extent from one part of the country to another. Thus within the field of agriculture, irrigation may be of primary importance in some areas, fertilisers in others. In certain regions the improvement of roads may be a pre-condition of the development of agriculture. In the industrial field, the expansion of some industries is in the national interest more urgent than that of others, though it may not always appear so attractive and remunerative to private entrepreneurs. In order to avoid waste of resources on what is unessential or, at the present stage, relatively unhelpful to the national economy, these priorities have to be observed.

### TECHNIQUES

7. How then is the observance of these priorities to be secured? The short answer is, 'By directing the savings of the community into the desired channels in the appropriate amounts.' Some further elaboration is, however, required and this will involve consideration of certain techniques which are an unavoidable feature of economic planning.

8. There are three main sources of savings: savings by private individuals, savings by corporations, and public savings or surpluses in the public sector. Now, whereas the State can determine the manner in which the last class of savings will be invested, it cannot determine absolutely the investment of the savings of private individuals and corporations; it can only influence their investment by

offering facilities and incentives to encourage their flow into certain channels while discouraging or even prohibiting them from being drawn off into others. Fiscal measures and credit and commercial policy can all play a part in providing incentives and discouragements and so in influencing private investment. But since the allocation of savings in the private sector is primarily governed by price relationships—savings flowing into what, in the light of prevailing prices, are deemed to be the most profitable channels—the maintenance of a structure of prices favourable to an allocation of resources in conformity with the priorities and targets defined in the Plan must be a consistent aim of economic policy. This will involve some measure of price control and to make price control effective, physical control of the production, movement and allocation of certain key commodities may be unavoidable.

9. The important role of the savings of individuals and corporations in national development is not perhaps fully appreciated, and it may be thought that they can safely be left to flow freely into whatever channels of investment their owners choose. They form, however, a significant proportion of the total domestic saving—a fact which can easily be overlooked owing to the prominence given in this report and elsewhere to schemes of development to be financed entirely out of public funds. Actually, out of total estimated domestic savings of Rs. 2700 to Rs. 2800 crore during the five year period of the Plan, only about Rs. 1250 crore are expected to be public savings obtained through taxation, loans and surpluses earned on public commercial enterprises. The rest will be savings in the private sector. Public savings, it is hoped, will be supplemented from external sources and by other means which are discussed in the next chapter, so that the total sum available will be of the order of Rs. 2069 crore. It would be desirable to augment public savings and it may be necessary to do so by means of further taxation, though, as explained earlier, such an increase in the volume of savings would involve postponement of increases in the standard of living. But even if public savings are somewhat increased, the proper utilisation of the Rs. 1,400 to Rs. 1,500 crore of savings in the private sector is clearly a matter which should not be neglected. To some extent the desired end can be secured by direct methods, e.g., the control of new capital issues and the licensing of new industrial plants. But there are other methods which also have to be employed or tried out and these must be briefly considered.

#### CONTROL OF CREDIT

10. Effective control of credit is a valuable instrument for regulating investment and business activity, and the Reserve Bank of India, which is a nationalised institution and has wide powers for regulating the credit policy of other banks, may be expected to play its appropriate part in furthering economic development along agreed lines. It is envisaged that its function will not be confined to the regulation of the overall supply of credit, important though this may be in helping to check inflationary pressures likely to be generated by



the large programme of public expenditure envisaged in the Plan. It is probable that the banking system will also be called upon to afford special credit facilities to certain enterprises of high priority and to certain sections of the population which are most in need of them\*. Correspondingly, it may have to be discouraged from extending credit in certain other directions. In other words, the banking system will have to operate more and more with a view to observing the priorities rather than to maximizing the returns on capital.

### STATE TRADING

11. Trade and commerce are important sources of profit and hence of savings, and also fields of investment particularly attractive to the private investor as they offer high, if somewhat speculative, returns. In the development of some countries e.g., the United Kingdom, mercantile profits have been the main source of funds for industrial expansion. In the present state of world trade, these means of accumulating capital are not open to this country to the same degree, and indeed diversion of investment to trade on any considerable scale must in present conditions be regarded as a misdirection of resources and hence to be avoided. There is already a tendency in this country for capital to flow too much into trade in preference to production. On the other hand State trading at the wholesale level in respect of selected commodities could be a potent method of gaining control of the economy at strategic points. The cost of living for the large majority of the people in this country depends on relatively few commodities like food-grains, cloth, sugar, kerosene and salt. Through State trading in these commodities, it would be possible to control basic prices, thus facilitating the desired allocation of resources, and to influence decisively the cost of living. This in turn would permit of a rate of development much higher than could otherwise be safely attempted, for the inflationary pressures of a large development programme would be held in check at the vital points. Public enterprise in the field of distributive trades is, however, likely to raise difficult organisational problems and our knowledge of the mechanism of the present distributive system is inadequate. Many facts have to be ascertained before a decision could be taken to embark on State trading. It does, however, offer a possible way both of augmenting the savings passing into the hands of the State and also of controlling effectively the basic price structure.

12. In this connection it may be observed that if planning is to avoid excessive centralisation and bureaucratic control and, at the same time, to curb the acquisitive instincts of the individual producer or trader working for himself, the encouragement of co-operative enterprise must be given high priority. Particular importance is, therefore, to be attached to the progressive socialisation of agricultural marketing and of processing industries in the rural areas through co-operatives.

---

\*The efforts now being made by the Reserve Bank to extend credit facilities in rural areas may be mentioned in this connection.

## CONTROL OF PRICES

13. Lastly, we come to price controls—a matter of vital importance not only because price relationships are a prime factor in determining private investment, but also because a large development programme very quickly affects prices. In the early stages, the implementation of schemes of development inevitably increases money incomes more rapidly than production. The labourers employed on a big irrigation project are paid large sums in wages long before water from the canals which they dig can reach the land and improve the crops. In a poor country where a large proportion of the population are ill-fed and ill-clad increased money incomes tend at once to step up the demand for food and cloth and other basic consumer goods and so to force up their price. Such price inflation, if not checked, besides causing hardship to sections of the population, who are dependent on fixed incomes, attracts excessive resources to the production of relatively inessential consumer goods; whereas the interests of the community require that consumption should as far as possible be held in check and savings directed towards the building up of capital equipment. There is also another point to be borne in mind. A development programme is likely to increase the demand for certain key commodities, e.g., iron and steel, which are used by a number of industries. Unless, therefore, their price is held down, there is a danger of price rises in a whole range of industrial products. Price controls can, however, rarely be effective by themselves and have to be supplemented by physical controls on production as well as distribution.

14. Thus a system of controls, judiciously planned and efficiently administered, is a necessary accompaniment of a programme of planned development such as is contemplated. In some circumstances—and these are most likely to prevail over the next few years—the accent may be on the enforcement of price ceilings. In other conditions—which are not immediately in prospect—there may be a need to support minimum prices so as to ensure a reasonable return to certain lines of economic activity. But to dispense with controls altogether is inconsistent with economic planning. Though often irksome, they are part of the price which the country will have to pay for economic progress.

15. Most of the opposition to controls comes from dissatisfaction with the way in which some of them work in practice. Controls are generally inconvenient to the individual citizen and, unless viewed in a wider setting than he can appreciate, often appear irrational in their operation. In an economic system, organised for the most part in small units, the difficulties of administering them are very great. Methods adopted successfully in other countries are not fully applicable in India. It is these conditions which suggest the need for moving towards state trading in certain key commodities since thereby effective control could be gained at strategic points.

## ESSENTIAL POLITICAL CONDITIONS

16. We have outlined a number of economic measures and policies which are useful or necessary for successful planning. A brief

reference may also be made to the essential political and administrative conditions. Summarily stated these are :—

- (a) a large measure of agreement in the community as to the ends of policy ;
- (b) effective power, based on the active co-operation of citizens, in the hands of the State ; and earnest and determined exercise of that power in furtherance of these ends ; and
- (c) an efficient administrative set-up, with personnel of requisite capacity and quality.

A national plan has to be an expression of a basic unity of purpose in the community. It is this unity which will constitute the ultimate sanction behind the plan, give it driving force and evoke the necessary sacrifice and effort on the part of its members. Joined to this unity of purpose must be effective power in the hands of the State to be exercised with the necessary persistence and determination in order to ensure the furtherance of accepted ends. Constructive use of this power calls for integrity, efficiency and responsiveness in administration. The creation and maintenance of these basic prerequisites of economic and social growth have to be considered as matters deserving continuous and careful attention, and if this theme recurs several times in this report, it is because the need for creating in the country an environment favourable to progress can hardly be over-emphasized. The changes in administration appropriate to the new role of the State are dealt with in detail in subsequent chapters.

## CHAPTER III

### ASSESSMENT OF RESOURCES

The Five Year Plan involves an outlay of Rs. 2,069 crore on development by the Central and State Governments over the period 1951-56, and the outline of the Plan given in the next chapter is concerned with the distribution of this expenditure. But the Plan has also in view a programme of development for the entire economy and in assessing the resources available to the public sector, the needs of the private sector have also to be kept in mind. There is, in other words, a single pool of available resources on which both public and private sectors have to draw, and if too much is taken away by taxation and public borrowings for development in the public sector, the private sector will be left without adequate resources. The problem is not, therefore, merely to find resources for the public sector, but to enlarge progressively the size of the common pool and to see that it is drawn off into the two sectors in accordance with agreed priorities.

2. The data for making an assessment of the total resources available to the country for development is very inadequate; but rough estimates place India's national income in 1950-51 at around Rs. 9,000 crore, and of this, the savings available for net investment are not likely to have much exceeded Rs. 450 crore. Over the five year period the annual national income is expected to go up by Rs. 1,000 crore and to reach a level of Rs. 10,000 crore by 1955-56. Since it is the intention that about 20 per cent of the increase each year should be diverted from consumption so as to step up domestic savings, the total domestic savings over the five years may be of the order of Rs. 2,700 to Rs. 2,800 crore. These are expected to be supplemented by (a) withdrawals from sterling balances and (b) other external resources, together estimated at about Rs. 800 crore. The total resources available for investment would thus be of the order of Rs. 3,500 to Rs. 3,600 crore. Of the outlay of Rs. 2,069 crore proposed to be spent on development by public authorities, about Rs. 400 crore would be expenditure of a recurring nature on social services, agricultural extension services, etc., which would be met from the normal revenues of the Central and State Governments. Even allowing for this, however, the public development programme would still involve channelling into investment through the public sector about 50 per cent of the total resources available in this period. This is a high proportion—in other countries 50 per cent would normally be considered very high—but it is inevitable in India at this stage in view of the urgent need for investment in spheres like irrigation, power and transport which do not normally attract private agencies, but which are prerequisites for the further expansion of the economy.

3. Moreover the total resources must not be regarded as an absolutely fixed capital fund. Within limits, the State is in a position to regulate standards of consumption and raise resources for investment which would not otherwise be forthcoming. In an underdeveloped country, where there are no large savings by corporations, the enlargement of public savings through taxation and through the earnings of public enterprises is one of the major means of raising substantially the net level of savings. Looking to the future, it is clear that public savings will have to be enlarged in this manner to meet the requirements of development; even over the short period of the present Plan certain measures for raising additional resources form an integral part of the planned programme.

4. In this connection it may be observed that India's total tax revenue in 1950-51 (including the tax revenues of both the Central and State Governments) amounted to a little over Rs. 625 crore. As a proportion of the national income, viz., about seven per cent, this level of revenue is one of the lowest in the world. The corresponding ratio is 35 per cent in the United Kingdom, 23 per cent in Japan, 22 per cent in Australia and 20 per cent even in Ceylon. Too much should not be read into this comparison in view of the low level of per capita income in this country. Yet the comparison has significance; for if the proportion of the national income taken by taxation were to remain as small as it is today, there would be no prospect for increasing public savings to any material extent in the immediate future and so raising the level of investment in the economy as a whole.

5. A striking feature of the present structure of taxation in India is the relatively narrow range of the population affected by it. About 28 per cent of the total tax revenue comes from direct taxation\* which directly affects only about half of one per cent of the working population. Another 17 per cent is accounted for by import duties which are derived to a large extent from consumers of commodities like motor vehicles, high-quality tobacco, silk and silk manufactures, liquors and wines, and affect only a relatively small section of the population. On the other hand, land taxation, which in the depression years before the war weighed heavily on the farmer, contributes now only about eight per cent of the total tax revenue compared with about 25 per cent in 1939. Though a substantial increase in the percentage contribution of land revenue may not be feasible, there is certainly scope for moderate upward revision.

6. This narrow coverage of taxation is largely responsible for the small proportion of the national income absorbed by the Government in the form of tax revenues. It also partly accounts for the existing level of taxation appearing to be heavy. Both ways it restricts the extent of public savings. These are matters which cannot be overlooked, especially when it is clear that with net savings of only about five per cent of the national income the rate of progress that can be attained will be extremely limited. In the

---

\*For the purpose of this calculation land revenue has been treated as an indirect tax.

initial stages of planning, however, the size of the programme as well as the sources of finance have to be fixed keeping in view what can be achieved through the existing administrative and fiscal machinery and within the limitations imposed by a given political and economic structure. While, therefore, taxation policy in India must be designed to raise the level of tax revenues so as to meet the needs of development, it has to be adjusted to the social and economic framework within which development has to start.

7. The scheme of finance proposed for meeting the proposed outlay of Rs. 2,069 crore in the public sector is, broadly speaking, as follows:—

	<i>Rs. crores</i>
(i) Savings from the current revenues of the Central and State Governments (including Railways) after meeting non-development expenditure ..	738
(ii) Internal loans, small savings, etc., to be raised by the Central and State Governments ..	520
(iii) Deficit financing against the release of sterling balances .. .. .	290
(iv) External assistance received up to now ..	156
(v) Further external assistance or, in the alternative, additional measures of internal taxation and borrowing and larger deficit financing ..	365
<b>Total</b> ..	<b>2,069</b>

8. What the estimates under (i) and (ii) above imply may be viewed in the light of the actuals for a past year. As regards (i), in the year 1950-51, savings from current revenues estimated on a comparable basis worked out to about Rs. 145 crore. Thus the estimate for savings for the five year period only maintains on an average the level of that year. The fact that no increase over this level is envisaged is accounted for mainly by two factors. In the first place, windfall revenues from export duties and from arrears of income-tax helped the Central Government to develop an unusually large revenue surplus in 1950-51. Secondly, the outlay on defence, owing to the needs of the infant defence services, i.e., the navy and air force, has risen substantially since 1950-51. In the light, therefore, of this increased expenditure and of the windfall receipts in 1950-51, even the maintenance of the level of public savings at the level reached in that year will require additional revenues from other sources. According to the financial programme drawn up last year, the State Governments are to raise in all about Rs. 213 crore of additional revenue over the five years, which has since increased to Rs. 232 crore on account of the further addition of Rs. 19 crore by some States to the outlay on their Plans. The measures to be adopted in respect of about three fourths of this amount were settled in

consultation with the State Governments concerned, and the nature of these measures will be clear from the following table :—

	<i>Rs. crores</i>
Revenue from taxation on land (covering land revenue and agricultural income tax) ..	34·0
Revenue from irrigation (covering irrigation rates and betterment levies) ..	29·5
Revenue from other commercial ventures of the State (i.e., forests, electricity and minerals) ..	4·8
Revenue from capital transfers (i.e., from Estate Duties) .. .. .	21·3
Revenue from taxation of general commercial activity (i.e., Sales tax) .. ..	25·5
Revenue from other miscellaneous sources (including taxes on luxuries) .. ..	37·5
Revenue from economies in non-development expenditure .. .. .	12·4
	165·0*

9. As regards (ii), the yield from loans, small savings, deposits and funds and other miscellaneous sources is expected to improve considerably over the level of 1950-51, when the net receipts were only Rs. 77 crore. Over the period of the Plan these sources are expected to yield Rs. 520 crore which means an improvement on an average of the order of Rs. 43 crore per annum. The borrowing programme of the Centre and the States, which involves raising in all an amount of Rs. 385 crore over the five years, represents a big increase over the net borrowings of 1950-51, when loans, small savings and other unfunded debt yielded a net sum of only about Rs. 39 crore, and in respect of loans there was actually a net outflow. In that year, however, there were exceptional factors following the outbreak of the Korean war which caused sections of the community to move away from holdings of money to holdings of commodities. The net absorptive capacity of the market in regard to Government loans cannot, therefore, be assessed with reference to 1950-51. Over the period of the Plan investment in Government securities from the provident funds of industrial workers is expected to yield about Rs. 36 crore. It would also appear that at present the market at least for short-term and medium-term loans is more favourable than it has been for sometime. The outlook in regard to small savings is also distinctly better over the period of the Plan than it was in 1950-51. From Rs. 33·5 crore in that year, the budgeted figure for 1952-53 has already gone up to Rs. 44·5 crore. Together with other unfunded debt the average annual rate of Rs. 54 crore visualised

---

\*The need for raising the remaining Rs. 67 crore has arisen mainly out of the proposals made by some of the State Governments, subsequent to the consultations with the Commission, for raising the size of their State Plans. The upward revision of the targets of expenditure has been accepted provisionally on the condition that the resources corresponding to these would be raised by the governments concerned.

as part of the financial programme should be relatively easy to achieve. The objective must in fact be to surpass this target. It has been agreed recently that proceeds from small savings collected by the States in excess of the present level of Rs. 44·5 crore will be retained by the States responsible for raising them, the amounts thus retained being treated as loans from the Centre. This arrangement is designed to promote the small savings campaign more effectively by helping the State Governments to link up small savings with schemes of local development in which the people are directly interested.

The institution of provident funds is another method of encouraging and mobilising savings on a large scale. The recent extension of this system to cover workers in six major industries points to a direction in which more progress should be made.

10. The following table which gives the breakdown of the estimates for 1950-51 as well as for the period of the Plan shows the division of responsibility between the Centre and the States for raising resources as it is now visualised.

	Base year 1950-51			Plan period 1951-56		
	Centre (including Part C States.)	Part A and B States and Kashmir.	Total.	Centre (including part C States).	Part A and B States and Kashmir.	Total.
	<i>Rs. crores</i>					
Public Savings from						
(a) current revenues	71	51	122	160	408	568
(b) railways	23	—	23	170	—	170
Private savings absorbed through						
(a) loans from the public	—11	8	—3	36	79	115
(b) small savings and other unfunded debt	42	—	42	270	—	270
(c) deposits, funds and other miscellaneous sources (net)	—	38	38	90	45	135
Total	125	97	222	726	532	1258



11. Over the period of the Plan, there will be a flow of assistance from the Centre to the States under a variety of heads. Apart from grants-in-aid of a statutory nature, the States will receive grants from the Central Road Fund, grants for relief of displaced persons and grants for raising food production, and also assistance in the form of loans for river valley schemes, minor irrigation, community projects, cottage and small-scale industries and other schemes of development. Owing to the classification which has had to be adopted of projects as 'Central' and 'State', the magnitude both of the States' share in the development programme of the public sector and of the Central assistance to the States is not fully evident. Thus multi-purpose river valley projects (i.e., the Damodar Valley, Bhakra-Nangal, Hirakud and Harike projects) are really the projects of State Governments, but since they extend in some cases over two or three States, whose ultimate financial liability for them has not been exactly determined, and since the initial responsibility of finding finance for them in the shape of loans to the State Governments rests with the Centre, they have been classed as 'Central'. For these and similar reasons certain other schemes, financial responsibility for which has not been finally determined, e.g., community projects, minor irrigation works, and industrial housing, have been shown as part of the Central Government's development programme, though they belong primarily to the States. On the basis of this classification the share of the States in the total outlay of Rs. 2,069 crore is only about Rs. 800 crore. Similarly the estimated 'Central assistance' for State Plans comes to only about Rs. 193 crore. The contribution which this would make to the financing of the State Plans will be evident from the following statement which compares the position in 1950-51 with the estimates for the whole period of the Plan—

	<i>Rs. crores</i>	
	1950-51	1951-56
Resources of Part A and B States and Kashmir.	97	532
“ Central Assistance ”	31	193+4*
Total Resources available for Development Expenditure.	128	729
Development expenditure as in the State Plans.	118	796
Surplus (+) Deficit (—)	+10	—67

12. From a review of the working of the State Plans for 1951-52 and the State budgets for 1952-53 it would appear that the task of organising finances to the pattern outlined in the preceding

\*Includes assistance of Rs. 10 crore for the Kashmir State Plan and Rs. 4 crore to be given by way of statutory grants for scheduled tribes which will be available for part of the development expenditure on scheduled tribes in the Assam State Plan.

paragraphs has not progressed very far. Though the developmental expenditure of the States in 1951-52 was about Rs. 135 crore, Rs. 24 crore lower than the average annual rate contemplated, there was a shortfall of resources of as much as Rs. 68 crore. This had to be met by drawing on reserves; but the reserves of the State Governments are limited and the process cannot go on for long. It is true that there were special factors, like famine and floods in several States, to account for the pressure on State finances and that larger deficits were anticipated in the State budgets in the initial years of the Plan than in later years. Nevertheless the shortfall in resources in 1951-52 is greater than it should have been.

13. The revenues of State Governments have been rising over the last two years, but expenditure outside the State Plans has been rising faster and more than absorbing these increases. To some extent this is due to increased costs of administration ; but expenditure has also gone up under heads like agriculture, education and health where any major expansion should normally be on items included in the State Plans. It would seem that there has been a tendency for schemes outside the Plans to be taken up in addition to those already included in them. To the extent that this is done and a close check is not kept on non-developmental expenditure of all kinds, the implementation of the State Plans is bound to suffer. The capacity of the Centre to give additional assistance is limited. Even as it is, there is a gap of Rs. 365 crore between resources, existing or in view, and the proposed outlay of Rs. 2,069 crore. It is necessary, therefore, to repeat that the measures settled with the State Governments for raising additional resources at their initiative are an essential part of the planned programme of development.

#### DEFICIT FINANCING

14. The above assessment of the resources of the Central and State Governments brings us to the question of the scope for deficit financing for development. The term 'deficit financing' is used to denote the direct addition to gross national expenditure through budget deficits, whether the deficits are on revenue or on capital account. The essence of such a policy lies, therefore, in Government spending in excess of the revenue it receives in the shape of taxes, earnings of State enterprises, loans from the public, deposits and funds and other miscellaneous sources. The Government may cover the deficit either by running down its accumulated balances or by borrowing from the banking system (mainly from the Central bank of the country) and thus 'creating' money.

15. The dangers of 'creating' money are sufficiently well known. Such a course means the depreciation of the existing currency and consequent inflation of prices and, if carried beyond certain limits, may completely undermine public confidence in the currency with catastrophic results. Deficit financing can be countenanced only if there is an assurance of steady supplies of the essential commodities of consumption. The injection of increased purchasing power into the system is apt to lead to increased demand for basic

commodities and, if their supply cannot be expanded quickly, their prices rise and push up the cost of living. It will thus be apparent that the scope for deficit financing is intimately bound up with the policy of controls. If the supply and distribution of foodgrains and other essential commodities, e.g., cloth and gur or sugar, could be so organised as to meet the minimum requirements of the whole population, the dangers of deficit financing would to that extent be minimised. The impact of larger money incomes would then fall on other commodities, which are more of the luxury type and matter less from the point of view of the cost of living of the large majority of the people. Unless, therefore, there is a firm and clear policy regarding controls, not only is the scope for deficit financing restricted but there is a perpetual danger of even relatively small budgetary deficits generating inflationary pressures. It is obvious that the low levels of consumption at present prevailing in the country—which mean that increased purchasing power would immediately push up demand for essential commodities—and the shortages of essential commodities, even at these low levels, severely limit the scope for deficit financing.

16. At the present stage deficit financing is visualised to the extent of Rs. 290 crore only—a figure which represents the estimated releases from India's sterling balances over the five year period. These balances constitute past savings of the community, i.e., amounts due to this country for goods and services supplied during the war but not paid for at that time. Their release means the inflow of goods and services from abroad worth Rs. 290 crore without any corresponding outgoings. In other words the country will be drawing upon its past savings and obtaining thereby an immediate net addition to the goods and services available. These additional goods and services will neutralise to some extent—though not completely—the inflationary effects of Rs. 290 crore of 'created' money injected into the system. It is considered therefore that deficit financing can with reasonable safety be contemplated up to this limit.

#### EXTERNAL RESOURCES

17. The loans and grants received so far from abroad during the period of the Plan which could be used for the development programme amount to Rs. 156 crore, made up as follows:—

	<i>Rs. crores</i> <sup>a</sup>
- United States food loan .. .. .	90
Commonwealth Assistance under the Colombo Plan .. .. .	12
Assistance under the Technical Co-operation Agreement, 1952 .. .. .	25
Assistance under the first supplement to the Technical Co-operation Agreement, 1952. ..	18
Proceeds of loans from International Bank (1950) ..	9
Other aid .. .. .	2
Total ..	156

18. In these early stages of development further external assistance would certainly be useful and could help to fill the gap of Rs. 365 crore for which no definite provision has yet been made. Such assistance is, of course, only acceptable if it carries no conditions, expressed or implied, which might affect even remotely the ability of this country to take an independent line in foreign affairs. The danger must also be recognised of excessive reliance on foreign aid which depends on the domestic political situation in the lending countries and which might be interrupted by unfavourable international developments. In view of these considerations, preference should be given to external investment organised on an international basis; but investment from advanced countries either on an inter-governmental basis or on the basis of negotiations between individuals or corporations in the countries concerned, should not be excluded.

19. External assistance would serve two functions simultaneously. It would make available adequate supplies of foreign exchange and would also supplement the investible resources in the country. Balance of payment difficulties are an inevitable feature of development at this stage. No doubt the schemes included in the Five Year Plan involve only a comparatively small direct foreign exchange expenditure of about Rs. 400 crore. This is mainly due to the emphasis on agriculture and the general bias in favour of labour-intensive schemes which will help to utilise to the maximum the under-employed man-power in the country. If industrialisation had been more prominent in the development programme of the public sector, the direct foreign exchange expenditure would have been considerably higher. But the Rs. 400 crore directly attributable to the Plan does not represent the real foreign exchange requirements of the development programme taken as a whole. The outlay within the country will inevitably expand domestic incomes, creating, in turn, additional demand for food and other basic commodities which may have to be met by imports from abroad to the extent that additional supplies are not forthcoming domestically. External assistance would, therefore, greatly ease the balance of payment difficulties which are likely to arise.

20. But though supplemental resources from abroad will be very helpful, the comparatively modest programme drawn up for this first five year period cannot be made rigidly dependent on the availability of such resources. Once certain main lines of work have been commenced, further investment cannot be avoided without serious loss and dislocation. If further external assistance is not forthcoming, there will be scope, no doubt, for some marginal adjustments, but, broadly speaking, the planned outlay of Rs. 2,069 crore in the public sector must be adhered to so that a rate of investment is attained in this period which can form the basis of a more rapid advance thereafter. This will mean, of course, that a greater burden will have to be placed on the community, by taxation or otherwise, and consumption held down or even reduced. This is inescapable if the Plan is to be fulfilled without further foreign aid.

## CHAPTER IV

### THE FIVE YEAR PLAN IN OUTLINE

The Five Year Plan is essentially a first step towards planning for rapid development in the future. The targets of investment which it sets, as well as the increases in production which are expected to be achieved thereby, are, therefore, modest when compared to what has to be achieved within the next twenty years or so ; but they are high compared to past trends.

2. In proposing an outlay of Rs. 2,069 crore in the public sector the Commission has taken into account the following main considerations :—

- (i) the need for initiating a process of development that will form the basis of the much larger effort needed in the future ;
- (ii) the total resources likely to be available to the country for the purpose of development ;
- (iii) the close relationship between the rates of development and the requirements of resources in the public and in the private sectors ;
- (iv) the necessity of completing the schemes of development initiated by the Central and State Governments prior to the commencement of the Plan ; and
- (v) the need to correct the maladjustments in the economy caused by the war and partition.

#### PRIORITIES AND THE PATTERN OF OUTLAY

3. The distribution of expenditure in the development programme of the public sector is summarised in the following table.

	<i>Rs. crores</i>
Agriculture and Community Development ..	361
Irrigation .. .. .	168
Multi-purpose irrigation and power projects ..	266
Power .. .. .	127
Transport and Communications .. .. .	497
Industry .. .. .	173
Social services .. .. .	340
Rehabilitation .. .. .	85
Miscellaneous .. .. .	52
Total ..	<u>2069</u>

This distribution reflects the priorities discussed in Chapter II. Agricultural development receives the highest precedence, and this necessitates an extensive programme of irrigation covering both minor and major projects. The generation of electric power is linked in many cases with the major irrigation projects, but has a high priority in its own right since extensive distribution of electrical energy is essential not only for the growth of small-scale enterprises and for rural development in the wider sense but also for industrial expansion. Provision is also made for considerable expenditure on roads and railways which have to respond to the expanding needs both of agriculture and industry.

4. Industrial expansion in this period will rest largely on private initiative and resources, but these will be supplemented at certain points by the resources of the public sector as well as by foreign investment, and the programmes of the public and private sectors taken together are not inconsiderable.

5. As regards social services, the needs are so vast that what can be achieved through financial outlay by public authorities in the present period is limited. In the present Plan the rehabilitation of displaced persons absorbs a considerable portion of the resources that can be allocated for expansion. Financial outlay in this field has to be supplemented by direct community effort on a large scale for the liquidation of illiteracy and improvement of sanitation. The provision in the Plan for the community development programme and for local works is designed, among other things, to evoke such community effort.

6. The significance of the outlay of Rs. 2,069 crore from the point of view of the additions it will make to productive equipment in the public and private sectors and to the production potential of the community in the larger sense of the term, is shown in the following table:—

	<i>Rs. crores</i>
(1) Outlay which will add to the stock of productive capital owned by the Central and State Governments .. .. .	1,199
(2) Outlay which will contribute to building up productive capital in the private sector ..	..
(i) Expenditure on agriculture and rural development (excluding community projects) .. .. .	244
(ii) Loans for transport and industry .. .. .	47
(iii) Provision for stimulating local development (community projects and local works) .. .. .	105
(3) Outlay on social capital .. .. .	425
(4) Outlay unclassified above (including provision for scarcity affected areas) .. .. .	49
Total .. .. .	2,069

## DISTRIBUTION OF EXPENDITURE

7. A break-up of the development expenditure of the Central and State Governments by major categories is given in the appendix at the end of the book.

The distribution of the total outlay as between the Central and the State Governments is summarised below:—

			<i>Rs. crores</i>
Central Government (including railways)	..		1,241
States : Part A	..	..	610
" B	..	..	173
" C	..	..	32
Jammu & Kashmir	..	..	13
		<b>Total</b>	<b>2,069</b>

As already explained in Chapter III the above classification understates the share of the States in the development programme since the multi-purpose river valley projects and certain other projects have been shown as part of the Central Government's development programme.

8. The outlay proposed in the development programmes of States, other than Jammu and Kashmir, is shown below:—

## STATE PLANS

<i>Part A States</i>	<i>Rs. crores</i>	<i>Part B States</i>	<i>Rs. crores</i>	<i>Part C States</i>	<i>Rs. crores</i>
Assam	17·49	Hyderabad	41·55	Ajmer	1·57
Bihar	57·29	Madhya		Bhopal	3·90
Bombay	146·44	Bharat	22·42	Bilaspur	0·57
Madhya		Mysore	36·60	Coorg	0·73
Pradesh	43·08	Pepsu	8·14	Delhi	7·48
Madras	140·84	Rajasthan	16·82	Himachal	
Orissa	17·84	Saurashtra	20·41	Pradesh	4·55
Punjab	20·21	Travancore-		Kutch	3·05
Uttar		Cochin	27·32	Manipur	1·55
Pradesh	97·83			Tripura	2·07
West Bengal	69·10			Vindhya	
				Pradesh	6·39
<b>Total</b>	<b>610·12</b>	<b>Total</b>	<b>173·26</b>	<b>Total</b>	<b>31·86</b>

The State Plans were drawn up initially over a year ago in consultation with the State Governments concerned and on the basis of forecasts supplied by them regarding their likely revenues and expenditure in the period of the Plan. In cases where the State Governments made proposals subsequently to increase the size of their State Plans, the upward revisions have been accepted provisionally, subject to the resources corresponding to them being raised by the Governments concerned.

## APPRAISAL OF THE PROGRAMMES IN THE PLAN

9. In appraising the results to be achieved by the Plan, the development programme in the public sector cannot be taken by itself. This programme, as explained earlier, is based on an appraisal of the needs of the economy as a whole and is related to an assessment of the effort likely to be forthcoming from the private sector. In the case of agriculture the supplemental investment required would be, to a great extent, in the form of direct contributions of labour by the farmers themselves. In the industrial sphere, account has been taken of the working plans of about 40 large and medium-scale industries covering about two-thirds of the total output of the factory enterprises in the country. In other spheres e.g., in respect of small-scale enterprises in transport and industry, only broad judgements can be made. Similarly the contribution that may be expected from community effort in the extension of education, sanitation, communications, etc., cannot be assessed in advance in precise terms.

The salient features of the development programmes both in the public and the private sectors so far as they can be envisaged are outlined in the following paragraphs. Their results in terms of certain selected targets are shown in the statement below:—

	1950-51	1955-56
<b>I. Agriculture</b>		
Food-grains* (million tons)	52·7	61·6
Cotton (lakh bales)	29·7	42·2
Jute (lakh bales)	33·0	53·9
Sugar-cane (million tons)	5·6	6·3
Oil-seeds (million tons)	5·1	5·5
<b>II. Irrigation and Power</b>		
Major irrigation (million acres)		8·5
Minor irrigation (million acres)	50·0	11·2
Electrical energy (installed capacity in million kw.)	2·3	3·5
<b>III. Industry</b>		
Iron and Steel (lakh tons)		
Pig iron available for foundries	3·5	6·6
Finished Steel	9·8	13·7
Cement (lakh tons)	26·9	48·0
Aluminium (thousand tons)	3·7	12·0
Fertilisers (thousand tons)		
Ammonium sulphate	46·3	450·0
Superphosphate	55·1	180·0
Locomotives		170
Machine tools (in thousands)	1·1	4·6
Petroleum refining		

\*Including gram and pulses. Output in 1949-50 (used as the base for fixing target for 1955-56) was 54·0 million tons.



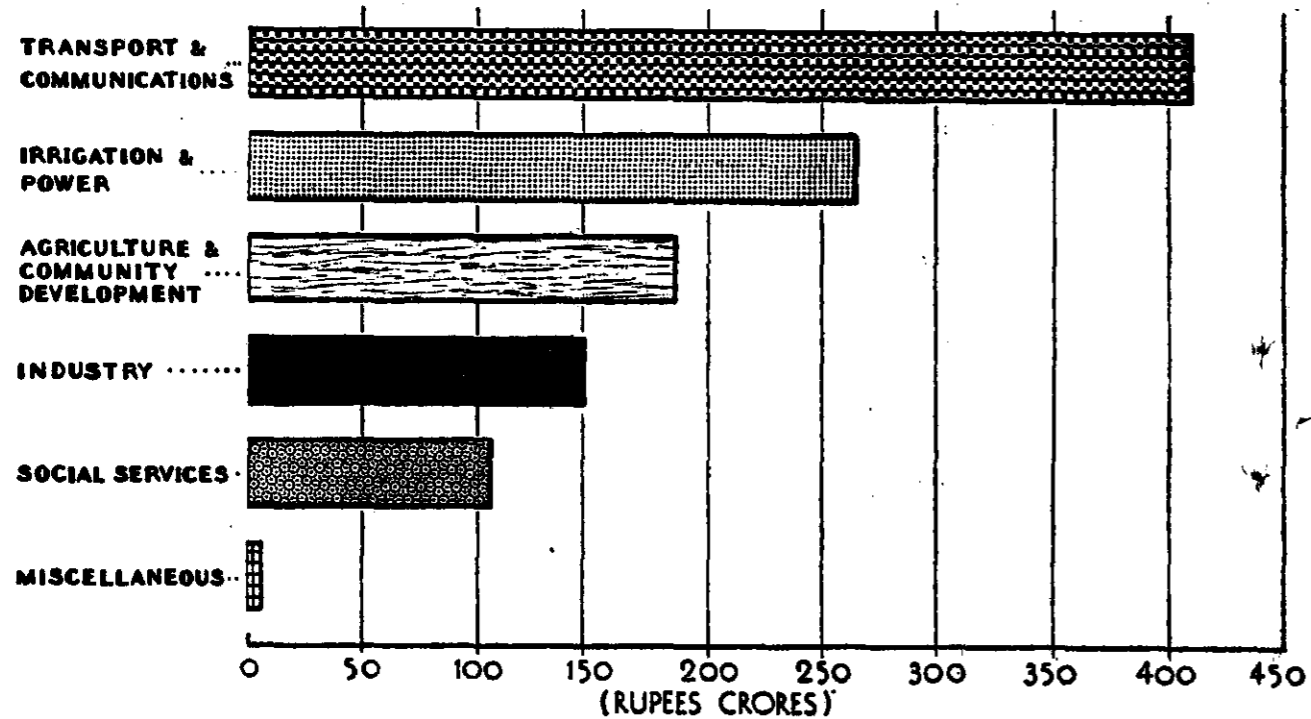
Liquid petroleum (million gallons) figure	not available	403·0
Bitumen (thousand tons)	"	37·5
Cotton manufacture		
Yarn	1179	1640
Mill cloth (million lb.)		
Mill cloth (million yards)	3718	4700
Handloom (million yards)	810	1700
Jute manufactures (thousand tons)	892	1200
Agricultural machinery		
(a) pumps, power-driven (thousands)	34·3	85·0
(b) Diesel engines (thousands)	5·5	50·0
Bicycles (thousands)	101·0	530·0
Power alcohol (million gallons)	4·7	18·0
IV. Transport		
Shipping (tonnage)		
Coastal (GRT thousands)	211·0	315·0
Overseas (GRT thousands)	173·5	283·0
Roads		
National highways (thousand miles)	11·9	12·5
State roads (thousand miles)	17·6	20·6
V. Education**		
Pupils in :		
Primary schools (lakhs)	151·1	187·9
Junior basic schools (lakhs)	29·0	52·8
Secondary schools (lakhs)	43·9	57·8
Industrial schools (thousands)	14·8	21·8
Other technical and vocational training schools (thousands)	26·7	43·6
VI. Health		
Hospitals (beds in thousands)	106·5	117·2
Dispensaries (number)		
Urban	1358	1615
Rural	5229	5840
VII. Developmental institutions		
Panchayats (thousands)	55·1	69·1
Co-operative societies.*		
Credit (thousands)	87·8	112·6

\*\*These estimates do not cover (except in respect of industrial schools) Hyderabad, Rajasthan, Ajmer and Vindhya Pradesh. In some cases, data for a few States (e.g., Uttar Pradesh in respect of primary schools and Madhya Pradesh in the case of junior basic and secondary schools) are also not covered in these estimates.

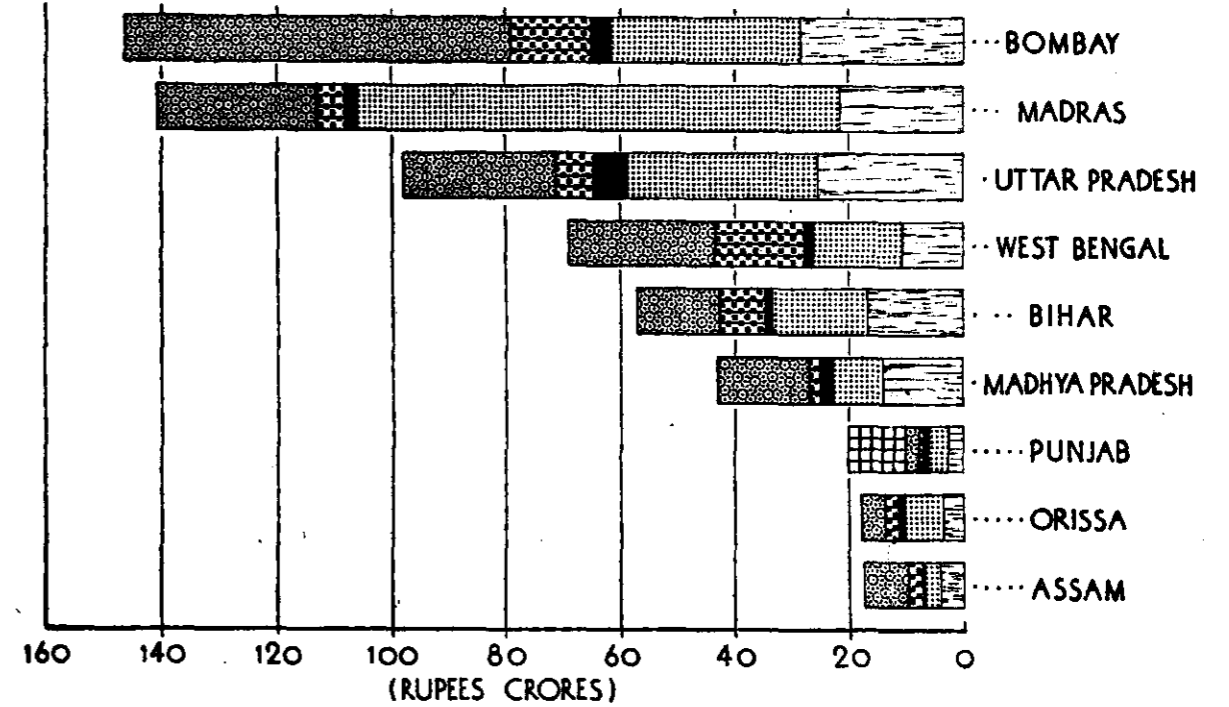
\*The estimates here exclude data for Punjab, Orissa, Hyderabad, Pepsu and most of the Part C States.

# CENTRAL AND STATE GOVERNMENT PLANS

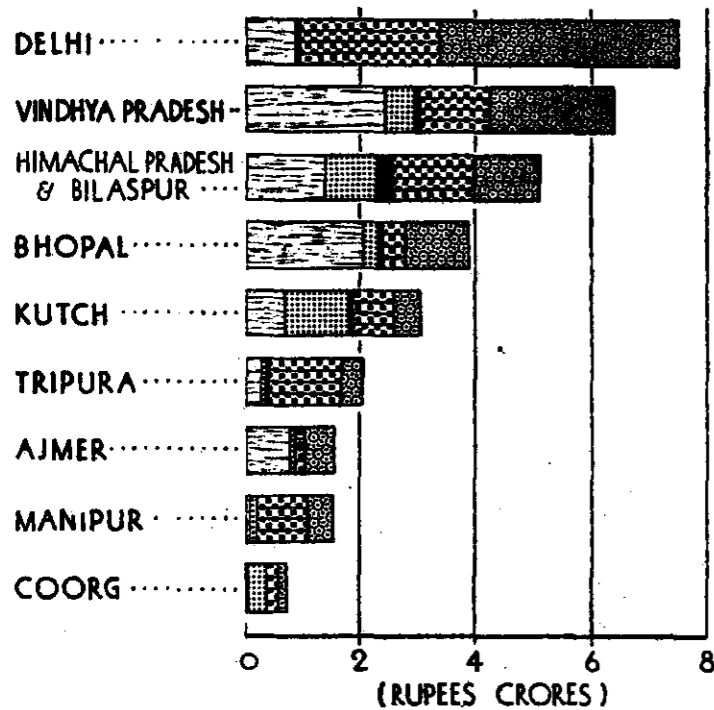
## CENTRAL GOVERNMENT



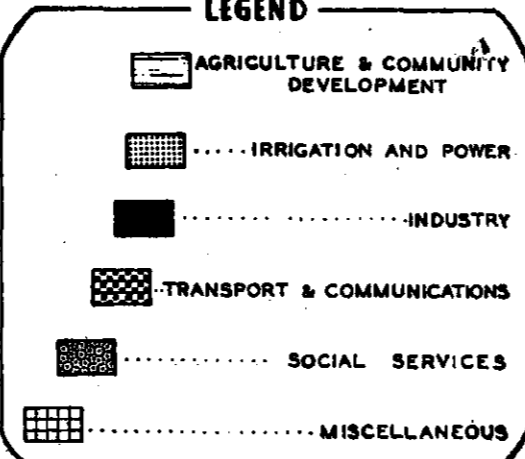
## PART "A" STATES



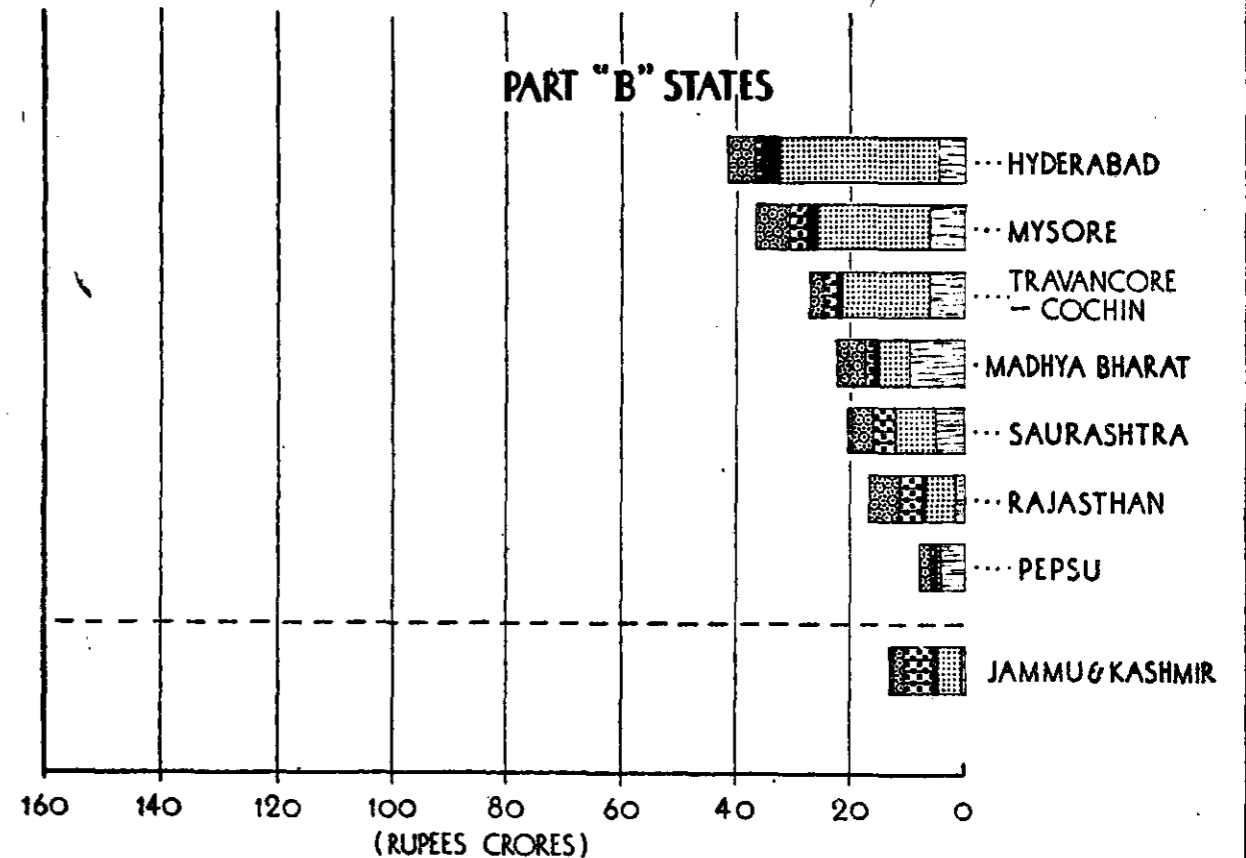
## PART "C" STATES



### LEGEND



## PART "B" STATES



Sale and marketing (thousands)	14·7	20·7
Multi-purpose (thousands)	31·5	40·5
Lift irrigation	192	514
Co-operative farming	352	975
Others (thousands)	27·3	35·8
Total (thousands)	161·9	211·1

#### AGRICULTURE AND COMMUNITY DEVELOPMENT

10. Agriculture and community development is a comprehensive term, including inter alia livestock improvement, forests and soil conservation, co-operation and village panchayats. The Plan makes a total provision of Rs. 361 crore, of which Rs. 184 crore is for agriculture, a little over Rs. 100 crore for community projects and rural development, Rs. 22 crore for animal husbandry and dairying and Rs. 12 crore for forests and soil conservation.

11. Most of the schemes for agriculture fall within the sphere of the State Governments and the role of the Central Government is to co-ordinate their programmes and to assist them in certain important respects. The Central Government's plan provides for the completion of the present programmes of the Central Tractor Organisation, for the establishment of a national extension organisation and for schemes for livestock improvement, soil conservation, co-operative training and experiments in co-operative farming.

12. Detailed programmes for increasing the production of food-grains, cotton, jute, sugar-cane and oil-seeds were formulated initially in 1950-51 in consultation with the State Governments. In the case of food-grains the target for 1955-56 represents an increase of about 14 per cent over the level of 1949-50,\* in the case of cotton 44 per cent, jute 63 per cent, sugar-cane 13 per cent and oil-seeds eight per cent. Following a reappraisal of the programmes in 1952 it was found that they were likely to give an increase of only 6·5 million tons of foodgrains instead of 7·2 million tons as originally envisaged. The programmes have, therefore, been strengthened by an additional provision of Rs. 30 crore for minor irrigation.

13. The community development projects, which are conceived primarily as a programme of intensive development of selected areas, would also contribute to raising the level of agricultural production. A beginning has been made this year with 55 projects. The central object of the community development programme is to mobilise local man-power for a concerted and co-ordinated effort at raising the whole level of rural life. The emphasis is inevitably on improving the level of agricultural productivity. This is reflected in the fact that the bulk of the projected expenditure is devoted to the provision of irrigation, land development and extension services. As further experience is gathered, the intention is to cover the entire

---

\*Compared with 1950-51, when the output was abnormally low, the increase would be greater.

country with schemes designed to promote intensive development through increased agricultural productivity. The Five Year Plan makes a provision of Rs. 90 crore for promoting such development. There is also a scheme for a national extension service for agricultural development for which a provision of Rs. 3 crore has been made in the Plan.

14. In the period of the Plan some parts of the country may not stand to benefit directly from the various development schemes taken up. In order that the Plan may arouse an interest in as wide a section of the community as possible, a provision of Rs. 15 crore is being made for local development works in the hope that schemes will be forthcoming from municipalities, district and taluka boards and other local bodies to which financial assistance can be given. There is also a special provision of Rs. 15 crore for organising relief activities on developmental lines in scarcity-affected areas.

#### IRRIGATION AND POWER PROGRAMMES

15. The programme for irrigation and power is based primarily on projects initiated in the period prior to the Plan. The total cost of the projects thus taken over into the Plan has been estimated at Rs. 765 crore, of which an expenditure of Rs. 153 crore had already been incurred up to the end of 1950-51. The provision for these projects in the period of the Plan is Rs. 518 crore, leaving only a little under Rs. 100 crore to be spent in the subsequent years. The progress made on these projects will help, within the period of the Plan, to bring an additional area of 8.5 million acres under irrigation and to generate 1.1 million kw. of additional power. On the completion and full development of these projects, the total addition to the area irrigated will be 16.9 million acres and to power 1.4 million kw.

16. The projects already in progress will put such a strain on financial and technical resources during the first three years of the Plan that it will not be possible to start work on new projects till 1954-55. The five new irrigation and power projects which are proposed to be taken up towards the later stages of the Plan are the following: Kosi (Stage I) Koyna (Stage I), Krishna (the scope of which is not yet defined), Chambal (Stage I) and Rihand. The total cost of these projects will be well over Rs. 200 crore, out of which it may be possible to spend Rs. 40 crore during the period of the Plan, for which provision has been made.

17. This programme, including projects in progress as well as the new projects proposed, has to be viewed as part of a more long-term programme intended to add, within the next two decades, 40-45 million acres to the area now under irrigation and seven million kw. to the existing power generating capacity.

18. The irrigation and power benefits from the major projects in the period of the Plan will be supplemented by the results of the

minor irrigation programme and by the extension schemes of private electricity undertakings. The minor irrigation programme in the Plan, involving an expenditure of Rs. 77 crore, is expected to benefit 11.2 million acres. As regards power, the extension projects of private electricity undertakings will add 166,000 kw. of installed capacity in the period of the Plan.

19. There are parts of the country in which scope exists for large irrigation projects and there are others in which only smaller projects are possible. Each area has to be served by the kind of schemes for which it offers the best facilities. Large and small projects are thus complementary. The Plan includes eight irrigation projects (including multi-purpose projects) costing above Rs. 5 crore each, 15 costing between Rs. 1 crore and Rs. 5 crore, 21 costing between Rs. 50 lakh and Rs. 1 crore, and 17 schemes costing between Rs. 10 lakh and Rs. 50 lakh.

20. Rural electrification has so far made little progress in the country, only one in about 200 villages being served with electricity. The Plan makes a provision of Rs. 27 crore for extending rural electrification. This programme is mainly confined to the southern States of Madras, Mysore and Travancore-Cochin, but the scope for rural electrification will undoubtedly grow as more power becomes available in other areas of the country. Electricity will be useful not only for agricultural operations like pumping, but also for the processing of agricultural produce and for other cottage and small-scale industries in the villages.

#### INDUSTRIAL DEVELOPMENT

21. The expenditure on industry, as shown in the development programmes of the public sector, is Rs. 173 crore; this covers Rs. 140 crore to be spent on large-scale industries, Rs. 27 crore on cottage and small-scale industries, and about Rs. 6 crore on mineral development and scientific and industrial research. Some of the industrial schemes in the public sector are, however, shown under other heads. For instance, the Chittaranjan locomotive factory and the all-steel coach factory are part of the development plan for railways. The net investment proposed in manufacturing industries figuring in the public development programme is Rs. 94 crore, excluding the lump sum provision of Rs. 50 crore for basic industries and transport. Investment in the private sector on expansion of industries and on modernisation and replacement is likely to be of the order of Rs. 383 crore. The total investment on industrial development in this period can thus be placed at Rs. 477 crore.

22. The development programme in the public sector provides for a new iron and steel project estimated to cost Rs. 80 crore over a period of six years from the date of commencement. The expenditure in the period of the Plan, estimated at Rs. 30 crore, is to be financed partly by Government and partly by private enterprise. Most of the industrial projects in hand in the public sector will be completed

by 1953-54. The Sindri fertiliser factory has commenced production and it is expected that it will shortly reach a daily rate of output of 1,000 tons of ammonium sulphate. With the production of 100 locomotives a year in the Chittaranjan locomotive factory by 1955 and the estimated output of 50 locomotives by the Tata Engineering and Locomotive Company, the railways will be able to secure their normal annual requirements of locomotives almost entirely from domestic production. The production of high precision machine-tools, telephone equipment, dry core cables, and news-print envisaged in the Plan will also strengthen the economy.

23. The rate of investment and, therefore, of development in the sector as a whole will depend, however, primarily on the implementation of the working plans of private industries outlined in chapter XXIX. These plans, drawn up in consultation with the representatives of the industries concerned, aim at expanding the installed capacity of several capital and producer goods industries and, in the case of consumer goods industries, primarily at fuller utilisation of existing capacity. Over the five year period, the production of heavy chemicals is expected to go up by 156,000 tons, of fertilisers by 528,600 tons, of pig-iron by 310,000 tons, of steel by 394,000 tons, and of cement by 2.1 million tons. The output of consumer goods industries is also estimated to increase considerably; the production of cloth is scheduled to go up by 1872 million yards, of sugar by 340,000 tons, of salt by 429,000 tons and of vegetable oils by 182,000 tons. The output of a number of light engineering industries is also expected to register substantial improvement. It will be the object of Government policy to assist the private sector to the extent possible in the creation and maintenance of conditions favourable to the attainment of the targets proposed.

24. As the development programme progresses and the emphasis shifts increasingly towards industrialisation, it will be necessary to expand basic industries. To some extent the nature of the demands has to be anticipated and a beginning made from the very start. The Plan, therefore, makes a lump-sum provision of Rs. 50 crore for the development of basic industries and ancillary transport. Part of this will be available for initiating a project for the manufacture of heavy electrical equipment.

25. An extensive programme for village industries, prepared primarily with the object of increasing rural employment, has been included in the Plan. The programme covers amongst others, the following industries: khadi, coir, village oil, matches, leather, hand-made paper, gur and khandhari, palm gur, woollen blankets and bee-keeping. The khadi programme is to be financed by means of a small cess on mill-made cloth. A small cess has also been proposed on mill oil for the benefit of the village oil industry. The establishment of a Khadi and Village Industries Development Board by the Central Government has been recommended. The Board will have large executive functions. It will be responsible for initiating village industry programmes in co-operation with the State Governments and other organisations engaged in the field of village industries. As part

of the programme for the textile industry, the output of the handloom industry is expected to be doubled. Finally, common production programmes have been proposed for a number of cottage and small-scale industries along with the related large-scale industries.

#### TRANSPORT AND COMMUNICATIONS

26. In the programme for Transport and Communications a little more than half of the total outlay is on railways. This outlay is designed to meet the arrears in replacement, accumulated over a long period, (particularly during the war) and to provide the railways with the minimum equipment and installations necessary to carry the additional load which will be placed on them as a result of development in other sectors of the economy. In the beginning of 1951-52, about 12 per cent of the locomotives, 28 per cent of the coaches and over 10 per cent of the wagons in use were due for renewal. Considerable lengths of the track were also in need of repair and rehabilitation. The Plan provides for an expenditure of Rs.50 crore per annum on railways in addition to Rs. 30 crore per annum estimated as required for meeting the current depreciation of railway installations and equipment. This will enable a few of the more urgent extensions to be undertaken, but the total provision for new lines over the five years is only about Rs. 20 crore and the programme for railways must, therefore, be regarded primarily as one of rehabilitation.

27. The total provision for road development in the Centre and the States together amounts to nearly Rs. 100 crore. Of this, about a quarter will be on the development of national highways, and the rest mainly on State roads. Road development is a sphere which offers considerable scope for mobilisation of local man-power and local materials. In certain States, village roads are already being developed with the active co-operation of villagers who contribute a portion of the cost of construction by way of free labour, free gifts of land or money, the balance being contributed by the State Government or District Boards. With the projects for local and intensive development visualised in the Plan, it is estimated that approximately 16,000 to 17,000 miles of village roads could be constructed through community effort within this period. This mode of development has to be extended as rapidly as possible to cover the entire country.

28. As in the case of railways, ports require attention in order to meet the immediate needs of expansion in other sectors of the economy. Apart from the fact that there is at present no reserve capacity in the five major ports of the country for handling normal increases in seaborne trade, port development is necessary to meet the following needs :

- (a) for rectifying the consequences of partition and for providing a natural outlet for the traffic previously catered for by Karachi ;
- (b) for the renovation and modernisation of equipment in the existing ports ; and

- (c) for providing facilities for the petroleum refineries which are proposed to be set up.

The Plan provides Rs. 12 crore for the construction of a new port at Kandla, Rs. 8 crore for the creation of port facilities for oil refineries, and another Rs. 12 crore as loans to port authorities for carrying out a programme of rehabilitation and modernisation.

29. The Plan also visualises development in certain relatively new lines of transport, of which shipping is the most important. The programme for the development of shipping is designed primarily to enable the coastal trade of the country to be reserved for Indian vessels and to ensure their fuller participation in overseas trade. With these objects in view, the Plan makes provision for construction of additional berths in the Visakhapatnam shipyard, which will not only make available about 100,000 G.R.T. for coastal shipping during this period, but also help to reduce the costs of construction. In addition, there is provision in the Plan for loans to shipping companies for acquiring additional tonnage for overseas trade.

30. Civil aviation is another new line of development. It has been found that, under the present conditions of traffic load and intensity of operations, the existing air transport companies cannot work on an economic basis and that, to ensure such working, they should merge into a single unit. The Plan provides a sum of Rs. 9.5 crore for the payment of compensation to the existing air companies, and for the purchase of new aircraft.

#### SOCIAL SERVICE AND REHABILITATION

31. The Plan provides for a total expenditure of Rs. 340 crore on social services, of which Rs. 156 crore are for education, Rs. 100 crore for medical and health services, Rs. 49 crore for housing, Rs. 29 crore for backward classes and Rs. 7 crore for labour and labour welfare. The allotment for education includes a sum of Rs. 4 crore for assistance to voluntary social welfare organisations so that their work can be expanded and dovetailed into the national development programme.

32. At the Centre there is a provision of Rs. 20 crore for further development in the field of primary and secondary education. The average annual expenditure proposed under education represents an increase of nearly 40 per cent over the development expenditure in 1949-50. This would lead to a certain amount of expansion of educational facilities in the States and the number of pupils going to primary, junior basic, secondary and technical and vocational (other than industrial) schools is expected to increase by 26, 81, 31, and 41 per cent respectively, as compared with 1950-51.

33. In the sphere of health, the Centre has a programme for malaria control which will be co-ordinated with the programmes of the States and is intended to protect about 200 million people in rural



areas through the spraying of insecticides. The Plan also provides for two D.D.T. plants in order to ensure a sufficient supply of D.D.T. at a reduced cost. The State Plans provide for an expenditure on public health of Rs. 39 crore ; this expenditure, which will be mainly on provision of water supply and drainage, will involve a doubling of the existing rate of expenditure under this head.

34. With the introduction of the provident fund scheme for industrial workers in six industries, it has been possible to frame a programme for the construction of more than 150,000 houses for industrial workers at a cost of about Rs. 38.5 crore. In addition, some States have their own housing schemes for low income groups. The total cost of the housing programme is about Rs. 49 crore.

35. The Plan has also a programme of amelioration for backward classes. In addition to the provision of Rs. 29 crore, shown in the Plan, the Central Government is expected to provide in the form of statutory grants a further sum of about Rs. 9 crore for the development of areas inhabited by scheduled tribes.

36. The programme for the rehabilitation of displaced persons, for which a provision of Rs. 85 crore has been made in the Plan, covers a period of three years, ending 1953-54. The problem of migrants across the eastern border is still in a somewhat fluid state. For some time to come the problem of relief for those who have newly arrived may continue to be a major concern of the Government.

#### ASSESSMENT OF THE PLAN IN TERMS OF INCOME AND EMPLOYMENT

37. An assessment of the Plan in terms of national income, consumption and employment presents various difficulties. There are large gaps in the information available about certain sectors of the economy. National income statistics are still in their infancy. We also have insufficient knowledge of the relationships between different sectors of the economy and how they interact on each other. In a period of development these are likely to be of great significance. However, rough estimates put the national income of India at Rs. 9,000 crore in 1950-51. As a result of the increases in production expected to materialise by the end of the Plan, it is expected to rise to Rs. 10,000 crore, that is by 11 per cent, and may rise still further if community development projects and other schemes in the Plan designed to stimulate local initiative succeed in evoking community effort on a large scale. Out of the increases in national income, about 20 per cent will have to be reinvested year after year in order to sustain the development programme at the rate envisaged in the Plan. The aggregate consumption expenditure will, therefore, rise at a somewhat lower rate than the national income. Although the Plan will meet in this period only the most urgent needs of the economy, it will have made a substantial addition to the production potential of the country.

38. As regards employment, the contribution that the Plan will make will be two-fold : firstly, in the process of stepping up the rate

of investment, it will create more employment for those engaged in construction activity : and, secondly, by building up capital at key points in the system, it will enable a growing number of people to be absorbed, at the next stage, into the productive system. The opening of fresh employment opportunities in the non-agricultural sector will at first be slow. In the field of large-scale industry, the emphasis of the Plan is at this stage necessarily on producer goods industries which provide comparatively little employment in relation to the capital outlay which they entail. But as the tempo of development quickens, it will be possible to absorb increasingly large numbers into industry and into ancillary occupations, such as transport and the service industries and so correct the present over-crowding and under-employment in the agricultural sector.

**PART II**  
**ADMINISTRATION**  
**AND**  
**PUBLIC CO-OPERATION**

## CHAPTER V

### INTRODUCTION

It is the task of the public administration to carry out in co-operation with the people the programme embodied in the Plan. This is a larger and more complex task than it has had to undertake in the past. From the maintenance of law and order and the collection of revenue, the emphasis now shifts to the development of human and material resources and the elimination of poverty and want.

2. The objectives of development are to be fulfilled within a democratic framework. One important problem which arises is the relationship between the political leadership which forms the government and the public services which carry on the administration. They both have a vital contribution to make and neither can fulfil its part without the active help and trust of the other.

3. When a political party forms a government, it has to strive to carry with it as large a proportion of the people as possible. The principal task of the political executive controlling the government becomes one of assessing what the public desires, what its essential needs are, and how they can be met. In other words its sphere is one of policy and it should, therefore, concern itself primarily with principles and policies in each field of activity. But it also has to ensure that the principles and policies which it lays down are faithfully followed and carried into effect.

4. In the implementation of policy, there has to be a devolution of power to a large number of public servants who, as a body, constitute the administration. The higher grades of public servants, owing to their long experience and their ability to appreciate the implications of different programmes, may have a considerable share in the shaping of policy. Their advice is always available to the government and they should be encouraged, as indeed it is their duty, to tender their advice without fear or favour. But even though their views may influence decisions, their main role is to carry out the policies approved by the government. This relationship in a parliamentary democracy between the political executive and the higher ranks of the administration calls for co-operative endeavour and mutual understanding of the respective spheres of responsibility.

5. In the management of public affairs, failures in policy and in administration may be equally unfortunate. In some situations policy may be more fundamental, in others administration. In relation to national planning the formulation of correct policy has the most crucial significance. Since trained man-power is limited, it is necessary that the relative importance of different objectives and the ability of the government to achieve them should be carefully

considered in determining priorities. In the fields selected, it is important to remember that, unless a policy which has been decided upon is pursued in a sustained manner, the administration can seldom be satisfactory. It is also important to ensure that individual economic programmes and proposals are carefully related to the requirements of national planning and that the national interest always prevails over sectional and local claims.

6. The decline in the standards of administration which has taken place in recent years points to the urgent need for administrative reforms. To some extent the fall in efficiency is owing to the fact that the strength of experienced personnel in the public services has everywhere been depleted, while the work falling on the administration has considerably increased. The growth in the responsibilities of government and in the expectations held by the people do, however, demand a rapid improvement in the quality of the administration and in the service which it renders to the community. Each administrative authority under the government should hold itself responsible for bringing about such improvements as are needed in its organisation and performance. The higher ranks of the public service have a particular obligation to help establish a structure of administration and a tradition of service necessary for fulfilling the national programme and for providing a sound basis for future advance. But the ministers too have an important part to play and the higher ranks of the services are entitled to receive from them confidence and support in reforming and reorganising the administration.

7. In the two chapters that follow, the principal problems relating to the improvement and strengthening of the administration are considered. These may be divided broadly into two groups. Firstly, there are problems bearing on the entire field of public administration, such as the achievement of high levels of efficiency, economy and integrity and equipping the government with a more adequate machinery for discharging its enlarged responsibilities. Secondly, there are problems bearing directly upon the administration of development programmes in the district where they directly impinge on the mass of the people. In this field it is necessary to consider such questions as the improvement of the machinery of general administration, the establishment of an appropriate agency of development at the village level and the linking up of self-governing institutions with State agencies.

8. Even if the government does all that lies in its power to improve the administration, the success of planning under democratic conditions will still depend on the measure in which the co-operation of the people is enlisted in formulating and implementing various programmes. As the administration responds to the needs and wishes of the public, the public may be expected to react with a positive desire to assist the administration. The directions in which such co-operation may be developed are considered in a later chapter.

## CHAPTER VI

### REFORM OF PUBLIC ADMINISTRATION

The principal objectives to be achieved in public administration are integrity, efficiency, economy and public co-operation. These aims are closely inter-related and inter-dependent. Without a high level of integrity, an organisation cannot be efficient or render satisfactory service to the community. It is natural for an organisation which is efficient and is guided by a sense of public interest to receive the co-operation of the public. Where there is public co-operation, the task of the administration is rendered easier.

#### INTEGRITY

2. Integrity in public affairs and administration is essential and there must be an insistence on it in every branch of public activity. The influence of corruption is insidious. It not only inflicts wrongs, but it undermines the confidence of the public in the administration. There has, therefore, to be a continuous war against every species of corruption within the administration as well as in public life.

3. The opportunity for corruption in various forms may arise almost anywhere in the administration, though it is greater in some fields than others. In recent years the shortage of essential supplies, which has occurred from time to time, has led to an increase of corrupt practices. The co-operation of the public is very necessary in order to eradicate this evil.

4. Some measures to ensure standards of public life to prevent their gross abuse appear necessary in the interest of democratic government itself; and there is a need to devise some machinery for enquiring into cases of misconduct on the part of persons who hold political office. Where there is *prima facie* a case for an enquiry, such an enquiry should be held in order to find out and establish facts. If the facts ascertained point to a case of serious misconduct, other steps will follow. It may be necessary to have legislation for this purpose. Action under such legislation should only be taken at the instance of a responsible authority, that is, the Central Government or a State Government.

5. The law relating to offences involving corruption has recently been strengthened. The Prevention of Corruption Act of 1947, provides inter alia for cases in which a public servant is found to have come into possession of pecuniary resources which he cannot account for satisfactorily. It does not, however, provide for those cases in which a public servant's near relations may have been found to have become suddenly rich. The possibility of removing this

lacuna should be studied. Similarly, it would be useful to consider whether public servants should be required to furnish a return each year concerning movable assets acquired by them or their near relations during the preceding year. The present practice in this respect is confined to returns of immovable property.

6. Certain other suggestions have been made for dealing with the problem of corruption in government offices. It has been proposed, for instance, that the reputation of a public servant may be regarded as almost conclusive evidence of his integrity. It is true that the integrity of an honest public servant is seldom called in question, but instances to the contrary are known to have occurred; indeed, irresponsible allegations are made all too frequently. To rely solely on reputation would be to risk demoralising the public services. On the other hand, as a matter of ordinary administrative practice, an official who does not have a reputation for honesty should not be placed in a position in which there is considerable need for discretion.

7. The proposal has also been made that where specific allegations of corruption are made in the press against an individual public servant by name, he should be expected to clear his name by taking the matter to the courts. His legal expenses could be sanctioned on the understanding that if he lost his case, he would have to reimburse the government and if damages were awarded to him the cost would be the first charge on them. We consider that in such cases the first step should be a preliminary and confidential enquiry by a senior officer. On his report it could be determined whether the circumstances justified prosecution by the government or merely permission or even a direction to an officer to clear his name in a court of law. If the second course is decided upon, the suggestion mentioned above about legal expenses could be adopted.

8. In recent years, the most conspicuous fields of corruption have perhaps been those in which businessmen had to apply for permits and licences. Supervision and vigilance within the administration were inadequate and illegitimate gains were undoubtedly made. Though less is heard on the subject at present, the need for vigilance and drastic measures continues. It is implicit in the unwritten code of conduct for those who hold responsible positions, whether political or official, that the public should always have absolute confidence in their disinterestedness and impartiality. In their social relations and all their dealings, they must, therefore, be especially careful to see that there is no ground or occasion to suggest that some individuals have greater access to or influence with them than others. The recent growth of the practice among business firms of employing relations or friends of influential persons as "contact men" needs to be discouraged.

9. While all these measures have their use, the main check on corruption is to be found in insisting on a high level of efficiency in every branch of the administration. The pace is necessarily set by the men at the top. Heads of offices and departments by their own

example and by their alertness and vigilance can have a considerable effect on the conduct of their subordinates. In this connection the following points deserve mention :—

- (1) Heads of departments should keep under constant review possible openings for corruption which current policies and procedures might provide and should see that individual claims or requests are dealt with to the maximum extent possible through clearly stated and well-understood rules or principles.
- (2) One of the most important sources of corruption is delay in the disposal of cases. By efficient administration delays can be very greatly reduced.
- (3) At all levels of the administration the choice of officials for posts which offer special scope for corruption must be made with great care.
- (4) Laxity on the part of government employees is often due to the fact that good and honest work is not sufficiently recognised and rewarded and inefficiency and dishonesty are not sufficiently penalised. Devising means to encourage the honest should, therefore, be a matter of special concern to all those holding positions of responsibility in the public administration.

#### EFFICIENCY

10. The present state of administrative efficiency has been described in the following words by an experienced observer :—

“The machine though sound in essentials and capable after improvement of undertaking arduous tasks is at the present moment run down. The work allotted to it has increased, the quality of its output has deteriorated. The parts removed from it have, in many instances, been replaced by those of inferior workmanship. The edge has been taken off through strain and, occasionally rough treatment, of many of those that remain. For reasons, some within and many beyond the machine's control, efficiency is undoubtedly impaired. All in all, there is considerable room for improvement.”

11. Both in the Central Government and in the States a small number of public servants carry a heavy burden of responsibility without adequate assistance. Much of their time has to be given to work which was formerly done at lower levels. Moreover, during recent years, mainly because new responsibilities have had to be assumed or new policies evolved, secretariat departments have had to take up an increasing amount of original work. We suggest that the Central Government should undertake a systematic review of the new functions which secretariat offices have accepted during recent years and consider whether some of them, at any rate, could



not now be made over to subordinate authorities. A similar review might be useful in the States. Where separate departments or other executive organisations exist, it is essential that heads of departments or of attached and subordinate offices should be able to function with reasonable freedom and initiative and, at the same time, with the knowledge that they have the Ministry's confidence.

#### PERSONNEL

12. The steps which have been already taken for the organisation of the Indian Administrative Service provide for trained administrative personnel for manning responsible posts at the Centre and in the States. As the functions of the government expand, there are three directions in which it will be necessary to supplement the existing arrangements :

- (1) for doing work which broadly concerns economic policy and administration ;
- (2) for managing industrial enterprises belonging to the Central or State Governments ; and
- (3) for work connected with development, land reform and food administration.

13. To obtain personnel for the first purpose three proposals merit consideration. In the first place, individuals with high academic qualifications or special experience in the economic field should be drawn into the administrative service at age limits somewhat above those at which initial recruitment is made through competitive examination. Officers selected in this manner should be put through the necessary administrative training. Secondly, a proportion of the junior officers of the Administrative Service should be selected at an early stage in their careers and given intensive training in the economic field with suitable business houses and, if necessary, abroad. Thirdly, the practice which already exists, could be further developed of obtaining for responsible senior positions individuals with special experience and knowledge from other fields such as universities, banking and finance and industry.

For securing personnel for the second purpose proposals for constituting an industrial management cadre are at present under consideration. Similarly, the question of finding personnel for economic and statistical intelligence is under consideration and proposals are expected to be formulated in the near future.

The problem of obtaining personnel in adequate numbers for responsibilities connected with development programmes, land reform and food administration in the States may also call for supplementary recruitment, depending upon the situation in individual States. In the main, however, these responsibilities have to be undertaken by officers with experience of revenue and development work in the district.

14. The methods of recruiting personnel have an obvious bearing on administrative efficiency. Recruitment to permanent posts is now ordinarily made by a Public Service Commission, but there has been no objective assessment yet for the country as a whole of the way in which these arrangements have worked. It is apparent that there is need for greater contact and exchange of opinion between the Public Service Commissions and the departments on whose behalf recruitment is undertaken, and that a co-ordinated endeavour should be made to effect a reduction in the temporary and *ad hoc* recruitment which is still common. It would also be useful if the observations of Public Service Commissions about the quality of candidates interviewed by them were communicated to universities and other educational authorities and linked with programmes of improvement in the educational field.

15. Next to recruitment comes training. In general in all branches of administration it is necessary to provide for the training of personnel at the commencement of service as well as at appropriate intervals in later years. For recruits to the Indian Administrative Service and the State Administrative Services a thorough grounding in revenue and development administration is of the highest importance. The training of these officers should be entrusted to experienced Collectors. During recent years, this subject has not received as much attention as it deserves which makes it all the more necessary to ensure that the training, during probation, of new recruits to the Indian Administrative Service should be as well organised as possible.

16. Probationers selected for the Indian Administrative Service are given their initial training at the Indian Administrative Service Training School at Delhi. The Establishment Officer of the Government of India has hitherto served as the head of this institution in addition to his own duties. In the early years this combination of duties had some advantage, but in the future it is necessary that the Director or Principal of this institution should be a whole-time officer. It might be possible for the Central Government to assign to him an official responsibility for seeing that all the States have proper training programmes for their administrative services, which would require that he should tour the different States from time to time. The school could also be organised as a centre for refresher courses for senior administrative officers from the States and from the Central Government at stated intervals in their service and as a centre of studies in public administration generally.

17. In connection with its secretariat reorganisation scheme, certain arrangements for the training of secretariat staff have already been introduced in the Central Government. There are certain directions in which the scope for training should be widened. For instance, for officers concerned with the administration of economic activities, there should be a regular scheme for training in a well-established business organisation. In return, selected employees of business houses may be given opportunity to work in the government and gain first-hand experience of the functioning of government machinery. This will establish a kind of two-way traffic between

government and business and industry and may even bring to the knowledge of government potential recruits for the public service, especially for the administration of economic and industrial programmes. The idea could also be extended to those who teach economics and undertake research on economic problems in the universities. Finally, it is necessary to recognise that in the future, only a small number of the recruits to the higher services will have had the opportunity of training abroad before they join service. Full advantage should, therefore, be taken of the various technical assistance schemes which are now available for providing opportunities for specialised training to selected officials.

### METHODS

18. However carefully personnel may be selected and trained, unless the methods of work employed are sound, there is much loss of efficiency. Careful study and review of organisation and methods can make much practical contribution to administrative practice. We recommend that in the Central Government the Ministry of Home Affairs should set up an organisation and methods division under a Director who should work in close co-operation with the personnel sections of the different Ministries and, in particular, with the Ministry of Finance. In the States also, units for the study of organisation and methods are needed. Among the matters requiring early attention in the field of methods are the simplification of office procedures, improvement of the system of records maintained in the Central Ministries and the movement of files, and procedures for efficiency audits in organisations of different kinds.

19. Closely associated with the question of methods are the arrangements in government offices for supervision and inspection. Senior officers can do much to improve efficiency by spending a portion of their time in inspecting their offices from time to time. The inspections need not always be formal; indeed surprise checks have a special value. The causes of delay would frequently come to light and be remedied if senior officers and even ministers occasionally examined files from the point of view of the time taken before conclusions are reached or the necessary action taken. In many departments there is not enough contact between officers and the lower grade personnel. Lack of the necessary human relations between different grades of public employees leads, in turn, to a certain neglect of the welfare needs of lower grade staff.

### FINANCIAL CONTROL AND ECONOMY

20. There are three matters bearing on the efficiency of the administration to which it may be useful to refer. These are: (a) the present system of financial control, (b) the present arrangements within the administration for promoting good work and discouraging bad work and (c) the need for careful assessment of results.

21. Financial procedures which, on the one hand, secure adequate control and, on the other, avoid too great an interference

with the initiative of the administrative authorities in carrying out their own programmes, are essential to the efficient execution of the Five Year Plan. The subject, however, requires careful consideration and specific remedies can only be proposed after detailed study with reference to local procedures and problems. It is desirable that both in the Central Government and in the States the existing arrangements should be reviewed by the finance departments in co-operation with the planning authorities.

22. In every government department or organisation there is always some room for economy. Economy is a continuous process and from time to time systematic reviews of expenditure incurred in any office should be undertaken. Within any organisation, perhaps the principal source of wasteful expenditure lies in the failure to plan carefully and in detail in advance of execution. Far too many projects tend to receive acceptance in principle or in respect of their preliminary stages before they are in fact ripe for implementation. Financial control should concern itself not only with the minutiae of expenditure, but even more with the scheme of priorities on which a project is based and with the appraisal of the stage at which a project may be regarded as having been adequately investigated to justify commencement of execution. In relation to large projects, in particular, the more glaring mistakes are frequently made in the beginning rather than in the course of execution when, despite attempts to control and regulate, it may become too late to withdraw.

#### INCENTIVES

23. It has been observed that during the past few years, the proportion of those who do their work in a routine way, without desire to do better, has increased. To some extent this may have been due to the uncertainty of employment which was felt by numerous temporary employees. But it is also true that the arrangements for assessing the work of an individual official and for encouraging him, if his work is good, and warning or punishing him, if his work is bad, are unsatisfactory. Reports on the work of individual officials have tended to become less specific than before and the easy course of neither blaming nor praising tends frequently to be adopted and emphasises the need for closer supervision, to which attention has already been drawn. It also appears that sufficient notice has not always been taken of defaults of duty and there has been too much toleration of poor performance. This has tended to blur the distinction in terms of reward and punishment between those who are eager and painstaking and those who are indolent and careless. Accurate reporting on individuals is possible when there is systematic attention to the work done by them.

24. While considerations of seniority are important, in certain cadres there should be scope for promotion more rapid and more conspicuous than the normal rules provide for. This principle is already being applied in some cases. The possibility of extending the practice should be explored, so that in each field a person who

has the requisite ability can feel assured that if he does outstanding work, the system itself provides adequately for promotion to higher levels of responsibility.

25. With increased investment on development, much more attention to the systematic evaluation of results from public expenditure is now called for than was necessary in the past. Such evaluation should become a normal administrative practice in all branches of public activity. With the object of developing the techniques of evaluation a beginning has now been made with the establishment of an independent evaluation organisation under the Planning Commission for community projects and other intensive area development programmes.

#### STRENGTHENING ADMINISTRATION IN THE STATES

26. The implementation of the Five Year Plan calls for well-organised development services in the States. Some States are not at all well placed in this respect, in particular, those which have been recently constituted or are small in size and resources. To a limited extent, the problem may be met by means of joint cadres with neighbouring States or by transfers on deputation from other States, but other steps are also necessary. For instance, in consultation with the States which may desire to participate, the Central Government should investigate the possibility of establishing Central development cadres in fields of technical development, such as agriculture, engineering, forests and public health.

27. Since the Central Government obtains its own higher personnel mainly from the States, the manner in which it selects officers required at the Centre has a considerable bearing on morale and efficiency among officers in the States. In this connection the accepted principle that service at the Centre should ordinarily be in the nature of a tenure assignment should be adhered to and the selection of officers for service at the Centre should be based as far as possible on their record in the States. In the case of technical personnel, most of whom the Central Government have to obtain on deputation from State Governments, it may be desirable to set up regular selection boards.

#### ADMINISTRATION OF PUBLIC ENTERPRISES

28. Except for the ordnance factories and railways, industrial undertakings owned and managed on behalf of the State are a comparatively new development. The setting up of a Ministry of Production in the Central Government a few months ago is proof of the recognition of the growing importance of State industrial undertakings in the economic development of the country, especially in the field of basic industries. The industrial undertakings of the Central Government have been organised as joint stock companies, each with its own board of directors. The boards include representatives of the Government as well as some representatives drawn from

business and industry. Sufficient experience has not yet been gained to permit any conclusions regarding the working of different undertakings or the results of the present pattern of organisation and management. As experience develops and new problems arise further changes are to be expected. Since each industrial enterprise presents problems peculiar to itself, it is necessary to have separate boards of directors for different undertakings. There is also need for a central board which could advise the Government on questions of general importance, such as personnel for industrial management, financial and accounting problems, price policies, investment programmes, etc. Since the steady expansion of the public sector is inherent in the development which is now being planned, the Commission recommends the early establishment of such a board.

## CHAPTER VII

### ADMINISTRATION OF DISTRICT DEVELOPMENT PROGRAMMES

#### EFFECT OF RECENT CHANGES

The structure of administration developed during the past century was based upon the district as the principal unit with the district officer as the government's principal representative in touch with the people. While he held a co-ordinating responsibility for the activities of all departmental agencies within the district, his primary duties were the maintenance of law and order and the collection of land revenue. Recent developments have, however, altered his position and emphasised the need for giving a fresh orientation to district administration. The maintenance of law and order must always be an important obligation, but increasingly district administration derives its significance from its role in developing the resources and raising the standard of living of the people. It is, therefore, necessary to equip it for its present tasks. The primary emphasis has to be on the implementation of development programmes with the active support and co-operation of the people. Reorganisation of district administration has to provide for:—

- (1) strengthening and improving the machinery of general administration ;
- (2) establishment of an appropriate agency for development at the village level ;
- (3) integration of the activities of various development departments in the district and the provision of a common extension organisation ;
- (4) linking up, in relation to all development work, of local self-governing institutions with the administrative agencies of the State Government ; and
- (5) regional co-ordination and supervision of district development programmes.

#### STRENGTHENING THE GENERAL ADMINISTRATION

2. The quality of the general administration has a bearing on the lives of large numbers of persons. In the measure in which the elementary obligations of government are discharged efficiently and justly, the government becomes more capable of undertaking economic and social development and of securing the willing co-operation and support of the people. In the past few years work in the district has expanded considerably and has also become more complex than before. The implementation of development programmes will increase the district officer's work and responsibility

still further. It is, therefore, important to give him the assistance of a senior officer to enable him to devote attention to development. The following further suggestions are made for strengthening the district administration.

- (1) In the permanently settled and jagirdari areas, the implementation of development programmes as well as of measures of land reform is frequently impeded for want of village revenue officials. It is, therefore, a task of the first importance to recruit and train personnel in these areas for village revenue establishments. Many States are already taking steps in this direction, but these need greater emphasis and the process has to be hastened.
- (2) State Governments might review the size of their existing districts from the point of view of the efficient implementation of development programmes. Where no change in the size of the district is considered necessary, the possibility of establishing more subdivisions may be examined.
- (3) All district officials should, at an early stage in their careers, receive special training in rural development work. In other words, just as members of the Indian Administrative Service or the State administrative services have to learn the work of the *patwari*, the circle revenue officer and the *tahsildar* in the course of their training, they should also learn the work of the village level worker and of officers in charge of larger development units. Such training will enable the general administrative machinery of government in the district to assume the role in development work which is envisaged under the Five Year Plan.
- (4) Since a major share of the responsibility for detailed administrative work in the district falls on members of the State administrative services, their training should receive special attention.

#### VILLAGE AGENCY FOR DEVELOPMENT

3. For many decades the village has been the primary unit for revenue and police administration, but as a social and economic organisation, it became weaker under British rule. As settled conditions developed, the village community became increasingly dependent on the administration and less able to manage its own affairs. Even in work undertaken by development departments the approach was nearly always to the individual, not to the village community so that thirty years of development activity have influenced only a fraction of the population.

4. There is great need in the village today for an organisation, representing the community as a whole, which can assume responsi-



lity and provide the leadership for the development of resources. This role can be filled by the village panchayat. Legislation for setting up village panchayats exists in most States and seeks to translate into action the directive principle in the Constitution that requires steps to be taken to organise village panchayats and endow them with such powers and authority as might be necessary to enable them to function as units of self-government. In the practical implementation of this principle some States have made considerable progress, but in the country as a whole much remains to be done. Each State should have a programme for establishing over a period of years panchayats for villages or groups of villages ; and panchayat legislation should be strengthened, when necessary, to enable panchayats to assume responsibility for such functions as :—

- (1) framing programmes of production for the village ;
- (2) framing budgets of requirements for supplies and finance needed for carrying out the programmes ;
- (3) acting as the channel through which government's assistance, other than assistance which is given through agencies like co-operatives, reaches the village ;
- (4) securing minimum standards of cultivation to be observed in the village with a view to increasing production ;
- (5) bringing waste land under cultivation ;
- (6) arranging for the cultivation of land not cultivated or managed by the owners ;
- (7) organising voluntary labour for community works ;
- (8) making arrangements for co-operative management of land and other resources in the village according to the terms of the prevailing land management legislation ; and
- (9) assisting in the implementation of land reform measures in the village.

5. The process of election by which panchayats are constituted may not always throw up a sufficient number of persons with qualities most needed in village reconstruction, such as good farmers engaged in improving agricultural practice, enthusiastic workers of the co-operative movement and persons whose main interest lies in constructive social work. For village development programmes there should be provision for a small number of additional members to be appointed by the State Government or on its behalf, so that the panchayats enlarged in this manner function as village development agencies largely on the basis of consent and constructive leadership within the village. It is hoped that this village agency will gradually be able to draw up production plans for the village as a whole on the basis of programmes accepted by individual farmers and local co-operatives, and will thus become the effective base for planning on a national scale in the field of agriculture and rural development. These suggestions have been made in general terms because the

organisation which will serve best at the village level is necessarily a matter of local adaptation.

#### RURAL EXTENSION AND THE INTEGRATION OF DEVELOPMENT ACTIVITIES

6. The need for a rural extension service is now widely appreciated. At present a number of departments of the government endeavour to reach rural areas through their field staffs, but these are usually small in number and are not well equipped in practical knowledge. The villager finds himself approached through a number of channels on behalf of the government and receives advice which may be contradictory or ill-coordinated or even lacking in value for his day-to-day problems. Intensive work on projects in Uttar Pradesh, Madras, Bombay and elsewhere has confirmed the view that village level workers and a common extension machinery on behalf of the principal development departments of government are vital to the success of rural development programmes. The Grow More Food Enquiry Committee has recommended that within a period of ten years a rural extension organisation should be built up throughout the country. Their proposal is that at the village level there should be one worker for five to ten villages who will be "the joint agent for all development activities and who will convey to the farmer the lessons of research and to the experts the difficulties of the farmer and arrange the supplies of service needed by the farmer including rendering of first aid for animal and plant diseases".

7. Each State has to work out a pattern for its extension organisation which is suited to its own needs and conditions. The essential points which need to be kept in view in making the detailed administrative arrangements are:—

- (1) a multi-purpose village worker who will be the agent of all the development departments and represent them in the villages ;
- (2) at the level of the development block (about 100 villages) development officers working as a team with the extension officer, who may be the Sub-collector or, where the sub-divisional system is not developed, another officer closely associated with the district administration ; and
- (3) the position of the Collector as the head of the extension movement in the district, with the district officers of the development departments working with him as a team.

The heavy responsibilities which will be placed on the Collector underline the importance of giving him adequate assistance to enable him to devote the closest attention to his duties as the head of the development activities in the district.

#### ROLE OF LOCAL BODIES IN DEVELOPMENT PROGRAMMES

8. The past decade has been on the whole a period of retarded development in the field of local self-government. Generally speaking,

during these years local bodies have not expanded their resources to any great extent, and have found it difficult even to maintain the existing level of services. In the post-war development programmes no place was found for local bodies. In the Five Year Plan some of the more important programmes of local bodies are expected to receive special assistance, but in the main their programmes will have to be treated as part of district and State programmes. Indeed at the stage of development, which local self-governing institutions have reached, programmes for local development may be best conceived as joint enterprises to be carried out in close co-operation by the agencies of the State Government and the representatives of the people elected to local self-governing institutions. The general direction of policy should be to encourage them and assist them in assuming responsibility for as large a portion of the administrative and social services within their areas as may be possible. It may also be necessary to work out suitable arrangements for linking local self-governing bodies at different levels with one another, for instance, village panchayats with district or sub-divisional local boards. While the process that we envisage develops, close co-operation in the field of development between the State Governments and local self-governing institutions could be established in directions such as the following:—

- (1) programmes undertaken by local bodies should be carefully integrated with State programmes ;
- (2) as far as may be practicable, State Governments should use the agency of local bodies for carrying out their social service programmes. That is to say, if the choice lies between a State Government establishing a primary school or a veterinary hospital with its own resources and of assisting a local body in initiating such a development, on principle, the latter course should be preferred ;
- (3) institutions run by local bodies and the services provided by them should be inspected, supervised and guided by the technical and administrative personnel of the State Government in the same way as the State Government's own institutions and services ;
- (4) for carrying out development programmes in any area, it is essential to associate a number of non-officials. The nucleus of non-official representation should be provided by persons elected to local bodies ; and
- (5) wherever sub-divisions exist or are created in the future, the establishment of sub-divisional local boards may be considered.

9. It is of some importance that members of State Legislatures and of Parliament should be closely associated in framing and working out local development programmes. They are in a position, on the one hand, to bring their knowledge of local needs and problems to bear on the formulation and examination of State and national policy and, on the other, to carry into local programmes the larger perspective and the conception of priorities against which policies have to be

worked out. This object could be achieved by appointing members of State legislatures and of Parliament, irrespective of their party affiliation, to non-official development committees which are set up in their areas.

#### REGIONAL CO-ORDINATION AND SUPERVISION OF DISTRICT PROGRAMMES

10. For securing regional co-ordination and for the supervision of district work there is need for an authority between the secretariat departments and the district officer. Whether such an officer is located in the region, as Commissioners formerly were, or at the headquarters of the State Government, as members of a Board of Revenue are, is a matter which has to be considered locally and no set pattern can be proposed. He should, however, be free from detailed administrative work and able to give personal attention to all aspects of administration and development in his area. His presence can be of great advantage in dealing with special problems, to which the hard-pressed district officer cannot give sufficient time and thought, and in handling special situations. The need for such an arrangement is emphasised by the fact that many Collectors are relatively new to their responsibilities and if they have a measure of personal guidance at this stage, they will not only secure better results during the next few years, but will also be able to give more adequate training to the junior officers who will follow them.

#### SOCIAL SERVICE AGENCIES AND DISTRICT ADMINISTRATION

11. In the past social service agencies have played scarcely any part in administration. But there is hardly any field of activity concerning district administration in which better results cannot be secured by taking the maximum advantage of the co-operation and civic spirit of individual non-officials and of non-official agencies. In particular, social service agencies can provide workers who will help village panchayats and co-operative societies in discharging their manifold functions. At present a good deal of potential idealism of this kind runs to waste for want of opportunity. When there are suitable social service organisations willing to train workers and take up programmes, their help could be availed of in specified areas. Suitable financial assistance could be afforded to such organisations to enable them to meet the expenses of training and to pay their workers. Such co-operation with social service organisations may prove valuable in developing non-official leadership, especially in the rural areas.

## CHAPTER VIII

### PUBLIC CO-OPERATION IN NATIONAL DEVELOPMENT

#### DEMOCRATIC PLANNING

A democracy working for social ends has to base itself on the willing assent of the people and not the coercive power of the State. This leads to the application of the principle of co-operation in all phases of social activity and in all the functions which bring together individuals for the pursuit of common purposes. The field of public co-operation becomes in fact co-terminous with that of national development.

2. The concept of planning has hitherto been associated largely with conditions in which a group has gathered in its hands all the power to control and regiment the life of a community and to command and direct its material and man-power resources. What is there in a democracy to take the place of this unified direction? Considering that democracy works on the basis of fragmented authority and of parties with uncertain tenures, attempting to reconcile all kinds of contrary interests and purposes, no plan, it might appear, can proceed very far. There is, however, crystallizing among those who believe in democracy a common social outlook which interprets progress in terms of social justice and of a social order in which economic disparities will be greatly reduced, equal opportunities afforded to all, and no privilege or interest sustained, except in so far as it subserves a larger social purpose. This can furnish the ingredients of a national Plan as distinct from party programmes and, indeed, can greatly enhance social cohesion within the community. Certain elements may not agree with the Plan and the aspirations of a section may far exceed the level of achievement set as the target of the Plan for the first few years. But, if the direction of advance is in line with the expectations of the bulk of the people and the rate of progress is not too slow, the essential prerequisite for winning public co-operation will have been secured.

#### REACHING THE PEOPLE

3. A wide-spread understanding of the Plan is an essential stage in its fulfilment. It will enable each person to relate his or her role to the larger purposes of the nation as a whole and to see how progress in different directions is inter-related and effort in one field strengthens as well as demands effort in other fields. The Plan has, therefore, to be carried into every home in the language and symbols of the people. All available methods of communication have to be developed and the people approached through the written and the spoken word no less than through the radio, film, song and drama. For this purpose it is essential to organise a programme of co-operative action

in which the press, writers and artists, universities and educational institutions down to the village school, and associations representing professional and other interests may work hand in hand with the elected representatives of the people and with public servants throughout the country.

4. While a general appreciation of national aims and programmes is essential, the average citizen is able to appreciate more vividly and to contribute far more to work that touches his life and well-being closely. It is, therefore, of the highest importance that the process of breaking up the National and State Plans into local units based on district, town and village, which has already been begun, should be completed speedily. The Plan can then become a focus of constructive activity in every part of the country and can be further strengthened and developed by the effort of the people themselves. Thus, the people become partners in the Plan, and are associated closely with its formulation as well as its implementation from stage to stage.

#### ROLE OF THE ADMINISTRATION

5. It is in the nature of planned national development that the initiative and responsibility for enlisting the association and co-operation of the people should rest with the government and, in particular, with the public services. The quality of the administration is, therefore, of the utmost consequence. If at the level at which the citizen meets the administration, he encounters corruption, delay and inefficiency and if he finds no sign of effective steps being taken against the anti-social elements who exploit the community and benefit themselves at its expense, it will become difficult to evoke the people's enthusiasm and to secure their active support. On account of circumstances which go back to the past, there is yet insufficient realisation of the identity of aims of the people and the administration. This fact needs to be plainly recognised as an obstacle to be overcome. Efficiency and integrity in the administration are, of course, of the highest importance; but the relation between officials at different levels and the general public also have a great deal of bearing on the response of the public. It is an essential rule in the code of a public servant, whatever his rank, to extend to every citizen courtesy and consideration and to inspire in him the confidence that, so far as the law and the administration are concerned, all citizens have equal rights and equal claims. By approaching the people as comrades in the same cause, disclaiming privilege and status and showing themselves eager to learn and to help, those engaged in administration can make a notable contribution towards creating the conditions in which public co-operation can grow.

#### PUBLIC PARTICIPATION IN PROGRAMMES

6. The aims of the Five Year Plan are wider than the targets proposed in it. It is, therefore, essential that conditions should be created to enable individuals and groups to make their maximum contribution as citizens in advancing the objectives of the

Plan and in framing and fulfilling programmes. The most important means of enlarging public co-operation in the rural sector is village community development achieved through panchayats and co-operatives. Proposals for assisting farmers with finance and supplies for promoting social welfare, and for removing social and economic disparities also depend upon the progress achieved in building up these institutions, a task which itself calls for large numbers of extension workers as well as non-official social workers. As regards irrigation projects, on the execution of which the successful fulfilment of the Five Year Plan depends to no small extent, the most promising development would be for villages to form labour co-operatives and undertake the construction of new canals in their neighbourhood.

7. The growth of village industries, which is essential for the relief of rural unemployment, also hinges on the progress of co-operative organisations. In the field of social services it is certain that without a great deal of active support from the community, the State can fulfil only a small part of its responsibility; and if the development of social welfare is left to the resources of the State alone large gaps must remain. Much human suffering has, therefore, to be alleviated through voluntary action on the part of the people. Indeed, it may even be said that unless urban and rural communities accept increasing obligations to provide themselves with the essential amenities and services, with perhaps some assistance from the State, progress in social welfare will be slow and inadequate.

#### MAN-POWER RESOURCES

8. There is a large field for planned effort to canalise on a voluntary basis the unused time and skill and other spare resources of the people and to secure for the community and its weaker sections a volume of economic and social benefit which would otherwise not be forthcoming. Voluntary service can be marshalled in rural areas for the construction and repair of sources of water supply, roads, school-buildings and works for better sanitation, and for satisfying a variety of needs which would otherwise remain neglected for years because the State has no financial resources to spare for the purpose. Voluntary activity on these lines, mostly of a sporadic character, is being carried on in different places in the country, and there is enough evidence of the potential value of man-power resources for local development to justify emphasis on the role of voluntary labour in all rural work. The more local communities can undertake through their own efforts, the greater will be the extent to which the government will find it possible to aid them. The principal object of community projects is to rebuild village life through work done by the people themselves. In addition to funds provided for the development of agriculture and irrigation, the Plan provides a further sum of Rs. 15 crore for assisting the rural population in undertaking, mainly with their own labour, works which are required for meeting their urgent needs.

#### AGENCIES OF PUBLIC CO-OPERATION

9. In local self-governing bodies such as district boards and municipal committees, which work through committees, co-opera-

tion in meeting local needs can yield rich rewards. It is, however, not enough that those elected to local authorities should co-operate with one another. They should also draw upon the help and co-operation of other citizens. For instance, an education committee or a health committee of a municipal body could have sub-committees for different sectors or wards in a town. Programmes could then be carefully drawn up in each field in which the active support and interest of an increasing number of persons could become part of the programme.

10. Associations representing professional groups, such as doctors, lawyers, teachers, social workers, technicians and administrators have as great an opportunity as organised interests, and possibly even greater, to determine their part in national development. These associations contain a significant proportion of the nation's talent and knowledge and, in the main, their role is in complete accord with the interests of the community. They have the duty, however, to lay down standards which members of each profession should observe and also, by stages, to improve these standards. It should also be possible for them to organise welfare programmes especially designed to enable their members to give to the community something beyond professional service.

11. The professions are manned by personnel from the universities which have, in turn, a unique contribution to make towards national development. It is being increasingly realised that State policy is adequate to the extent to which it is based upon constructive thought and on ascertained facts. It is precisely in these fields that the universities should be the torch-bearers. The Plan contemplates arrangements for co-operative research between the government and the universities, especially in the economic field. For much of its new personnel, the government has to turn to universities. The decline in the standards of education in recent years, which has been marked by many observers is as much a matter of concern to the community as it is a challenge to the leaders in different fields of university education. The universities could strengthen their position as agencies for public co-operation by establishing extension departments and by developing field work programmes as part of their training courses.

12. Voluntary organisations engaged in social work can greatly enlarge the scope of the National Plan by developing their own activities, attracting an increasing number of enlightened men and women with a desire for constructive work, and dealing with social problems for which the State cannot provide in sufficient measure. In particular, voluntary organisations may attempt to develop a field for constructive work for three strategic groups in the community, namely, women, youth, and teachers and students. These three groups have a vital part to play and their potential for creative activity still remains far from realised. With these possibilities in view, the Plan provides Rs. 4 crore for assistance by the Central Government for voluntary organisations and Rs. 1 crore for youth camps and labour service for students.



13. In securing public co-operation, the association of non-official representatives in bodies, such as development committees, project advisory committees, etc., in district administration and in community projects is of great value. This association should, however, be extended by affording greater opportunity for practical work and participation to voluntary organisations. Extension of the field of voluntary work would not only make for economy but would also leave the personnel of government free to take up tasks which have necessarily to be undertaken by the administration.

#### BHARAT SEVAK SAMAJ

14. The constitution of the Bharat Sevak Samaj and the National Advisory Committee for Public Co-operation in August, 1952, are important preliminary steps recently taken for securing public co-operation on a nation-wide basis. The National Advisory Committee, which is representative of different sections of opinion in the country, is expected to review the programmes and the progress of public co-operation in relation to the fulfilment of the National Plan, and to receive reports from and make recommendations to the Central Board of the Bharat Sevak Samaj.

15. The Bharat Sevak Samaj provides a common platform for all who wish to give their share of time and energy to developing the people's effort in relation to the National Plan and, at the same time, it is intended to assist in the development of existing voluntary organisations. The primary objects of the Samaj are :—

- (1) to find and develop avenues of voluntary service for the citizens of India to :—
  - (a) promote national sufficiency and build up the economic strength of the country.
  - (b) to promote the social well-being of the community and to mitigate the privations and hardships of its less favoured sections; and
- (2) to draw out the available unused time, energy and other resources of the people and direct them into various fields of social and economic activity.

The work of the Samaj, which is being undertaken on a nation-wide scale, is at present in the initial stages of its organisation.

**PART III**  
**PROGRAMME**  
**OF**  
**DEVELOPMENT**

## CHAPTER IX

### STATE OF THE AGRICULTURAL ECONOMY

Land is the country's most valuable asset. It gives employment to the bulk of the people and is the main source of national income. Measures to improve and modernise agriculture must, therefore, occupy a chief place in any scheme of economic development.

2. The total geographical area of India is 811 million acres. Leaving aside 196 million acres, for which no statistics are available, the remaining 615 acres are distributed as follows:—

	Million acres	Percentage of total
1. Forests.. ..	93	15
2. Net area sown .. ..	266	43
3. Current fallows .. ..	58	9
4. Cultivable waste .. ..	98	16
5. Not available for cultivation .. ..	96	16
Total .. ..	615*	100

The cultivated area (items 2 and 3) comes to 324 million acres. The gross cropped area is about 317 million acres of which food-grains occupy about 78 per cent, commercial crops about 17 per cent, and plantations, condiments and spices (which are of great importance in India's foreign trade) 1·1 per cent.

3. A study of agricultural data for the past four decades for some of the principal States brings out two main facts of the agricultural situation, namely, that (i) though the gross cropped area has increased as a result of double cropping, little new area has come under cultivation during the last 40 years in spite of the growing pressure of population on the land and (ii) even though a large part of the area is cultivated in tiny holdings, changes in the price structure do affect the crop pattern.

The fact that there has been little extension of cultivation to waste lands seems to indicate that the cultivable waste does not lend itself to reclamation by individual farmers and that its development requires an organised effort by the State.

\*Includes about 3·5 million acres of unclassified area.

## YIELD TRENDS

4. In regard to yield trends, the official estimates of production show a slight improvement in yields per acre for commercial crops, but no such trend is discernible in the case of food crops in spite of the extension of irrigation and other efforts on the part of the State. Too much reliance should not, however, be placed on these estimates, for though they were useful as guides for administrative action, they had not a very scientific basis. Since 1944 a scientifically designed procedure for estimating production, based on the technique of random sampling and crop cutting experiments, has been introduced; and in due course this will yield significant and reliable data regarding long-term trends.

## SUPPLIES AND REQUIREMENTS

5. The expansion of population—39 per cent in four decades—without a corresponding increase in production has inevitably reduced the per capita availability of food-grains from internal sources. Other factors have also been responsible for worsening the food situation. The separation of Burma from India reduced internal supplies by 1.3 million tons and the partition in 1947 by another 0.77 million tons. To make good this shortage the country is compelled to import food-grains from abroad. Nearly 2.8 million tons were imported in 1948, 3.7 million tons in 1949, 2.1 million tons in 1950 and 4.7 million tons in 1951.

6. The defects in agricultural statistics introduce an element of uncertainty in estimating the overall deficit. It appears that during 1950 the gap between requirements and the quantity of cereals available from internal sources was of the order of three million tons, and that by 1955-56 at the same level of consumption, that is 13.71 oz. per adult per day, this would go up to 6.7 million tons owing to the increase in population—unless production is stepped up in the meanwhile. In the case of pulses the present availability is only 2.1 oz. per adult per day as against 3 oz. recommended by the Nutrition Advisory Committee for a balanced diet. At the present level of consumption the additional requirements of pulses by 1955-56 are estimated at about 0.5 million tons and to obtain the nutritional standard at about 4 million tons. The gaps in respect of protective foods, i.e., sugar, oils and fats are equally large.

Coming to commercial crops, India's requirements of cotton in 1955-56 are estimated at 5.3 million bales as against the present production of 2.97 million bales. The corresponding figures for jute are 7.2 and 3.3 million bales. These figures indicate the urgency of stepping up agricultural production to bridge the large gaps that exist today.

## TEA, COFFEE AND RUBBER

7. Plantations of tea, coffee and rubber cover less than 0.4 per cent of the cropped area, and are concentrated mainly in the valleys

of the north-east and along the south-west coast of India. They give employment to more than a million families and in addition earn for the country about Rs. 80 crore of foreign exchange, of which tea alone accounts for Rs. 78 crore. A remarkable fact about tea plantations is that while the area under tea has remained unchanged for over a decade under international agreements, production has increased by about 43 per cent over this period. Coffee and rubber which used to be export commodities are now largely consumed within the country. The production of rubber has declined since 1945, partly because of a fall in the yield of old plantations. The Development Committee for rubber plantations has formulated a 15 year plan for their rehabilitation and development, and from this large increases in yield are expected.

#### CONDIMENTS AND SPICES

8. Black pepper, cardamom and cashew-nuts are important export commodities, and during 1950-51 yielded Rs. 20 crore, Rs. 1.5 crore and Rs. 9 crore respectively of foreign exchange as against an annual pre-war average of Rs. 3 lakh. In spite of phenomenal increases in prices little change in the area under these crops appears to have occurred. The industry lacks the organisational advantage enjoyed by the other plantation industries. Even the exports are not usually graded, which has often led to avoidable losses. The Government of India have recently set up a committee to examine the whole position in respect of these crops, and particularly, the question of their production and marketing being brought under a single organisation.

#### APPROACH TO AGRICULTURAL DEVELOPMENT

9. In this brief description of the main features of the agricultural situation in India it was necessary to give special attention to the facts of agricultural production. These are, however, only one aspect of the situation. In considering agricultural development the peasant's life and problems have to be viewed together as a whole, the aim being to transform by a comprehensive effort his whole outlook and environment. A rigid social structure alongside of unutilised resources such as is found in India is a common characteristic of underdeveloped economies. To change the social pattern which has grown up in this country round the ownership of land, and to bring new resources and technology into every-day operations have become essential to the process of development. It is the purpose of the Plan to bring about swift changes in such a way that the economy moves forward in a balanced manner, with the major objectives of community development, increased production and equitable distribution always kept in view. The succeeding chapters are concerned with various aspects of this central theme.

## CHAPTER X

### DEVELOPMENT OF THE CO-OPERATIVE MOVEMENT

In India, as in many other countries, co-operation started as a means of ensuring for the poorly equipped citizen advantages which better-placed persons were able to command by their own individual resources. Co-operation is effective not only against the economic ills of the masses but it also generates among them a sturdy feeling of self-reliance. By pooling their experience and knowledge and by helping one another they can not only find the solutions of individual problems but also become better citizens.

2. Since the passing of the first Co-operative Societies Act in 1904, co-operation in India has not only widened in variety and content, but has gradually assumed quite a different significance in the context of social regulation. When individualism was the order of the day, co-operation represented a defensive act of association on the part of individual citizens. But with the adoption of the principle of social regulation, the co-operative societies came to fill a more positive role. The co-operative form of organisation can now no longer be treated as only a species within the private sector. It is an indispensable instrument of planned economic action in a democracy. Co-operation must, therefore, be an essential feature of the programmes for the implementation of the Five Year Plan, adopted at all levels of administration. The Planning Commission in consultation with the State Governments, the Indian Co-operative Congress and the Reserve Bank intends to formulate a more specific programme for the expansion of the movement in all the sectors in respect of which co-operative organisation has been considered suitable. It is also studying the various problems that the movement has to face and will suggest in detail changes—legislative, organisational and other—that are necessary for planning the movement on a sound footing and ensuring its progress.

3. There are 173,000 co-operative societies in India with a membership of 12 million and a working capital of Rs. 233 crore. Besides agricultural societies for all types of credit, marketing, farming, irrigation, consolidation, etc., there are consumers' co-operatives in the rural and urban areas; housing societies; processing factories; and urban banks. Agricultural societies account for more than 80 per cent of the total number, and of these credit societies are still the most numerous. But in industry, commerce, transport and retail distribution, co-operatives are gaining experience and strength.

#### DEVELOPMENT THROUGH CO-OPERATIVES AND PANCHAYATS

4. It is greatly to be desired that in the agricultural part of the Plan, the village as a whole should be actively associated in fixing

targets and working for their achievement. In recent years the State Governments have shown a welcome earnestness in establishing panchayats as civic bodies charged with general responsibility for the collective welfare of the village community. Many activities, such as framing programmes for production, obtaining and managing governmental grants for building roads, tanks, etc., introducing improvements in agricultural methods, organising voluntary labour for community works and assisting in the implementation of legislation for economic and social reform, will fall within the purview of the panchayat.

5. On the other hand, for the working of individual programmes of development, where the specific responsibility and liability of a member have to be ensured, a more binding form of association is necessary. Specific and practical tasks of reclaiming land, providing resources for better cultivation and for marketing the village produce are best performed through co-operatives. It is, however, very necessary that co-operative agencies in the village should have the closest possible relationship with the panchayat. Though in the discharge of their functions the two bodies have specific fields in which to operate, by having mutual representation and by common *ad hoc* committees for certain matters, it will be possible to build up a structure of democratic management through both the organisations.

#### MULTI-PURPOSE AND CREDIT SOCIETIES

6. Among co-operative societies working in rural areas the multi-purpose society has rightly come to occupy an important place, and in some parts of the country efforts are being made to change many of the credit societies into multi-purpose societies. Such transformation appears to be desirable, but meanwhile credit societies will continue to play a vital role in the rural economy. There has been a noticeable increase of incomes in the agricultural sector in recent years and it is of the utmost importance that savings in the hands of the rural population should be kept flowing into credit organisations. There is nothing better adapted for this purpose than the co-operative credit society.

#### SALE AND PURCHASE SOCIETIES

7. The purchase of the agriculturist's requirements and the sale of his produce are key activities in the business of farming and at these two stages he is often unable to secure a fair deal. The organisation of co-operative sale and purchase societies can bring great benefits both direct and indirect. Seeds, fertilisers and implements can be placed at the disposal of even the small farmer by co-operative societies.

#### CO-OPERATIVE FARMING

8. In most parts of the country an increase in the unit of cultivation is necessary. Without undermining the sense of proprietorship and the consequent incentive to production co-operative farms can have all the advantages that a larger unit possesses. The Planning

Commission has, therefore, suggested that if in a village people holding at least half the total area under cultivation desire to establish a co-operative farm, legislation should enable them to proceed with the formation of a co-operative farming society for the entire village. The State should also encourage the establishment of such farms.

### INDUSTRIAL CO-OPERATIVES

9. In rural areas agriculture cannot provide full employment to all. Many agriculturists are under-employed and have to turn to other occupations, especially during the slack seasons. Besides the agriculturists, there are several classes of village artisans who under the pressure of competition from organised industry are finding it difficult to maintain their traditional employments. Their problems are discussed in other chapters and the advantages indicated of forming industrial co-operatives among such workers. Industrial co-operatives are, however, still in their infancy compared with agricultural co-operatives, and the uncertainties of their business amid the moving events of a competitive market are apt to loom large. It has been recommended elsewhere that cottage and small-scale industries should have for themselves well-marked fields which are not encroached upon by large-scale industries. When this principle has been translated into practice, the conditions for the successful operation of industrial co-operatives will be more assured. Meanwhile such co-operatives should be helped to establish themselves on a sound footing. Aids in respect of power, implements, raw materials, technical advice and marketing facilities should be made co-operatively available to them. A provision of Rs. 15 crore has been made in the Plan for assisting small-scale and cottage industries. Financial aid from this provision should by preference be given to industries co-operatively organised.

10. Not only in the rural areas, but in the urban sector also, there are a number of artisans of small means who find it difficult to organise themselves in keeping with the requirements of modern times. Among them too there is room for developing the co-operative movement. In urban areas special importance must also be attached to consumers' co-operatives, which, except in Madras, have not so far made very much progress, and to co-operative organisations for the building of houses.

### IMPROVEMENT OF PERSONNEL

11. The success of co-operatives ultimately depends on their ability to perform their functions—whether they relate to production, finance, marketing, distribution or construction—efficiently and to the satisfaction of the members and the community. Co-operatives are sometimes organised and administered by those who lack the necessary qualifications and experience. This factor alone accounts for the failure of a number of co-operatives and the uneven development of the movement in the country. Many of the managerial and supervisory functions call for specialised knowledge and technical



skill. Co-operatives should, therefore, recruit qualified men and get their existing staff properly trained. The present facilities for training higher personnel are insufficient, but a sum of Rs. 10 lakh has been provided for setting up three or four colleges in different parts of the country to meet the needs.

#### FUTURE POLICY

12. In the past there have been occasional complaints that while the State generally sponsors co-operative societies and desires to accord them preference, in actual practice agencies other than co-operatives often receive better treatment from a number of departments. It has already been indicated that the various forms of co-operative activity impinge on many departments. Therefore, unless every department and every Ministry accepts and adopts the policy of fostering co-operative methods of business, rapid and enduring results cannot be obtained. For instance, the Central and State Public Works and Irrigation Departments spend fairly large amounts on works programmes every year. Except in one or two States most of the works are entrusted to contractors. It is suggested that every department should follow the policy of building up co-operatives which may eventually replace the contractors or other middle men.

## CHAPTER XI

### FOOD POLICY FOR THE PLAN

A well-defined food policy is an essential condition for the successful implementation of the Plan. For large sections of the community, which live near the margin of subsistence, a minimum supply of food-grains at reasonable prices is a vital necessity. The prices of food-grains must, therefore, be held stable at levels within their reach. Moreover food-grain prices occupy a pivotal place in the whole price structure, because a rise in them leads directly to a rise in the cost of living and in production costs all round.

2. The fact that food controls were a product of war-time scarcities is apt at times to obscure the role they have to play in a planned economy. A Plan for development involves large outlays on investment and this, in the early stages, increases money incomes faster than the supply of consumer goods. These increased money incomes, especially if they accrue to the less well-to-do, are bound to lead in the first instance to an increased demand for food-grains and, unless ample additional supplies are forthcoming, their prices, in the absence of controls, will rapidly rise to the detriment of the poorer classes and of all those with fixed incomes. Food controls, therefore, in a planned economy have certain positive functions such as safeguarding the minimum consumption standards of the poorer classes, preventing excessive or ostentatious consumption by the well-to-do, and facilitating the direct utilisation of unemployed man-power for investment without endangering the whole economy.

3. Although a system of controls has been operating in this country for a number of years, doubts have been expressed from time to time whether, on balance, this is of advantage to the country as a whole. The lesson of experience, however, is unmistakable. The free market is not a dependable mechanism when the economy is, or is likely to be, under pressure due either to short supplies in the country or unfavourable developments abroad. Secondly, it is not without significance that most proposals for decontrol and the restoration of the free market visualise certain safeguards like cheap grain shops, licensing of traders, requisition of stocks, if necessary, etc. These forms of control were tried in the early stages and it was because they proved unsatisfactory that more stringent controls involving procurement, restriction of movement, price control and rationing had to be adopted.

#### THE DEFICIT

4. What is the present deficit in the production of food-grains? It is not possible to give a precise answer to this question on the basis of estimates of production and requirements. Official figures indi-

cate that consumption varies greatly in different parts of the country and from year to year ; indeed the variations are so great as to suggest that the data are unreliable. Similarly, there is a doubt regarding figures of production. Though the production potential of the country has been increased by schemes of minor irrigation and land improvement, the official figures of acreage and production since 1949-50 disclose no significant upward trend. The view is fairly widely held that the production of food-grains is in fact larger than is indicated by the official figures. Whether this is so or not is, from a practical point of view, of no great consequence ; for if more is being produced, more is being consumed. What matters for practical purposes is that over the last six or seven years the country has imported on an average about three million tons of food-grains annually. This gives the true measure of the deficit. But it must be remembered that this deficit is not static. Apart from other considerations, the population has been increasing at the rate of 1.25 per cent per year and the extra annual requirements of food-grains on this account are of the order of 4.5 lakh tons.

5. The aim of food policy for the period of the Plan must be to increase domestic production, to secure an increase in the marketable surplus, to distribute the same as equitably as possible, and gradually to eliminate the need to import food-grains. It is clear that, since the efforts to increase food production will show full results only after a time, policy must be based on the assumption of the continuance of relative scarcity, if serious risks in this vital matter are to be avoided. Rationing and procurement, together with certain minimum imports, must be regarded during the period of the Plan as the key to the maintenance of a stable level of food-grain prices.

#### FOOD PRICES

6. It is evident from the price trends, during the last five years, that the ground lost as a result of decontrol in 1947, when prices rose by as much as 30 per cent, has never been regained. After reimposition of controls in 1948 a certain measure of stability was attained, but this was upset by the devaluation of the Indian rupee in 1949 and by the general rise in prices associated with the Korean War. Though these inflationary pressures have been neutralised in the past 12 months, the price of basic cereals still continues to be high. Thus, while wholesale prices have declined by 15 per cent since April 1951, the fall in the prices of wheat and rice has been only one and five per cent respectively. This factor is mainly responsible for the cost of living not falling. Its present high level is causing serious hardship to the middle classes and their interests no less than those of the labouring classes require that there should be no departure from the basic policy of keeping down food prices at a reasonable level.

7. A policy of price stabilisation must, however, have in view certain minimum as well as maximum prices. When the economy is subject to inflationary pressure the emphasis must inevitably be on

keeping prices within the maxima. But if the trend of prices is persistently downward, a system of controls with well-defined procurement prices can be used—and indeed should be used—to safeguard the interests of producers by preventing prices from falling unduly.

8. Food policy has also a direct bearing on the investment programme, because the larger the available supplies of food and the more effectively they are mobilised, the greater is the investment effort that the community can put forth; for food constitutes the wherewithal for sustaining the labour force employed in construction and in the production of capital goods and equipment. The extent to which deficit financing can be resorted to for development is also dependent to no small extent on a proper food policy. What limits deficit financing is the danger that larger money incomes will generate inflationary pressures all over the economy. Only to the extent that these can be controlled and arrangements made for the supply and distribution of food-grains and other essential commodities at reasonable prices can deficit financing be safely proceeded with.

#### FOOD CONTROLS

9. Having regard to all these factors, it is considered that the basic structure of food controls must be kept intact during the period of the Plan. Until the domestic production of food-grains has been stepped up to the extent of 7·5 million tons or so as envisaged in the Plan the country cannot be considered to have an assured food supply adequate to its reasonable requirements. Controls might be relaxed or their form altered after the target of additional production has been achieved and adequate transport facilities have been created to ensure the expeditious movement of food-grains from one part of the country to another. To what extent such relaxation or changes can be made will depend upon the investment targets then in view.

10. Cities and towns above a certain size, which may vary from State to State, must be statutorily rationed and the needs of highly deficit areas like Travancore-Cochin must be similarly looked after. A system of controlled distribution through non-statutory rationing should normally be adequate for other areas. The system of procurement may either be the monopoly system or a levy, the choice depending upon local conditions, and arrangements should be made to secure an increased flow of grains from surplus States.

11. The maintenance of a satisfactory system of food controls depends upon (a) continuity in policy, (b) efficiency in administration, and (c) public co-operation. These are essential for control to function successfully. In India there are bound to be differences in the details of administrative arrangements, but the general principle must be the same throughout the country. The aim of Government policy should be to secure from each surplus State the maximum it can contribute to the common pool and to organise procurement and distribution in each deficit State in such a manner as to restrict its drawing from the Central pool to the minimum.

**FOOD HABITS**

12. Finally, considering the world shortage of rice and the high price that has to be paid for importing it, a change in the dietary habits of the people is highly desirable. Even a moderate import of 500,000 tons of rice is estimated to entail an expenditure of about Rs. 40 crore. The outlook for wheat, on the other hand, is better, and in these circumstances a moderate substitution of wheat for rice would considerably ease the food problem. The deficit in the country's rice production is not more than two or three per cent of the total needs, and it should not be difficult to make good this deficiency by substituting wheat for rice. There is also considerable scope for the use of supplementary foods. Food habits are, of course, not easy to change, but if the public is made aware of the cost of importing rice, as also of the undoubted benefits of a more varied diet, the necessary response could be secured.

## CHAPTER XII

### LAND POLICY

#### THE LAND PROBLEM

The question of land ownership is perhaps the most fundamental issue today in national development. It is clear that the manner of its solution will profoundly influence the pattern of economic and social organisation.

2. What should be the objectives of land policy? The needs of the national economy as a whole require that it should ensure increased agricultural output and an improved and diversified rural economy. From the social aspect, which is no less important, it should reduce disparities in wealth and income, eliminate exploitation, provide security for tenants and workers and, finally, promise equality of status and opportunity to different sections of the rural population. The first aspect is the subject of land management legislation, the second of land reform legislation. Land policy should include both elements but maintain a balance between them. The main outlines of policy have to be conceived in terms of different interests in land and, at the same time, its effects on production have to be foreseen and provided for. The interests involved are: (1) intermediaries, (2) large owners, (3) small and middle owners, (4) tenants-at-will and (5) landless workers. Any action affecting one interest must necessarily give something to or take something away from the others. As social and economic adjustments are made, a new social order will take the place of the old.

#### INTERMEDIARY RIGHTS

3. A major land reform of the past few years is the abolition of intermediary rights, with the result that the State has now everywhere come into direct contact with the tiller of the soil. Zamindari has been abolished in Uttar Pradesh, Madhya Pradesh and Madras and is in the process of abolition in Bihar. Legislation already passed in Assam and Orissa is to be enforced shortly and West Bengal is engaged in framing legislation. In Rajasthan, Madhya Bharat, Hyderabad and Saurashtra and also in some of the smaller States in Central India legislation has been passed for the abolition of jagirdari. In Bombay, the Punjab and PEPSU, the holders of superior rights have been or are being eliminated.

4. Two main problems connected with the abolition of intermediary rights in land have not yet been fully solved, viz:—

- (i) the payment of compensation to zamindars, and
- (ii) the establishment of the necessary revenue administration.

In most States compensation is expected to take the form of non-negotiable interest-bearing bonds repayable within 40 years. There is a risk that the recovery made by a Government from tenants for rights of ownership may be used as current revenue. Should this happen, a State Government may find itself living beyond its means and later find it difficult to meet its obligations in respect of payment of compensation. The suggestion has been made that the additional receipts should be funded and this fund should be utilised for development purposes. The Commission considers that this suggestion may be considered in all its bearings by a committee of revenue and financial experts.

5. The question of revenue records and revenue administration in the zamindari and jagirdari areas needs urgent attention. The temporarily settled areas have long had a framework of revenue administration. If strengthened, it will be possible for it to assume new responsibilities arising out of the abolition of zamindari. In most of the permanently settled and jagirdari areas, however, revenue administration is practically non-existent. The responsibilities which State Governments assume on the abolition of zamindari are not confined to the collection of rent and maintenance of land records: important obligations relating to waste lands, forests, fisheries and minor irrigation works have also to be accepted. The States concerned should, therefore, give high priority to the solution of the administrative problems with which they will be faced on the abolition of zamindari and to the building up of sound revenue administrations.

#### SUBSTANTIAL OWNERS OF LAND

6. The information available regarding the distribution and size of holdings is very meagre, and a regular census of land holdings and cultivation should be undertaken in 1953 as without it there will be difficulty in giving practical effect to a number of measures of land reform which remain to be taken. The general picture is, however, clear; it is one of innumerable small holdings, a large proportion of which are uneconomic, a small number of peasants with holdings of moderate size, and a mere sprinkling of substantial owners. If, therefore, it were the object of policy to reduce the large holdings with a view to providing for the landless or augmenting the size of uneconomic farms, the available data suggests that the aim would probably not be realised. But on general grounds of public interest and social justice the Commission favours the principle that there should be an upper limit to the amount of land that an individual may hold.

7. The idea of an upper limit has already been recognised in two different ways, namely, (i) as a limit for future acquisition, and (2) as a limit for resumption for personal cultivation. Uttar Pradesh has, for instance, prescribed 30 acres as the limit for future acquisition. Similarly, where land is held by tenants, a landowner may be permitted to resume only up to a prescribed limit for personal cultivation. In Bombay, this limit is 50 acres, in the Punjab 50 'standard' acres,

in Hyderabad five times an economic holding. Not all States have yet imposed limits and certain areas may present special problems,—for instance where there is a great deal of land requiring reclamation—but the determination of these limits is an essential step in land reform.

8. There are a number of possible criteria by reference to which these limits can be determined. A practical method would be to fix a multiple in terms of what may be regarded as a 'family holding' in any given area. A family holding may be briefly defined as equivalent to a plough unit or a work unit for a family of average size working with such aid as is customary in agricultural operations. The appropriate limit has to be determined by each State in the light of its own circumstances, but, broadly speaking, about three times a family holding would appear to be a fair limit.

9. Whether the principle of limiting holdings should be applied retrospectively and to existing holdings raises many issues. The central question is whether in imposing a limit, the excess land can be acquired for a consideration which falls short of fair compensation, i.e., its market value at the time of acquisition. The Commission has been advised that such a course would not be consistent with the provisions of the Constitution. The problem, therefore, will need to be considered in somewhat different terms.

10. The land held by substantial owners falls into two distinct categories, namely, (i) land under the cultivation of tenants, and (ii) land under the direct management of owners. In respect of the former, the Commission suggests that, for areas in excess of the limit prescribed for resumption for personal cultivation, the general policy should be to enable the tenants to become owners. To achieve this a number of measures have to be taken simultaneously. Firstly, the tenants have to be given security of tenure, which could even extend to the conferment of occupancy rights. Secondly, it will be necessary to determine the principles on which (a) the price of land is to be fixed, and (b) payment is to be made by the tenant. The most convenient course might generally be to fix the price of land as a multiple of its rental value; and payment might be made in instalments spread over a period of time. The Government could also establish direct contact with the tenants upon whom these rights are conferred and collect the price of land from them along with the land revenue. The payment of compensation to the owners can be made by means of bonds in the manner already adopted for intermediary rights.

11. Where land is managed directly by the owners, the principal consideration should be whether or not such management is in the public interest. In other words, does it fulfil the standards of efficiency necessary to raise production in conformity with the Plan? It is suggested that each State should enact suitable land management legislation, laying down standards of cultivation and management and providing an organisation for its enforcement. This legislation could be applied, in the first instance, to those holdings



which exceed a limit to be prescribed, which may be equal to or larger than the limit for resumption for personal cultivation. Substantial farms directly managed by their owners could then be divided into two groups, viz., those which are so efficiently managed that their break-up would lead to a fall in production, and those which do not meet this test. For the latter category, the land management legislation should give to the appropriate authority the right to take over land in excess of the prescribed limit and to arrange for its cultivation.

12. These proposals would provide for a large measure of redistribution of land belonging to substantial owners. A period of two or three years is, however, likely to be required for setting up the machinery and undertaking the survey that would be necessary before land management legislation can be effectively enforced.

#### SMALL AND MIDDLE OWNERS

13. The expression 'small' and 'middle' owners cannot be defined precisely. It will, however, suffice to call the owners of land not exceeding a family holding small owners. Those holding land in excess of this unit but less than the limit prescribed for resumption for personal cultivation may be defined as middle owners. The policy should be to encourage and assist the owners to develop their production and to organise their activities on co-operative lines.

14. The small owners include many who have fragmented and uneconomic holdings. The experience of consolidation of holdings in the Punjab, Madhya Pradesh and Bombay has proved the value of this measure. Since the idea is now well understood by the peasant, consolidation should be pursued with vigour. Some States, such as Uttar Pradesh and Bombay, have fixed a minimum below which sub-division is not permitted. This measure is sound in conception and could be extended to other States.

15. The suggestion is sometimes made that the land of large landowners should be redistributed so as to convert uneconomic into economic holdings. It is improbable that much land will become available for this purpose. The excess land with substantial owners will normally have to go to the tenants cultivating it, whose status will develop into that of owners instead of tenants. The solution of the problem of uneconomic holdings lies in a different direction, namely, in evolving a suitable system of co-operative management of the land of a village.

16. Lands belonging to small and middle owners may be divided into two categories; those under direct cultivation, and those leased to tenants-at-will. The problems which the former present are those of finance, technical assistance and organisation of co-operative activity. Concerning the latter, two considerations are important. Firstly, measures to protect tenants should be simple to administer and the problems which they raise should so far as possible be solved at the

village level by the people themselves. Secondly, care should be taken to ensure that they do not operate so as seriously to check the movement of people from the rural areas into other occupations. The pressure on the land is already heavy and is growing. Voluntary movement from the villages into other vocations is thus beneficial to the rural economy. Little is to be gained by treating the leasing of land by small and middle owners, while they are employed elsewhere, as examples of absenteeism to be dealt with on the same lines as the land of substantial owners cultivated by tenants-at-will.

#### TENANTS-AT-WILL

17. Steps must however be taken to afford adequate protection to the tenants of small and middle owners. The main question is the terms on which the latter may resume land for personal cultivation. Resumption should be allowed only for cultivation by the owner himself or members of his family and up to a limit of not more than three family holdings. A period may be prescribed, say, five years, during which an owner may resume for personal cultivation. If he fails to do so during this period his tenants should have the right to buy the land they cultivate on terms similar to those proposed for the tenants of substantial landholders.

18. The rights of tenants need to be defined. The two principal questions in this connection are the period of tenancy and the rent to be paid. In the opinion of the Commission, the tenancy should ordinarily be for about five years and should be renewable, resumption being allowed, as suggested, if the owner wishes to cultivate the land himself. The rent should be so fixed that a fair margin of profit is left for the cultivator, taking into account his expenses of cultivation and other risks. Over the greater part of the country a rate of rent exceeding one-fourth or one-fifth of the produce would appear to require special justification.

#### LANDLESS WORKERS

19. Schemes of land distribution are likely to confer only limited benefits on agricultural workers, for in every scheme for redistribution of land acquired from substantial owners preference will be given to the tenants already working on the acquired land. For this reason, the movement for making gifts of land which has been initiated by Acharya Vinoba Bhave has a special value. It offers the landless worker an opportunity not otherwise open to him.

20. It would be difficult to maintain a system in which individuals are denied opportunities of rising in the social scale owing to accidents of birth or other circumstances. It is, therefore, necessary to bring about institutional changes such as would create conditions of equality for all sections of the rural population. The essence of these changes lies in working out a system of co-operative village management which will enable the land and other resources of a village to be managed and developed so as to increase and

diversify production as well as to provide employment for all those who are able and willing to work.

#### CO-OPERATIVE VILLAGE MANAGEMENT

21. It is not only from the point of view of agricultural workers that a co-operative reorganisation of the village economy is desirable. As already pointed out, even after the problems concerning the substantial owners have been satisfactorily settled, considerable disparity of interest will remain between the small and middle owner, the tenant, and the landless worker. Concessions to one section at the expense of the other may benefit a few, but are not likely to raise agricultural production or diversify rural economy or expand local employment. Proposals for further regulation become in effect proposals for sharing poverty. The basic condition for increase in agricultural production is increase in the unit of management of land. This can be achieved by co-operative management at the village level.

22. A number of experiments in co-operative farming and other activities on co-operative lines are in progress throughout the country. Much can be learnt by the study of these undertakings. There is need also for widening the programmes of training and experiments in co-operative farming and co-operative organisation. A sum of Rs. 50 lakh has been provided in the Five Year Plan for this purpose. Broadly speaking, however, we envisage that the village panchayat should become the agency both for land reform and for land management in the village. In the first place it should be the body concerned with the management of land taken over from substantial owners, and also of village waste lands. The leasing of lands by small and middle owners should also be done through the panchayat and not directly. In this way the village panchayat may be able to provide cultivating holdings of economic size, at any rate for landless cultivators. The exercise of these functions would naturally lead on to the wider conception of the co-operative management of the entire land of the village and the undertaking of activities for creating non-agricultural employment in the village.

23. Land management legislation will have to be undertaken by the State to enable the village communities to introduce the new social and economic order which we have in view. This legislation would have to confer upon the village panchayats the right of managing village lands which are uncultivated or are not directly cultivated by their owners. Secondly, if a majority of the owners and occupancy tenants in a village wish to enter upon co-operative management of the land of the village, their decision should be binding on the village as a whole.

Such arrangements must necessarily be flexible and be allowed to grow according to local experience and conditions.

#### INFORMATION AND RESEARCH ON LAND REFORM

24. In the years which followed independence, detailed enquiries were undertaken by many States in connection with their land reform legislation. These enquiries were quite adequate for the first

steps which had to be taken viz : the abolition of intermediary rights. A stage has now come, however, when new measures of land reform should be undertaken in the light of an objective assessment of the measures already introduced. This requires detailed information which, unfortunately, is not yet forthcoming. Each State must, therefore, have an organisation for the collection of the required data. A similar organisation at the Centre should pool knowledge and experience gained in the States and plan further investigations. When the measures proposed affect the lives of millions of people, it is essential that they should be tested with reference to data, collected and evaluated in a scientific manner. To assist in this process, the Commission recommends the establishment of a land Reforms Organisation at the Centre.

## CHAPTER XIII

### THE AGRICULTURAL WORKER

#### MAGNITUDE OF THE PROBLEM

The expression 'agricultural worker' denotes those rural workers who are employed on wages in agricultural operations. Until the data obtained in the recent agricultural labour enquiry becomes available, the 1951 census is the main source of information regarding their numbers and distribution. Of a total population of 249 million engaged in agriculture, 18 per cent were returned as cultivating labourers and their dependents. The proportion, however, varies considerably from State to State, being as high as 37 per cent in Travancore-Cochin and as low as eight per cent in Uttar Pradesh. The highest concentration of agricultural workers is in those areas where population presses heavily on the land and development in sectors of the economy other than agriculture has been retarded.

2. Among the causes which have led to an increase in this section of the population is the decline of rural industries which has driven many artisans to become part-time labourers, and the fragmentation and sub-division of holdings which has compelled many peasant farmers to take to casual labour. A reduction in the number of large farms consequent on tenancy legislation has tended to aggravate the problem. The existence of large numbers of agricultural workers who lack sustained employment and frequently suffer from social handicaps is a source of serious weakness and even instability in the present agrarian system.

#### GENERAL AMELIORATIVE MEASURES

3. The Five Year Plan is basically an attempt to remove the social and economic causes which account for the present condition of agricultural workers. As a section of the village community, their economic condition depends on the state of prosperity in the agricultural economy. The programmes included in the Plan for extension of irrigation and intensive cultivation will increase rural employment and thus give greater opportunity to agricultural workers. Through measures of land reform and land reclamation some land will become available for them, and there is a specific provision of Rs. 2 crore in the Central Government's Plan for the resettlement of landless agricultural workers. As the economy develops as a whole, an increasing number of workers will be drawn away from the countryside to employment in urban areas, and both those who move out and those who remain behind are likely to obtain more adequate employment. In addition the Plan contains important programmes for village industries and the promotion of khadi which will be of direct benefit to agricultural workers. The substantial provision made in the Plan

for the welfare of backward classes will also help them, since a large proportion of these classes are to be counted among agricultural workers. Another way in which they will be benefited is by the enforcement of the Minimum Wages Act in low wage pockets and on the larger farms and in areas selected for intensive development.

#### SPECIAL MEASURES

4. The following additional measures are recommended for the welfare of agricultural workers.

(1) Agricultural workers seldom own the sites on which their houses stand. This makes their position extremely vulnerable. Landless workers enjoying temporary rights to house sites should be granted occupancy rights. Where house sites belong to a village, the village panchayat should be persuaded to grant the sites free of charge. Persuasion, if possible, and legislation, if necessary, should be resorted to in the case of sites belonging to individuals. Compensation, if any, should be paid by the village panchayats. In some places the existing village site is so congested that a new site has to be provided for further extension. The landless, and particularly the Harijans, should be fully represented in the allotment of sites in such extensions, and an effort should be made, wherever possible, to provide small allotments for kitchen gardens.

(2) The movement led by Acharya Vinoba Bhave for securing gifts of land for the landless has considerable moral value and should be supported by providing means of cultivation and other assistance to the landless labourers selected for allotment of gifted land.

(3) With the assistance of the co-operative staff, the agricultural, forest and public works departments of the State Government should try to organise co-operatives of village labourers which should be encouraged and enabled to take up construction work. The success of forest labourers' societies in Bombay and similar organisations elsewhere, suggests that, given encouragement, the formation of labour co-operatives could contribute to the relief of rural unemployment.

(4) Blocks of newly reclaimed land as well as culturable waste land should be set apart for co-operatives of landless agricultural workers and of those with small uneconomic holdings. Even though the land thus made available would be limited, such schemes would be a source of hope and encouragement to the families of agricultural workers.

(5) Being without land or other assets, agricultural workers have no security to offer. As a rule, therefore, they are ineligible for financial assistance from the Government. While loans for individuals may present administrative difficulties, it should be possible for State Governments to give financial assistance to co-operatives of landless workers to enable them to build houses, purchase bullocks and implements and to start ancillary industries. Special assistance by way of

educational stipends, particularly for vocational and technical training should also be afforded, as indeed is already being done in most States.

(6). The extension organisation in the districts, the early establishment of which is proposed elsewhere, should concern itself as much with the welfare and employment problems of agricultural workers as with those of agriculturists. Efforts should also be made to bring home to the village panchayats their responsibility for the welfare of the agricultural worker no less than for that of other sections of the village community.

## CHAPTER XIV

### PROGRAMME FOR AGRICULTURE

The shortages which exist in respect of food-grains and the principal commercial crops have been indicated in an earlier chapter. The Five Year Plan seeks to overcome or reduce these deficiencies in respect of the major crops, namely, food-grains, cotton, jute, oil-seeds and sugar-cane.

#### PRODUCTION TARGETS

2. The targets of additional production envisaged in the Plan are as follows :—

Commodity	Quantity (in millions)	Percentage increase
Food-grains .. .. .	.. 7.6 (tons)	14
Cotton .. .. .	.. 1.26 (bales)	42
Jute .. .. .	.. 2.09 (bales)	63
Sugar-cane .. .. .	.. 0.7 (tons)	12
Oil-seeds .. .. .	.. 0.4 (tons)	8

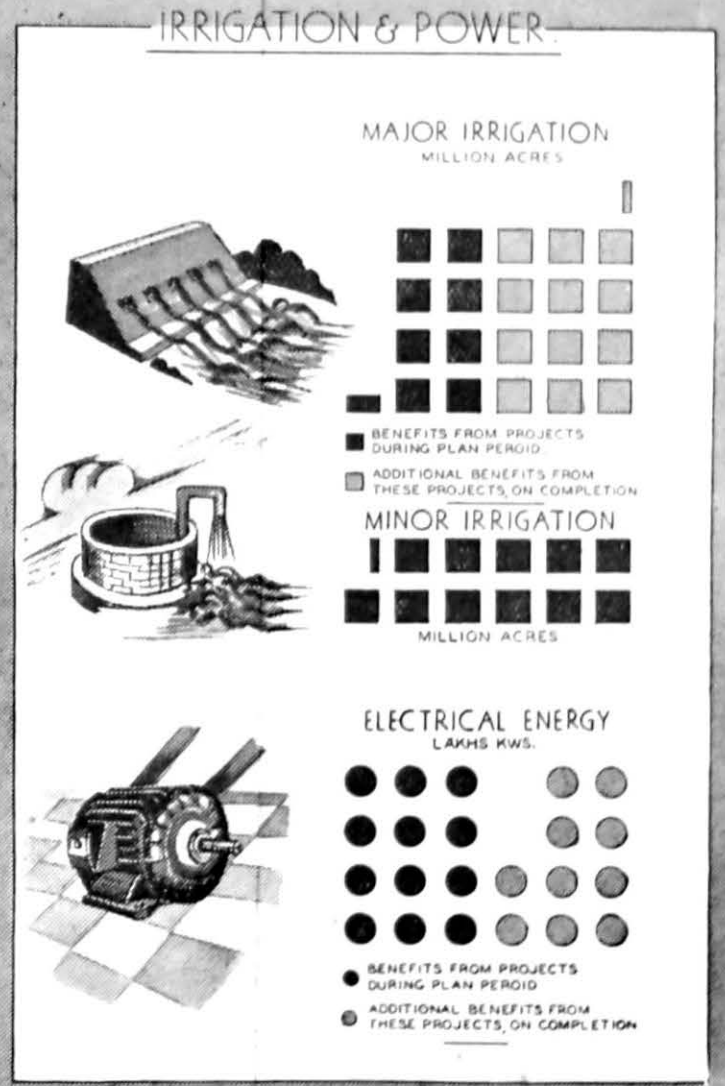
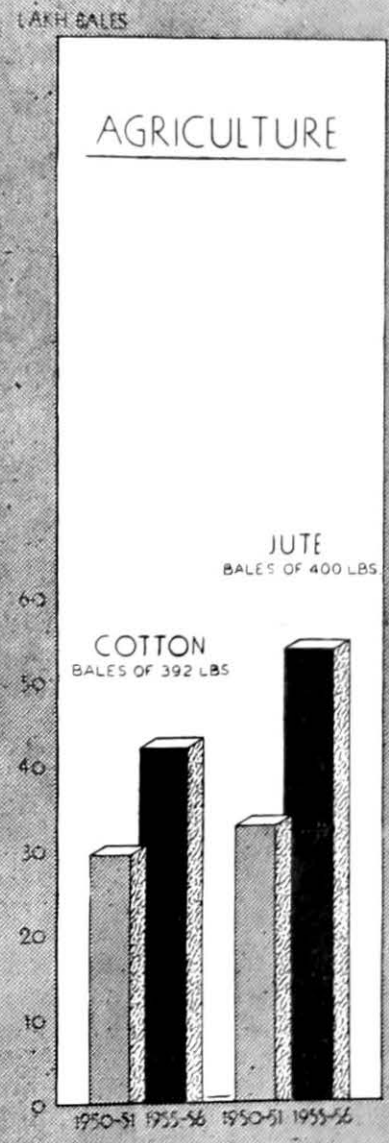
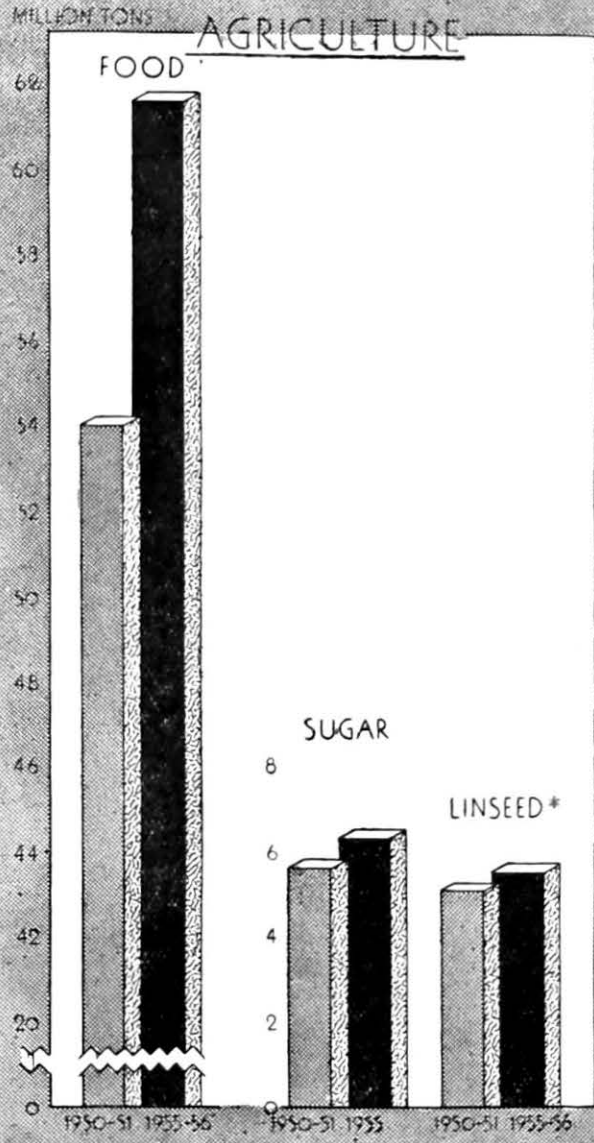
The figure of 7.6 million tons of food-grains is made up roughly of about 4 million tons of rice, 2 million tons of wheat, 1 million tons of gram and pulses and 0.5 million tons of millets.

3. The targets of additional production have been arrived at as a result of close consultation with the State Governments. The programmes on which these are based were first worked out in the summer of 1951. Subsequently, they were reappraised in considerable detail in a series of conferences with the representatives of State Governments. As a result of this reappraisal, the targets for the commercial crops were those given above, but in regard to food-grains, the reappraisal indicated a total increased production of only 6.5 million tons as against the initial target of 7.2 million tons. Moreover, if allowance were made for diversion of some area from food-grains to commercial crops, the net increase in production of food-grains worked out at not more than about 6.0 million tons. It, therefore, became necessary to strengthen the agricultural programmes.

4. The agricultural programme, as now presented, consists of two parts: (1) the schemes worked out in consultation with State Governments which will yield 6.0 million tons net of additional food-grains at a cost of Rs. 125 crore, and (2) supplementary schemes



# — TARGETS OF THE FIVE YEAR PLAN —



\*For linseed read oil-seeds

proposed by the Planning Commission with a view to achieving an additional production of at least 1.6 million tons of food. The statement below shows the general nature of these additional schemes.

	<i>Rs. crores</i>
(1) Additional provision for minor irrigation works ..	30
(2) Additional programme for the construction of tube-wells .. .. .	6
(3) National extension organisation .. .. .	3
(4) Supplementary allotment for Grow More Food during 1952-53 .. .. .	10
(5) Community Projects, including 66 projects already initiated .. .. .	90

5. Two other measures may also be mentioned. Firstly, the fertiliser programme is likely to be substantially enlarged in the later stages of the Plan. Secondly, agricultural finance has been provided on a very much larger scale than was hitherto considered possible. By 1955-56, it is expected to make available to the farmer, from the Government and through the co-operative movement, short-term finance to the extent of Rs. 100 crore. In addition about Rs. 25 crore and Rs. 5 crore or more are likely to be available as medium and long-term finance respectively.

6. When the targets of additional production are achieved, the deficiency in food-grains will largely be wiped out. Gaps in respect of commercial crops will still remain, though they will be reduced considerably. The Plan, therefore, provides for imports of 1.2 million bales of cotton and a 0.8 million bales of jute.

#### THE PROGRAMME

7. The increase of 6.5 million tons in food production (without allowing for diversion) through programmes worked out in consultation with the State Governments, as distinguished from the supplementary programmes later proposed by the Commission, is expected to be achieved as follows:—

	(Million tons)
Major irrigation works .. .. .	2.01
Minor irrigation works .. .. .	1.78
Land reclamation and development .. .. .	1.51
Manures and fertilisers .. .. .	0.65
Improved seeds .. .. .	0.56
	6.51

The total area expected to receive irrigation from the above major and minor irrigation works is 19 million acres. Of this, minor irriga-

tion works included in State Plans account for 8.2 million acres as detailed below :—

	(Million acres)
1. Dams and channels .. .. .	4.4
2. Wells (new and repaired) .. .. .	1.6
3. Tube-wells (other than those included under major irrigation) .. .. .	0.7
4. Tanks (improvement and construction) .. .. .	0.8
5. Pumping installations .. .. .	0.7
Total .. .. .	8.2

In addition a further three million acres are expected to be brought under irrigation as a result of supplementary minor irrigation schemes for which Rs. 30 crore have been provided.

8. The cost of minor irrigation schemes, including the additional provision of Rs. 30 crore, comes to about Rs. 77 crore. In addition, about a third of the expenditure meant for community projects will be devoted to irrigation. With the progress, therefore, of these projects, a larger area than that indicated above is likely to receive irrigation from minor works.

9. The land reclamation programme, for which a sum of Rs. 25 crore has been provided in the State Plans and Rs. 10 crore in the Central Plan on account of the Central Tractor Organisation, aims at developing about 7.4 million acres. Of this, the Central Tractor Organisation will reclaim 1.4 million acres and the State tractor organisations 1.2 million acres. The remaining 4.8 million acres are expected to be developed through reclamation by the farmers themselves with State assistance and through other measures to bring recent fallows back into cultivation.

#### COMMERCIAL CROPS

10. The basic conditions which favour increase in production in one direction will also favour increase in others. The special programmes for commercial crops will be financed by the commodity committees out of their funds, which are raised through special cesses, as follows :—

- Cotton—Rs. 3.5 crore
- Sugar-cane—Rs. 1.3 crore
- Oil-seeds—Rs 0.5 crore.

For jute there is no separate cess and the Plan provides a sum of Rs. 50 lakh.

Production of commercial crops is influenced by price changes to a much greater extent than food production. The production

targets for these crops assume the continuance, broadly speaking, of the present structure of relative prices between food-grains and other crops.

### THE EFFECTS OF THE PLAN

11. It is difficult to forecast the precise effect of the agricultural programme on the crop pattern. The decision of the cultivator to raise a crop is based on several factors, such as prices, weather conditions, availability of capital resources and supplies, which vary from season to season. Provision of irrigation, improvement of communications, growth of urban areas, and changes in food habits also at times affect the acreage under each crop. However, on the basis of the materials at the disposal of the Commission and taking into account the fact that the cropped and irrigated areas are likely to increase by 10 and 19 million acres respectively, the following pattern of crops may be anticipated at the end of the five year period.

				(Area in million acres)	
				1950-51	1955-56
Rice	..	..	..	76.0	80.0
Wheat	..	..	..	24.0	27.0
Other cereals	..	..	..	93.0	90.0
Gram and pulses			..	47.2	49.0
Cotton	..	..	..	14.6	18.0
Jute	..	..	..	1.4	2.0
Sugar-cane	..	..	..	4.2	4.5
Oil-seeds	..	..	..	26.7	27.0
Fruits and vegetables	..	..	..	5.0	6.0
Other crops	..	..	..	25.0	24.0

### AGRICULTURAL PLANNING

12. The targets of production proposed in the Plan indicate in a broad way the magnitude of the effort that is contemplated. In assessing these targets it has to be remembered that allowance for seasonal variations cannot be made in advance; these variations are inherent in agricultural production itself and may extend to as much as 10 per cent of the average production, thus upsetting all calculations. But the estimates of increased production have been made on a cautious basis, especially in respect of schemes for the increased use of improved seed, manures and fertilisers.

## CHAPTER XV

### COMMUNITY DEVELOPMENT AND RURAL EXTENSION

Community development is the method and rural extension the agency through which the Five Year Plan seeks to initiate a process of transforming the social and economic life of the villages. The Plan provides Rs. 90 crore for community projects and proposes that over a period of about ten years, a network of extension workers should be spread throughout the country. It is intended in this chapter to indicate briefly the significance of these programmes and their place in national reconstruction.

2. During the past thirty years various attempts at rural development work were made by different departments in the States; but these efforts were to a great extent unco-ordinated and there was no comprehensive approach to village life as a whole. A study of these sporadic efforts at rural development leads to certain broad conclusions. In the first place, when a number of different departments of the Government approach the village, each from the aspect of its own work, the effect on his mind is apt to be confusing. His life is not divided into compartments as the activities of the Government tend to be. The approach to the villager has, therefore, to be made not through a multiplicity of departmental officials but through an agent common at least to the principal departments engaged in rural work, whom it is now customary to describe as the village level worker. Secondly, the principal responsibility for improving their condition must rest with the villagers themselves. Unless they feel that a programme is theirs and value it as a practical contribution to their own welfare, no substantial or lasting results will be gained. It is no use trying to force improvements down their throats. Similarly the programmes which depend largely on financial assistance from the Government without any element of self-help on the part of the villagers are short-lived. The aim has to be to create in the rural population a desire for a higher standard of living—a will to live better.

#### COMMUNITY DEVELOPMENT PROGRAMME

3. These lessons from the experience of the past have been brought together in the conception and concrete formulation of the community development programme, which was launched during 1952. The concept is not an entirely new one, but progress has been hampered in the past by insufficiency of funds. Each of the 55 Community Projects now functioning all over the country comprises nearly 300 villages with a total area of about 450 to 500 sq. miles, a cultivated area of about 150,000 acres and a population of about 200,000. A project area is divided into three Development Blocks, each consisting of about 100 villages and a population of 60,000 to 70,000. The Development Block is in turn divided into groups of five villages, each under the control of a village level worker.

4. The main fields of activity in the community projects will be agriculture and related matters, communications, education, health, supplementary employment, housing, training and social welfare. The agricultural programme includes reclamation of available virgin and waste land, provision of water for agriculture through minor irrigation works, the intention being that at least half the land under cultivation should be provided with irrigation facilities, the promotion of improved techniques of cultivation and the use of improved seed, fertilisers and natural manures, and the improvement of livestock by establishing a few key villages for breeding pedigree stock. For carrying out this programme there will be one agricultural extension worker for every five villages. In addition to his other functions, it will be his duty to encourage the growth of a healthy co-operative movement. The aim will be to see that there is at least one multi-purpose society in every village or groups of villages.

The road programme will be designed to link up every village in the project area with a main road maintained by the State or other public agencies. These feeder roads will be built with the voluntary labour of the villagers.

As regards education, there will be expansion and improvement of primary and secondary education. Vocational and technical training will be emphasised in all stages of the programme and facilities provided for imparting improved techniques to artisans and technicians, both in the urban and rural areas.

The Health organisation will consist of three primary health units in each Development Block, and a secondary health unit consisting of a hospital and a mobile dispensary at the headquarters of the project area. The main objective will be to improve environmental hygiene by protection of the water supply, proper disposal of human and animal wastes and control of epidemic diseases. The villagers will also be trained in improved building techniques. In the congested villages, it may be necessary to develop new housing sites, open village playgrounds and provide assistance in the supply of building materials. As far as possible, gainful employment will be provided for the unemployed and the under-employed in the rural areas by developing cottage and small-scale industries.

5. For each project there will be a Project Executive Officer who will have a staff of about 125 supervisors and village level workers. This staff and other personnel for the community development programmes are to be trained in 30 centres set up with the assistance of the Ford Foundation of America, each capable of accommodating 70 trainees. In addition, the agricultural extension workers in the project areas will train the cultivators and the *panches* and village leaders. Since the active participation of the people not only in the actual execution of the projects but also in their planning is of the very essence of the whole programme, there will be a Project Advisory Committee, representative of all the non-official elements within the project area, to assist the Project Officer. The villagers' participation

in the execution of the programme will also be secured through the voluntary organisation known as the Bharat Sevak Samaj.

6. Since the programme will include some major items of work, which would normally have to be executed through Government agencies at considerable cost, it is intended that a qualifying scale of voluntary contribution either in the form of money or labour from the local population should be laid down as a condition precedent to any major programme being undertaken in a project area.

7. The estimated expenditure on a basic type of rural community project is Rs. 65 lakh over a period of three years. Of this amount, Rs. 58.47 lakh will be rupee expenditure and the rest dollar expenditure. The estimated cost of a composite type of project i.e., one with an urban unit, which it is intended to provide in a few projects, is Rs. 111 lakh. The Central Government will bear about 75 per cent of the non-recurring expenditure and 50 per cent of the annual recurring expenditure and will also provide loans for self-financing schemes. The rest of the expenditure will be borne by the States, which will also be expected to assume responsibility for all expenses after the third year.

8. The community development programme is bound up with and in part supported by several of the projects under the Indo-American Technical Co-operation Programme. Under the latter, India will be receiving assistance in regard to tube-wells, fertilisers, iron and steel for agricultural implements and the training of village level workers and project supervisors. The needs of the project areas in these matters will be met from this source.

9. A systematic evaluation of the methods and results of the community development programme will make a significant contribution by indicating those methods which are proving effective, and those which are not ; and furnishing an insight into the impact of the community development programme upon the economy and culture of India. Such evaluation work is being undertaken by an independent unit under the Planning Commission.

#### NATIONAL EXTENSION SERVICE

10. The Grow More Food Enquiry Committee proposed the establishment of a national extension organisation which could reach every farmer and assist in the development of rural life as a whole. The programme suggested by the Committee, for which provision has been made in the Plan, contemplated that the Central Government should help the State Governments in establishing extension services so as to cover the whole country within about ten years. During the period of the Plan, nearly 120,000 villages, that is, nearly one-fourth of the rural population, will be brought within the scope of the extension service. The Central and State Governments will frame detailed programmes for re-organising the existing services and improving the existing methods of recruitment and training. The

establishment of this extension organisation will give a powerful momentum to all rural work and in particular to the programme for increased agricultural production.

11. The training of extension workers requires the closest attention and must be related to the services that they will have to perform. They have to understand rural problems and the psychology of the farmer and offer solutions to his various difficulties. They have also to discover village leadership and stimulate it into action. Their success will depend on the extent to which they gain the confidence of the farmers. In order to develop the true approach to extension work much might be gained if all extension workers, whether graduates or field level workers, start at the field level and only those who prove their worth receive promotion to higher positions.

12. The confidence of the villager is gained with difficulty and lost easily. It is, therefore, of vital importance that the initial start be made with items whose usefulness to the cultivator in increasing agricultural production has been well established. It is only after sufficient confidence is gained that comparatively untried measures can be put forward, and even these should be in the way of experiments until the people have found the answer for themselves.

13. Finally, extension workers have to be supported effectively by research workers to whom they can bring their problems and whose results they can carry to the people. Special arrangements are, therefore, needed to ensure the closest co-operation between extension and research.



## CHAPTER XVI

### FINANCE FOR AGRICULTURE

Agricultural production in India depends upon millions of small farmers. It is their hard work and efficiency which will ultimately raise agricultural output. For want of funds and credit facilities, many of them are unable to use improved seed and manure or to introduce new techniques. Some of them cannot even keep wells and tanks in good repair. The provision of adequate and timely credit at reasonable rates of interest is, therefore, an integral part of the Plan. All the existing agencies which provide these facilities must be integrated and used for the purpose.

2. The cultivator requires (a) short-term, (b) medium-term and (c) long-term loans. Short-term loans, repayable after the harvest, are needed for seeds, manures and fertilisers or to meet the cost of labour. Medium-term loans are taken for the sinking of wells, and the purchase of bullocks, pumping plants and other improved implements. These are recoverable in instalments over a period of about three to five years. Loans repayable between 10 to 20 years are classified as long-term loans. These are used to repay old debts, purchase heavy machinery and increase the size of holdings.

3. The amount required under each of these categories is difficult to work out. It is, however, clear that there is a large gap between the funds available on reasonable terms and the requirements of the cultivators.

#### AGENCIES FOR FINANCE

4. The following agencies provide finances for the cultivators :

- (1) *Private agencies* : (a) money-lenders and landlords ; (b) commercial banks.
- (2) *Public or semi-Public agencies* : (a) the State ; (b) co-operative societies.

Until recently money-lenders and landlords were the principal source of rural credit. Legislation for the relief of debt has, however, reduced their activities and steps must now be taken to expand the system of institutional credit. With the private sources of capital drying up, the State, which formerly provided finance mostly for the relief of distress, has already assumed a greater responsibility for the financing of agricultural development. For instance, the amount of *taccavi* loans sanctioned in 1949-50 was about Rs. 15 crore as against Rs. 1 crore in 1938-39.

5. Co-operative societies also furnish a significant proportion of rural finance. There are 142,000 agricultural societies and they

advanced about Rs. 28 crore in 1949-50 as against Rs. 7 crore in 1938-39. Nearly two-thirds of this amount was used in Bombay and Madras and a little under a fifth in U.P., Madhya Pradesh and the Punjab. The co-operative credit movement in other areas has still to develop.

#### LOANS BY CO-OPERATIVE SOCIETIES

6. The experience of Bombay, Madras and other States proves that co-operative societies are the most effective institutional agency for furnishing finance. A co-operative society organised by the people for their economic and social welfare always takes into account the character of its members as well as the material security which they can offer. It can ensure that the loans are used properly. Moreover, it is also in a favourable position to recover loans, for, besides coercive action, it can bring public opinion to bear upon wilful defaulters. Finally, it is well-placed to mobilise local savings.

7. As the major part of the funds that they advance are derived from shares, deposits or loans, co-operative societies have to operate in accordance with recognised banking principles. To avoid losses they generally deal with farmers who are solvent. It is desirable that they should also try to meet the needs of other farmers who are potentially worthy of credit. This will, however, involve more risks than are normally taken by the societies. It is, therefore, only fair that the losses incurred by them on account of such additional risks should be made good by the Government. This principle has been accepted by the Bombay Government and can be followed by others. A similar procedure can be adopted for the provision of financial help to relatively undeveloped areas.

8. If co-operative societies are to expand their operations, as suggested above, their number and membership will have to be increased and their working improved. The Co-operative Planning Committee (1946) recommended that 50 per cent of the villages and 30 per cent of the rural population should be brought within the ambit of primary societies within ten years. Efforts should be made to reach this target by 1955-56.

9. The success of co-operatives will depend largely upon the efficiency of their personnel. Recently a special training course for their senior staff was organised at Poona by the Reserve Bank. Similar facilities should be available at other places also. The Commission has ear-marked Rs. 10 lakh for subsidising the training programme which has been given high priority.

10. Until they have been able to mobilise the people's savings, the co-operatives will require considerable financial and technical assistance from the Reserve Bank. Under its scheme of concessional finance the Bank already allows accommodation to the State Co-operative Banks for seasonal agricultural operations and the market-

ing of crops at two per cent below the Bank Rate. The period of repayment has also been extended from nine to fifteen months. These concessions have resulted in an increase in the sums advanced by the Reserve Bank to apex co-operative banks from Rs. 1·5 lakh in 1946-47 to Rs. 12·5 crore in 1951-52. At present, these facilities are availed of mostly by Madras and Bombay. The Reserve Bank is, however, actively reorganising the co-operative movement on a sound footing in all the States.

11. As the credit structure becomes stronger in the States, the Reserve Bank and the Government should be able to furnish increasing assistance to the co-operative societies. In four years' time the advances to cultivators through institutional agencies should reach the figure of Rs. 100 crore per annum. To achieve this goal, a detailed plan of agricultural finance and co-operative development should be worked out in every State in consultation with the leaders of the movement, the Reserve Bank and the Central Government.

#### MEDIUM AND LONG-TERM LOANS

12. While short-term loans meet the immediate and pressing needs of the cultivator, medium-term loans enable him to raise the standard of tillage and to increase output. Greater emphasis should, therefore, be placed on medium-term loans than has been done hitherto.

13. Co-operative societies do not at present receive any assistance from the Reserve Bank in respect of medium-term loans. The Bank has, however, recently agreed to make such advances up to Rs. 5 crore and the Reserve Bank Act is being amended to enable the Bank to take up this work. In view of the fact that there is a large demand for productive investment and that the co-operative structure is being expanded, the amount earmarked by the Reserve Bank for medium-term loans is not likely to prove adequate. The Commission has, therefore, set apart another Rs. 5 crore for the purpose to be spread over the next three years. With this additional provision, the accommodation likely to be available from the Reserve Bank and the funds that may be mobilised by the co-operatives themselves, the target for medium-term finance may be placed at Rs. 25 crore per annum by the time the Plan is completed.

14. Long-term loans extending up to a period of 20 years are given by 283 land mortgage banks which advanced a sum of Rs. 1 crore in 1949-50. These banks exist in Madras, Bombay, Mysore and Madhya Pradesh and may soon be established in some other States also. Hitherto the land mortgage banks have been lending money largely for the settlement of old debts. In future these funds should be used to raise production and thus create surplus savings out of which old debts can be discharged. The land mortgage banks should now give preference to those who want assistance for raising production.

15. Recently, some of the central land mortgage banks have found it somewhat difficult to raise long-term funds at sufficiently cheap rates of interest inspite of the fact that their debentures were guaranteed by the State. Consequently, it is felt that the land mortgage banks may prove inadequate as a source of long-term credit. This would hardly be in consonance with the objectives of the Plan. The Commission has, therefore, provided Rs. 5 crore to supplement the long-term resources of the co-operative movement.

16. In regard to the disbursement of this amount as well as the similar amount set aside to augment medium-term finance, the Commission has made the following recommendations:

- (i) The loans should be linked with programmes of increased agricultural production.
- (ii) Preference should be given to areas and classes not served by the co-operative credit system.
- (iii) The disbursement of loans should be through co-operative organisations. In areas where they do not exist credit should be disbursed through organisations which can eventually be developed or merged into co-operative institutions.
- (iv) The contribution to long-term agricultural finance may, among other things, take the form of purchasing debentures issued by land mortgage banks.
- (v) To implement these recommendations a detailed Plan should be drawn up by the Government of India in consultation with the Reserve Bank and other organisations concerned.

## CHAPTER XVII.

### AGRICULTURAL MARKETING

The price obtained by the cultivator for his produce has a significant effect on production and on his welfare. He is, however, often unable to secure a fair price. While commodities such as cotton and ground-nuts, require large storage space which the average cultivator does not possess, fruits, vegetables and sugar-cane are perishable. Unable to hold back their stock, a large number of small farmers compete with one another in selling their products.

2. The marketing of agricultural produce involves a number of operations. The produce must be assembled, stored, graded, standardised and transported, and a sale negotiated. Some of these operations may be performed by the farmer, but storage and sale call for specialised knowledge and adequate resources which the cultivator does not possess. Those who undertake these services, therefore, deserve a reasonable remuneration.

#### REGULATED MARKETS

3. The village money-lender advances loans to the farmer on the understanding that the latter will sell his produce to or through the former or his nominee. At the time of sale the money-lender exploits his position of advantage and indulges in unfair practices to reduce the amount payable to the farmer. The broker in a *mandi* is not less extortionate.

4. To ensure a fair deal for the farmer, regulated markets have been established in the States of Bombay, Madras, Hyderabad and Madhya Pradesh. Unauthorised deductions from the sale proceeds have been prohibited and the fees charged by brokers and weighmen fixed. These improvements have benefited the cultivators. By 1955-56, similar measures should be taken in the important markets in other States.

#### PROGRESS OF CO-OPERATIVE MARKETING

5. The benefits of a regulated market are limited in scope ; in fact, the number of middlemen and the costs cannot be reduced without a change in the structure of marketing itself. Efforts have, therefore, been made in some States to organise co-operative marketing. For example, 1,600 Cane Co-operative Unions and Primary Societies have been organised in Uttar Pradesh during the last ten years. They handle 85 to 90 per cent of the total cane supplied to the sugar factories, the average annual sales amounting to Rs. 25 crore. Besides arranging for sales, these co-operatives try to link the supply of credit with marketing. They provide the seed, manure, fertilisers and other requirements of the farmer.

Co-operative marketing of cotton is also being tried in Bombay. The co-operative societies in Karnatak handle the marketing of the produce for their members in separate lots while the Gujarat cotton growers pool their produce.

6. The progress of co-operative marketing has so far been slow. In the first place, it is not favoured by the trade. Secondly, the buyers delay payments. By the end of 1950, for instance, the sugar factories in Uttar Pradesh were in arrears to the tune of Rs. 2 crore to the Co-operative Unions. The result was that some of the co-operatives had to employ contractors to raise funds for making payments. The performance of the contractors, however, was unsatisfactory and they charged high rates. To overcome similar difficulties, the Gujarat Cotton Sales Societies established their own ginning factory and press.

7. It would thus appear that even after linking credit with marketing, co-operatives which act only as commission agents for sale are not effective and that the ownership and management of processing facilities on a co-operative basis is essential to safeguard the interests of the growers and strengthen the economy.

8. Some commodities can, however, be marketed without elaborate processing. In such cases, marketing co-operatives can have direct dealings with the consumers' co-operatives. There is considerable inter-State trade in wheat, pulses, chillies, fruits and vegetables. Marketing associations should be able to work out arrangements for imports or exports by establishing contacts with their counterparts in the other States. Similar arrangements could be also made within each State.

9. Some of the marketing societies appear to have been organised without adequate share capital. The assistance available from the State apex credit agency and the Reserve Bank for financing marketing operations depends upon the capital resources of a society. It is, therefore, necessary that the marketing associations should obtain sufficient capital from their constituents.

10. Marketing requires technical skill and specialised knowledge. Associations operating in a group of villages or in a single commodity do not command sufficient business to warrant the employment of trained people. The activities of a marketing society should, therefore, cover a fairly large area, say, a *tehsil*. Further, separate societies for individual commodities should be restricted to such staples of trade as have wholesale markets of their own.

#### STORAGE AND WAREHOUSING

11. The problem of storage is another difficulty for the societies. Most of the surplus produce in an area is assembled and sold at a *mandi*, possessing rail or road transport and banking facilities. The banks finance the marketing operations against goods

pledged to them. As the goods can be released and despatched more quickly from a *mandi* than from a rural area, it would be of advantage to develop storage facilities in the *mandis*. The available facilities are unsatisfactory and costly at these places. The co-operatives should, therefore, have their own godowns. Some of the States, particularly Madras, Bombay and Orissa are alive to this problem and modern godowns are being subsidised by them. Others would do well to follow this practice.

12. Several committees and commissions have stressed the need of warehousing facilities in the country. In the absence of warehouse receipts to serve as collateral for the promissory notes of the borrowing banks, the Reserve Bank has not found it possible to give financial assistance to co-operative and scheduled banks for financing marketing operations. The establishment of licensed warehouses has, accordingly, been suggested by the Reserve Bank.

#### FUTURE PATTERN OF DEVELOPMENT

13. Though some States have been encouraging the growth of marketing societies, no firm policy has so far been laid down for their development or applied to the country as a whole. By linking co-operative marketing with the financing of production and co-operative ownership of processing industries, production will be greatly increased and costs reduced and crop planning will also be made possible. Favourable conditions for the growth of marketing co-operatives have, therefore, to be created without loss of time. The Commission is of the opinion that processing plants established hereafter should be owned and managed by co-operative societies. If such societies do not exist already steps should be taken to organise and equip them.

14. The technical, financial and administrative problems of co-operative marketing and processing need expert study. Accordingly, a standing committee of four experts on processing and marketing should be set up at the Centre. This should assist the State Governments and co-operatives to draw up detailed schemes, and review from time to time the progress of each unit in the State.

15. As the co-operatives consolidate their position, it should be possible to bring the management of regulated markets more and more under their direction. For the present, co-operatives should be given adequate representation on the managing committees of regulated markets. When their usefulness becomes evident to the growers, the co-operatively directed committees should be allowed to levy a small charge on the produce handled by them. The funds thus collected will enable them to expand their services. In this manner it would be possible for each market to raise its own funds. On the strength of these funds, the co-operatives would be able to obtain accommodation from the bank for their operations.

## GRADING

16. For want of proper grading, agricultural products, such as cashew-nuts, black pepper, turmeric and wool, fetch low prices in foreign markets. Grading has already yielded satisfactory results in the case of tobacco and sunn-hemp. To stimulate exports, it is proposed to undertake the grading of wool, bristles, lac, sheep and goatskins, cashew-nuts, vegetable oil-seeds, oils and kapok. The scheme will cost Rs. 86·47 lakh and the amount will be raised by levying a small charge under section 3(f) of the Agricultural Produce (Grading and Marketing) Act of 1937. The details of the programme are as follows :

Year	Scope of Plan	Development Expenditure <i>Rs. lakhs</i>
1951-52	Grading of tobacco and sunn-hemp	5·06
1952-53	Grading of sheep and goatskins	14·41
1953-54	Grading of cashew-nuts, pepper, spices and lemon-grass oil	22·62
1955-56	Grading of kapok, myrobalans and other forest produce (rosin, turpen- tine, etc.) vegetable oil-seeds and oils	33·00
	Total ..	<u>86·47</u>

The average export value of these commodities is Rs. 110 crore. By grading, their value is likely to increase by 10 to 15 per cent.

17. In the interest of national health, grading is recommended for food products, particularly milk, ghee and oil. To ensure uniform standards for the whole country, specifications for the grading of agricultural commodities should be laid down in consultation with the State Governments and the Indian Standards Institution.

## WEIGHTS AND MEASURES

18. There is a bewildering variety of weights and measures in the country. To introduce a uniform system the Standards Weights Act of 1939 was enacted by the Central Government and commended to the States. The Commission feel that this measure will benefit both the producer and the consumer and should be enforced in every State.



## CHAPTER XVIII

### SOME PROBLEMS OF AGRICULTURAL DEVELOPMENT

This chapter is concerned with a number of problems of agricultural development most of which depend on research for their solution.

#### MINOR IRRIGATION AND RAINFALL

2. In India, nearly four-fifths of the cultivated area is dependent on the vagaries of the monsoon. Failure of crops in different regions is, therefore, a recurrent feature of Indian agriculture and the most effective way of raising agricultural output is to extend irrigation.

3. Irrigation works are usually classified as major and minor. Between them they irrigate 20·6 and 26·4 million acres of land respectively. Another classification is based on the agency providing irrigation. While most of the canals are State-owned, wells and tanks are generally owned by private parties. In two of the principal States, for which comparable figures are available, the area under private and canal irrigation has varied as follows during the last 25 years :—

*(In million acres)*

State average for	Irrigation by canal		Private	
	U.P.	Madras	U.P.	Madras
1920-25	2·15	3·80	5·18	5·07
1925-30	2·61	3·95	4·98	4·69
1930-35	3·15	3·88	5·00	4·77
1935-40	3·63	3·91	5·40	4·41
1940-45	3·95	4·24	5·25	4·76

It will be seen that there has been practically no increase in private irrigation during this period, while the area under canal irrigation has increased by 83·71 and 11·6 per cent in U.P. and Madras respectively. This indicates that the future scope for individual investment in irrigation works is small, and it is likely to be still further diminished by a reduction in the size of holdings consequent on land reforms. In future irrigation will have to be increasingly undertaken on a community basis with or without State assistance.

4. Small and medium irrigation works have many obvious advantages. They provide a large amount of dispersed employment, involve a relatively small outlay and can be executed in a short

period. It is also easier to mobilise public co-operation in their construction. In view of these advantages and the contribution which they can make to increased production a special provision of Rs. 30 crore has been made in the Plan for minor irrigation schemes.

5. The maintenance of these works in a proper state of repair is a matter of great importance. Frequently the beneficiaries pay no water-rate and repairs are postponed as responsibility for recovery of their cost cannot be fixed. The Commission recommends that the State Irrigation Departments should be made responsible for the management, maintenance and repair of these works and should utilise village panchayats or co-operatives, where they exist, as agencies for carrying out repairs. The beneficiaries should be required to pay a water-rate in proportion to the benefit derived by them.

6. Since much of the cultivated area must necessarily remain entirely dependent on rainfall, attention should be paid to the problems of dry farming. By stopping the rain water from running off the fields and by preventing surface evaporation, the moisture of the soil can be conserved and crops raised successfully under dry conditions. Research has been done on this important subject at Sholapur and Bijapur in Bombay and at Rohtak in the Punjab. It is clear that fair yields can be obtained in a bad year and increased yields in a normal year by following improved methods, which include the construction of bunds and embankments, proper weeding and hoeing and the use of drought-resistant varieties of seed.

#### IMPROVED SEED

7. An outstanding achievement of modern agriculture is the production of improved varieties of seed. The cultivator is now generally aware of the value of such seed and the scope for increasing yields by its wider use is very considerable ; but the arrangements for multiplication and distribution are not satisfactory and the ' improved ' seed which ultimately reaches the farmer has frequently lost its purity.

8. The Commission recommends that the multiplication and distribution of pure seed should be decentralised, as far as possible, so that the nucleus seed reaches every village or group of villages. A large number of seed farms operated by or under the close supervision of the Agricultural Department will be needed to attain this goal. There should be one such farm in every block of a Community Project, i.e., one for every group of about 100 villages. These farms could supply pure seed to the surrounding villages and the duty of multiplying it and making it available for local distribution should be laid on the owners of large farms.

9. The Agricultural Departments must be careful not to issue new seeds to cultivators without full and complete trials conclusively establishing their superiority over those already in use.

Frequent changes of seed may shake the confidence of the cultivators, besides adding to the difficulties of the extension workers.

10. For reviewing annually the technical and administrative aspects of multiplying and popularising improved seeds, a standing committee of plant breeders and extension workers should be appointed by the Indian Council of Agricultural Research.

#### MANURES AND FERTILISERS

11. The quality of the soil varies considerably in a country of the size of India. A systematic soil survey has yet to be carried out, but it is generally known that of the four chief constituents which have to be supplied to the soil, namely, organic matter, nitrogen, phosphates and potash; Indian soils are deficient in the first three but rich in the last. Soil deficiency can be made good with the help of manures, and manures may be classified as (a) organic and (b) inorganic. Organic manures may be further subdivided into bulky or concentrated manures. Bulky organic manures include farmyard waste, compost, nightsoil and green manure, while concentrated manures comprise oil-cake, bone meal, dried blood, horns and hoofs, etc.

12. The total production of dung in India is estimated at 800 million tons. Unfortunately, a large part of this is used for fuel by the cultivators. To save the dung for agriculture, recommendations have been made elsewhere for creating village plantations and for taking steps to popularise the use of soft coke.

13. Human excreta are an important source of nitrogen, phosphorous and organic matter. In the urban areas, they are usually composted with refuse, and the manure thus obtained is sold to the cultivators. Most of the State Governments have enacted legislation to make it obligatory for the local bodies to utilise the nightsoil in this way. Out of about 3,000 towns, where local bodies exist, composting is done in 1684 and the annual yield is about 1.7 million tons. The Plan provides for the extension of composting to the remaining towns. About three million tons of compost will thus be available by the end of the period of the Plan.

The utilisation of human and animal urine is even more important; but an efficient method of collecting and utilising urine has still to be devised.

14. The growing of leguminous crops and burying them under the soil is a well-known method of making good the nitrogen deficiency in the soil. The value of this practice, known as green manuring, is recognised and is commonly adopted by owners of large holdings. Small holders should also be encouraged to grow leguminous crops, especially pulses, in rotation with other crops and the State should offer inducements such as the remission of water-rate or land revenue on such crops.

15. Oil-cakes used as manure serve as carriers of nitrogen and have shown consistently good results on a variety of crops. But edible oil-cakes are valuable as cattle feed and as there is a shortage of cattle feed in the country their use as manure is undesirable. Only non-edible oil-cakes should, therefore, be used as manure. Better results can be obtained if fertilisers are used in combination with them.

16. Blood meal, horns, hoofs and meat meal, by-products of the slaughter house, can also be used to improve soil fertility. It is estimated that about 10,000 tons of dried blood could be produced from the slaughter houses in the country. Other material available from the same sources consists of skin and meat rejected by the butcher. These are mixed together and sold under the trade name of 'tankage' and may contain between three to 10 per cent nitrogen and seven to 20 per cent phosphoric acid. These products can be a source of income to municipalities if proper methods of conserving blood and 'tankage' are adopted. They will find a ready market as good fertilisers for fruit and vegetables.

17. Bone meal is a good phosphatic manure, suitable for all types of soil, but particularly for acidic soils. About 1,50,000 tons of bones are collected annually, but this is believed to be only one-fourth of the total quantity available, to judge from the number of cattle that die in a year. Even of this quantity only about one-fourth is converted into bone meal. The rest is exported as grist for which there is a considerable demand in foreign countries as it is a source of glue and gelatine. India's impoverished soil is thus deprived of badly needed nourishment. The manufacture of glue and gelatine in India is one way of stopping the export of bones. Increased crushing capacity is also required, especially in areas far away from rail-heads, so as to stimulate better collection of bones. A bone digester recently introduced from Japan may prove useful in this connection. It extracts fats and glue from bones after which they become so brittle that they can be crushed easily.

18. Turning now to inorganic or synthetic fertilisers, those most commonly in use in this country are ammonium sulphate and superphosphate, the former being a nitrogenous and the latter a phosphatic fertiliser. Both of these are being manufactured in the country. It is desirable also to investigate the possibility of manufacturing ammonium phosphate which supplies both nitrogen and phosphorus to the soil and the fertilising value of which has already been established by field experiments in different parts of the country.

19. The criticism is sometimes heard that chemical fertilisers are being introduced without full steps being taken to mobilise all the manurial resources of the organic type. The criticism, in so far as it stresses the necessity of mobilising these resources, is just; but the introduction of chemical fertilisers need not await the full mobilisation of organic manures. The two processes should and can go on simul-

taneously. Both types of manure are necessary for maintaining soil fertility. The continuous application of chemical fertilisers by themselves leads in time to a deterioration of the soil. They should be used in conjunction with bulky organic manures.

20. The problems relating to the conservation, production, distribution and utilisation of manures and fertilisers are so important that they should be kept under constant review. For this purpose the appointment of an expert Committee of the Indian Council of Agricultural Research is recommended.

#### AGRICULTURAL IMPLEMENTS AND MACHINERY

21. Improved agricultural implements save time and money and give better yields. The need for encouraging research in this field is thus obvious. The existing agricultural engineering sections in the States deal mainly with power-driven machinery. A special officer is required to devote his attention exclusively to indigenous implements. The Engineering Section of the Indian Agricultural Research Institute should be strengthened in the same manner. Besides conducting experiments with indigenous implements the special officer at the Centre should try out imported implements. He should also co-ordinate the experimental work in respect of implements carried out in various parts of the country and keep the extension workers posted with the latest developments. The results of these experiments should also be furnished by him to the manufacturers for commercial utilisation.

22. As implements have to be adjusted to crop, soil and climatic conditions, experiments should be conducted on a regional basis, i.e., for a group of States together. Accordingly, regional committees consisting of technical experts, enlightened farmers, representatives of the State Governments and manufacturers and dealers should be set up by the I.C.A.R. The committees should indicate the problems requiring solution. They would also examine the schemes drawn up by the States and review their progress periodically.

23. Along with research, the difficult task of popularising improved implements and arranging their supply has to be tackled. This would also be the responsibility of the special officer to be appointed in every State. He will have to seek the assistance of the extension staff in this work. Improved implements should be recommended to cultivators only after the most thorough trials and tests.

24. As research becomes organised and new models for implements are evolved it will be desirable to encourage small co-operative fabricating units to undertake the manufacture of these new models. This will give employment to rural artisans. Eventually, they may grow into workshops capable of making steel trunks, buckets and other useful articles.

25. Power-driven agricultural machinery came into vogue in this country during and after the second world war. Financial assistance under the Grow More Food campaign stimulated the purchase of tractors, diesel engines and electric motors. The rapid increase in the use of tractors is evident from the following figures :

				No. of tractors imported
1949-50	..	..	..	3,318
1950-51	..	..	..	4,930
1951-52	..	..	..	7,400

Tractors are particularly suitable for (a) the reclamation of waste or weed-infested land, (b) the cultivation of sparsely populated areas where there is a shortage of labour, and (c) drainage and soil conservation operations, such as contour bunding, terracing and ridging. The value of tractors has been demonstrated by the Central Tractor Organisation, which has reclaimed areas in the Terai in Uttar Pradesh and the *kans*-infested tracts of Madhya Pradesh, Madhya Bharat and Bhopal.

26. While tractors can safely be used for the above purposes, care must be taken to see that their use for general cultivation in other areas does not cause unemployment. There is no conclusive evidence that their use increases production, except where speed of operations is particularly necessary. Some data regarding the cost of reclamation by tractors are no doubt available, but a comparative study of the economics of mechanised and bullock cultivation has still to be made. The I.C.A.R. should undertake such a study for different regions and crops. But, by and large, Indian agriculture will continue to depend upon animal power for a long time to come.

#### PLANT PROTECTION, QUARANTINE AND STORAGE

27. Although no systematic study has yet been made of the damage caused by insect pests and diseases, the loss in storage alone is estimated to be about 10 per cent. The pests and diseases which attack plants are well known and so are the methods of fighting them. Preventive measures should generally be taken at the sowing stage. They do not require any special organisation at the village level and can be taken by the ordinary field staff, but special technical staff is needed to devise special measures in case of epidemics.

28. The methods used for the prevention of damage to crops by insects and pests fall under four categories :—

1. Quarantine,
2. Biological Control,
3. Cultural methods, and
4. Chemical treatment.

In the past, owing to lack of efficient quarantine arrangements, many insect pests have found their way into the country. A fumigatorium with modern equipment was, therefore, established at the port of Bombay a few months ago. Under the Plan, quarantine and fumigating stations are to be set up at Madras and Calcutta also.

29. Biological control involves the employment of insects to eradicate pests. A well-known example of such control is the use of the cochineal insect for the extermination of prickly pear. India has, in fact, made considerable headway in biological control.

30. The ravages of insects can also be checked by varying cultural practices. This method yields results without costing anything. Thus a change in the time of sowing wheat was a major factor in controlling the Hessian fly and a similar method has effectively dealt with the Tirak disease in cotton. The disadvantage of this method is that a variation in cultural practice which prevents the onset of the disease or pest usually has an adverse effect on crop yields ; and the cultivator prefers the former risk.

31. The use of insecticides, particularly D.D.T. and B.H.C., has increased considerably in recent years and the manufacture of these two insecticides in the country is visualised as part of the Plan. The possibility of using indigenous materials for the manufacture of insecticides requires to be more thoroughly explored.

#### AGRICULTURAL EDUCATION AND TRAINING

32. The success of the agricultural programme will, to a large extent, depend on the ability of the extension workers to help the farmers. Hitherto the main defect of extension work has been its reliance on propaganda rather than on demonstration. This drawback can be removed by giving the extension workers a thorough training in agricultural practice. The Manjri pattern of two-year schools in Bombay is recommended as a model for agricultural schools. In these institutions the work on the farm is done by the students themselves. As the full requirement of the development programme cannot be met by the existing agricultural schools, 30 special training centres have been organised with the help of the Ford Foundation. Ten more regular agricultural schools are also to be started during the period of the Plan.

33. Twenty-two agricultural colleges in the country turn out about 1000 graduates annually. To meet the lack of facilities for practical work, the Indian Council of Agricultural Education has suggested that these institutions should provide intensive practical training under rural conditions for a period of two months every year.

#### AGRICULTURAL RESEARCH

34. A vast amount of knowledge has been acquired by research and some striking results have been achieved. Many of the fruits of research have already come to form a part of an enlightened cultiva-

tor's agricultural practice. The absence of a properly trained extension service has, however, retarded this process. Under the Plan, it is proposed to organise an extension service throughout the country within ten years. Now that its foundations are being laid, it is of the utmost importance that the results of research for the different types of soil, climate and region should be at the disposal of the extension workers, and the I.C.A.R. should actively help in the preparation of compendiums of useful information.

35. Research is a continuous process. As fresh problems arise, new knowledge has to be gained. With this in mind Dr. Stewart recommended the location of research and experimental stations in selected centres for each 'crop-soil-region.' Unless this is done or existing research centres are reorientated, extension work may come to a standstill. Such institutions have helped in the agricultural development of Japan, and the Commission feel that their establishment should be an important concern of the Imperial Council of Agricultural Research and the State Governments.

36. The I.C.A.R. was constituted in 1930 to promote, guide and co-ordinate agricultural research in the country. The growth of research by organisations over whose research programmes it had imperfect control e.g., the Commodity Committees and the Central Research Institutes, has to some extent blurred its original functions. If the I.C.A.R. is to discharge its statutory duty of co-ordinating all agricultural research in the country, it must be in a position to review and approve all research programmes, whether of the Commodity Committees, State Governments or Central Institutes, and to give indications for the direction of future research. It is also desirable that progressive cultivators, traders and processors should be associated with the drawing up of research programmes.

37. India is now embarking on a vast programme of agricultural development. The pace at which it can proceed depends largely on the speed with which solutions to the practical problems of the cultivators are found by research workers. The whole organisation of agricultural research has to be geared to fulfil this task. The Commission feels, therefore, that a stage has been reached when a high level committee should examine afresh the organisation of agricultural research in India and consider in particular the changes that should be made in the existing Commodity Committees, Central Research Institutes and in research in the universities so that they can answer the increased demands for research that will be made upon them.



## CHAPTER XIX

### ANIMAL HUSBANDRY

Cattle occupy an important place in the rural economy of India. Their annual contribution to the gross national income is about Rs. 1,000 crore, excluding the value of the animal power for draft purposes. To a large number of Indians, who are vegetarians, milk and milk products also constitute the main source of animal protein.

2. According to the 1951 census, there are 150 million cattle and 43 million buffaloes in India. Unfortunately, however, the existing fodder and feed resources are not adequate for maintaining this large cattle population. The quantity of fodder available is only 78 per cent of the requirements while the concentrates and feeds suffice only for about 28 per cent of the cattle. Moreover, while there is a great deficiency of good milch cows and working bullocks, there is a surplus of useless or inefficient cattle and the latter constitute a great strain on the scanty fodder and feed resources of the country. The problem is therefore two-fold, to improve the breed and to remove old and unserviceable cattle.

3. Work on cattle improvement has been done by the Government, by cattle breeders and by charitable agencies. Among the well-defined breeds in India, there are three broad divisions, milch, draft and dual purpose breeds. The ultimate objective of the breeding policy of the Government is to develop most breeds into dual purpose animals. At present approximately 750 farm-bred pedigree bulls are distributed annually by the Government in different States. There are also approved bulls owned by private individuals. But the total number meets less than 0.5 per cent of the requirements of the country and no concentrated effort is made to achieve sustained results. Consequently the progeny of the pedigree bulls have access to scrubs and the improvement achieved is nullified. Arrangements have to be made for the production and use of a sufficient number of superior bulls of known parentage and productivity and for the elimination of inferior and unapproved bulls.

#### KEY VILLAGE SCHEME

4. The key village scheme initiated by the Government of India aims at establishing key villages throughout the country for this purpose. Each centre consisting of three to four villages will have about 500 cows of over three years of age. Breeding will be confined to three or four superior bulls, all undesirable bulls will be removed or castrated and artificial insemination introduced. Records of pedigrees and milk production will be maintained and measures taken for proper feeding and disease control.

The target under the Plan is to establish 600 key villages, 150 artificial insemination centres and 225 bull rearing farms. When in full operation, the scheme is expected to produce about 60,000 bulls annually. Already 60 artificial insemination centres and 150 key villages have started working.

Other matters, such as developing common grazing grounds, growing fodder crops in suitable rotation, preserving surplus monsoon grass, etc., will also receive attention in the selected villages. In order to facilitate the castration of scrub bulls and to protect animals against contagious diseases, legislation will be necessary in those States which have not already undertaken it.

#### GOSADANS

5. Simultaneously with the improvement of breeding, old, infirm and useless cattle will be segregated and sent to *gosadans* located in waste lands, forests and other out-of-the-way places with grazing facilities. The male stock will be castrated. The remains of dead animals, such as hides, skins, horns, hoofs, etc., will be utilised by setting up a small tannery at each centre. It is proposed to establish 160 *gosadans* at a cost of Rs. 97 lakh.

#### FODDER

6. The effects of better breeding can be largely negated if the animals are not properly fed and looked after. The supply of green fodder can be increased by introducing leguminous fodders in rotation in irrigated areas. At the same time, it is proposed to explore the possibility of growing kudzu vine and clover, and of making hay in the valleys of the foothills where there is an abundance of grass after the monsoon. It has been suggested elsewhere that the use of oil-cakes as manure should be discouraged, as they are a valuable cattle feed.

#### DISEASE CONTROL

7. The benefits of improved breeds and better feeding can easily be lost through epidemics. Apart from deaths, the vitality and working efficiency of the animals are considerably reduced by disease. Of all the common animal diseases, rinderpest is the most important and is responsible for about 60 per cent of the mortality of Indian cattle. A sum of Rs. 15.7 lakh has, therefore, been set aside under the Plan for eradicating this disease by using the newly evolved lapinised vaccine.

The number of veterinary dispensaries in the country is also to be increased from 2,000 to 2,640.

#### POULTRY

8. Poultry keeping is an important subsidiary industry and can be a useful source of income to the poorer classes in the rural areas.

Eggs are valuable food and their increased consumption will benefit the people. At present, the number of poultry in India is about 70 millions. The ordinary village hen lays only about 50 small eggs in a year. Better breeds are likely to improve both the number and size of eggs. The Indian Veterinary Research Institute has evolved an Indian strain which would increase the yield by nearly 100 per cent. This strain should be tested under different soil and climatic conditions. Ranikhet disease has so far been a serious handicap to poultry farming in this country. An effective vaccine has now been produced and the prospects of poultry raising have improved in consequence. The State Governments propose to spend Rs. 25.15 lakh during the five year period to encourage poultry farming. Selective breeding and development of poultry also form part of the key village scheme.

#### SHEEP AND WOOL

9. The 39 million sheep in India are an important source of wool and meat. On an average, 55 million lb. of wool are produced every year and 31.6 million lb., worth about Rs. 4.3 crore, are exported. The average yield per sheep, however, is only two pounds of wool which is very low and can be considerably improved. The Indian Council of Agricultural Research has, therefore, drawn up a Plan for opening three regional centres in the U.P. hills, Rajasthan and the Deccan plateau where the quality of the sheep will be improved by selective breeding in the plains and by crossbreeding with the Merino in the hills.

#### VETERINARY EDUCATION AND RESEARCH

10. There are at present nine veterinary colleges in India with an annual output of 275 graduates. In addition, there is the Indian Veterinary Research Institute of the Central Government at Izatnagar for post-graduate training with a sub-station at Mukteswar. In the Five Year Plan, Rs. 84.43 lakh have been provided for veterinary education and training. Ninety-two per cent of this amount will be spent in Part A States to train veterinary graduates and stock-men. Workers at the village level will also be trained to give first aid to cattle.

#### THE PROGRAMME

11. The total expenditure on the scheme for livestock and animal husbandry amounts to Rs. 1,473.92 lakh. The details are as follows:—

			<i>Rs. lakhs</i>
(A) Central Government.			
(i) Key Village Schemes	..	..	293.53
(ii) Gosadans	..	..	97.15
(iii) Rinderpest	..	..	15.70
(iv) Other Schemes	..	..	5.64
			<hr/>
Total	..	..	412.02

(B) State Governments.	..		<i>Rs. lakhs</i>
(i) Part A States	..	..	794.70
(ii) Part B States	..	..	194.60
(iii) Part C States	..	..	71.60
			<hr/>
	Total	..	1,060.90
	Grand Total	..	<u>1,472.92</u>

## CHAPTER XX

### DAIRYING AND HORTICULTURE

Milk is an important food especially in a country like India where most people are vegetarians. Unfortunately, however, dairy farming is very backward in India. The average yield of milk per cow is only 413 lb. which is about the lowest in the world. According to the 1951 census, the average consumption of milk and milk products per head works out at 5.5 oz. which amounts to a sixth of a seer per day. Except for the Punjab and Rajasthan, all the major States are deficient in the consumption of milk, judged by the standard of 10 oz. per day recommended by nutrition experts. The production of milk in the villages is on a small scale and scattered, the daily average being only 2.5 md. per village. Wherever there is a surplus of milk, it is generally used for making ghee and *khoa*.

2. The demand for milk and milk products comes mostly from the urban areas ; and yet the supply of milk to these areas is unsatisfactory both in quality and quantity. At present, 60 to 70 per cent of the demand is met by cattle living within the municipal limits. These are generally kept in insanitary and congested conditions which affect adversely their health, milk yield and breeding capacity. The majority of these animals are sent to the slaughter house as they become dry. Cattle maintained in this way are highly uneconomic and also a drain on the country's cattle wealth. Thirty to 40 per cent of the remaining demand is obtained from the surrounding villages. The milk trade is in the hands of milk vendors whose methods of handling and transporting milk are insanitary and far from efficient. A few *pinjrapoles*, *gowshalas* and co-operative societies are also engaged in dairy farming, but they meet only a fraction of the total requirements. The urban consumers have to pay a high price for milk in spite of its poor quality. In fact, the retail price of milk in India is higher than in any other important country.

3. An increase in the production of milk is, therefore, urgently needed. The plans drawn up by the States include 27 schemes for dairying and milk supply at an estimated cost of Rs. 780 lakh ; but except in the case of Bombay, the provision is inadequate and the milk supply of only a few cities will be improved by the schemes envisaged in the Plan.

4. The problem cannot, however, be solved by Government initiative alone. The work should be taken up jointly by the States, the municipal committees, the local *pinjrapoles* and *gowshalas* and producers' co-operatives. The successful work done in towns like Delhi and Poona for organising milk production and distribution on co-operative lines points the way to future development. It is suggested that a milk board should be set up for each urban area. It should be

a statutory body with a paid executive, consisting of representatives of producers, distributors, consumers, municipalities, health authorities and the State Government. The board would be responsible for organising milk production in the suburban and urban areas through a co-operative which would supply fodder, feeds and other requisites, advance loans to members for the purchase of cattle and arrange for the collection of milk and its distribution through its own depots or through licensed vendors and agents. The Government, the municipal committee and the co-operative bank should furnish the necessary financial assistance. The board should include in its plans provision for the removal of cattle from the urban area and for settling them and their owners in villages around the cities. It would also deal with matters relating to quality control and the prices of milk and milk products.

It is also suggested that some of the key village centres should be located in areas close to cities. The increased supply of milk obtained as a result of improved breeding and management will thus find a ready market.

5. The problem of milk production and its greater use in rural areas is largely dependent for its solution on a general rise in agricultural production. Improvement in milk yield will take place as a result of the better breeding provided for in the key village scheme and of the increased fodder and feeds which an improved agriculture will make available.

#### HORTICULTURE

6. Fruit and vegetables, like milk, can be a very useful element in the diet of the people. The annual production of fruit in India is estimated at about six million tons and that of vegetables at 4 million tons. This permits the consumption of only about 1.5 oz. of fruit and 1.3 oz. of vegetables per head per day against 3 oz. of fruit and 10 oz. of vegetables recommended by nutrition experts for a balanced diet. There is, therefore, a wide scope and need for increasing the production and consumption of fruit and vegetables. Increased production can be brought about partly by enlarging the area devoted to their cultivation and partly by adopting improved agricultural practices so as to get a better yield from the existing area. The State plans envisage a total expenditure of Rs. 121.22 lakh on horticultural schemes such as research on fruits and vegetables, multiplication of vegetable seeds, supply of nursery plants, etc.

7. For the further development of horticulture consideration should be given to the following measures:—

- (i) fruit growers in the principal fruit-growing regions should be assisted to organise themselves on co-operative lines for raising nursery plants, controlling pests and diseases, and for marketing.

- (ii) suburban belts around large towns should be developed for raising fruits and vegetables on a co-operative basis and in urban areas kitchen gardens should be encouraged by supplying seeds and plants, and
- (iii) the preservation of fruits and vegetables should be expanded on modern lines.

Fruit and vegetable preservation is encouraged in other countries in various ways, such as (i) the supply of sugar at the world market rate (ii) import of machinery and other essentials either duty free or at concession rates and (iii) reduction in freight rates for the transport of both the raw materials and the finished products. With the development of horticulture the adoption of similar measures would have to be considered.

8. A Fruit and Vegetable Board should be established in the Food and Agriculture Ministry for developing horticulture] and encouraging fruit preservation on a country-wide basis.



*Land reclamation in West Bengal*





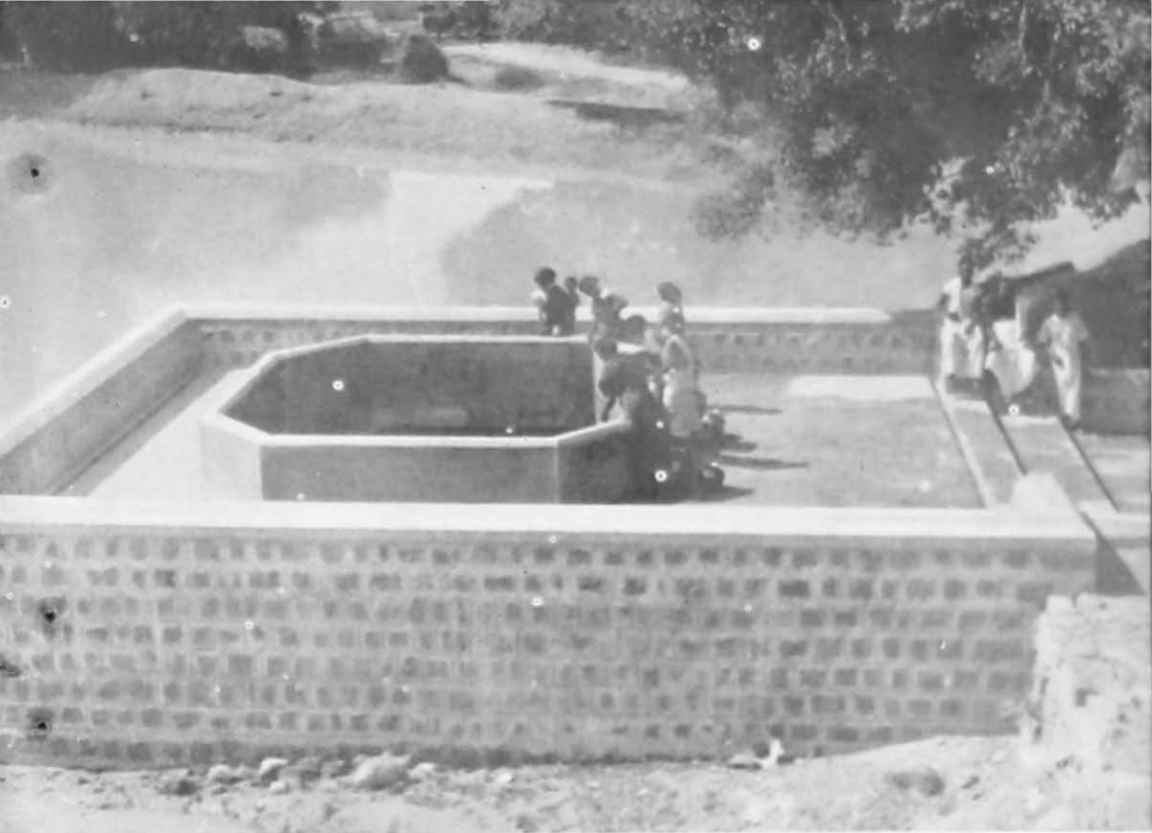
*Manure and improved seed produced this towering crop of bajra*



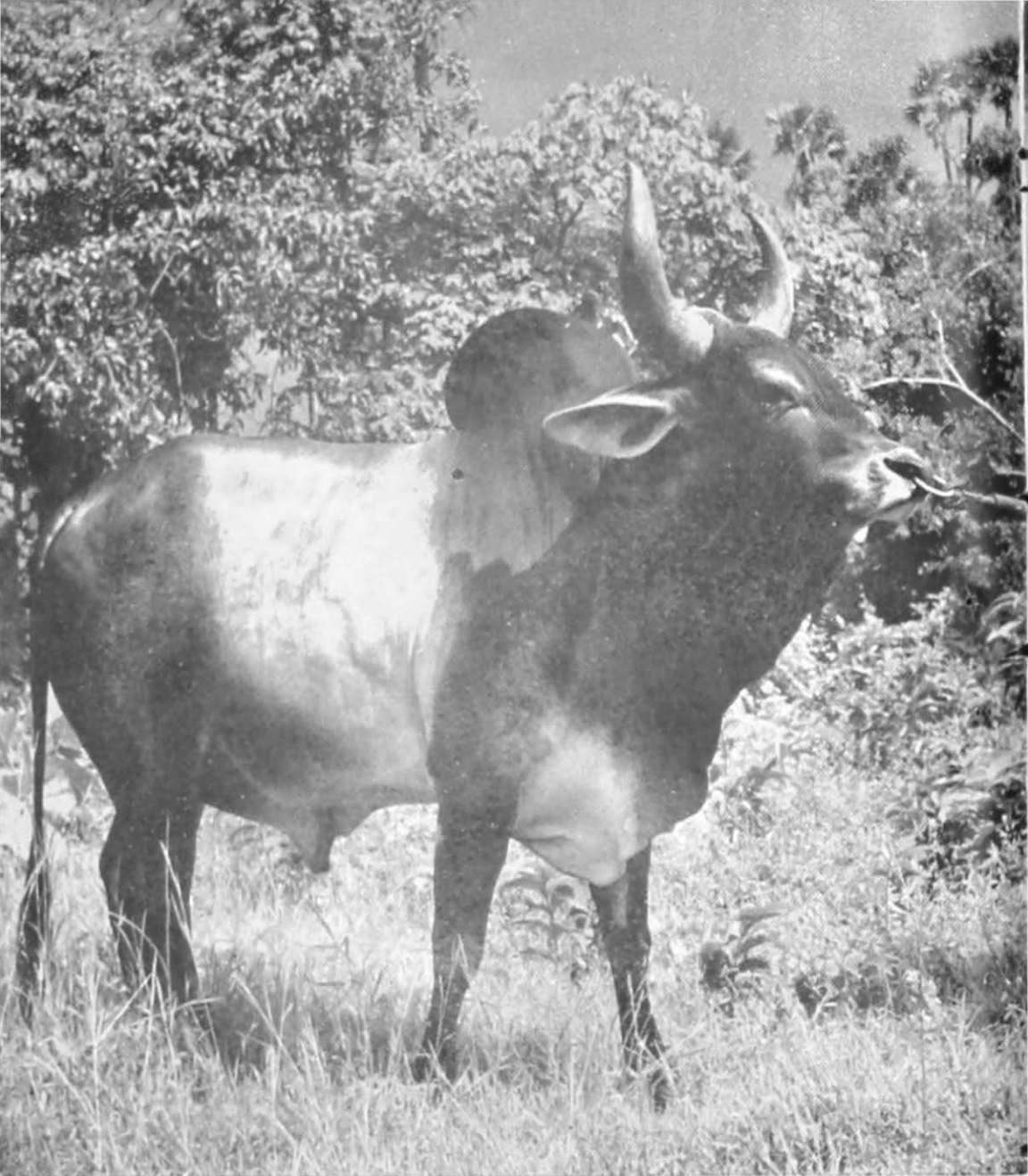
*Good plough-cattle such as these are needed in greater numbers*



*Starting life afresh. Members of a co-operative society of displaced persons clearing land near Delhi*



*A well built entirely by villagers, Government contributing only technical advice*



*Pedigree bull for upgrading cattle under the key-village scheme*



*Road building by voluntary workers*





*Damodar Valley Project. Construction of the barrage across the river at Bokaro with the steel structure of the power station in the background*

*Damodar Valley Project. Tilaiya dam under construction*





*Hirakud Project. Railway and road bridge over the Mahanadi river*

*Hirakud Project. Left flank wall under construction*

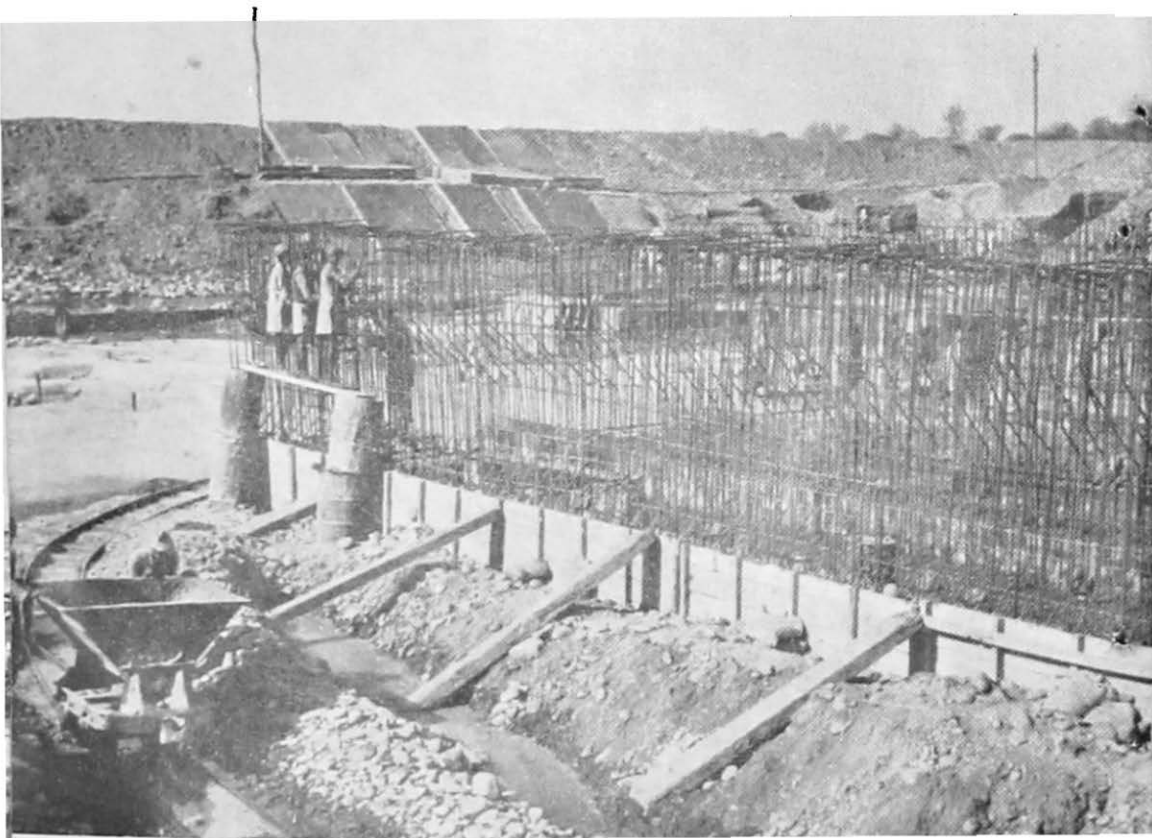






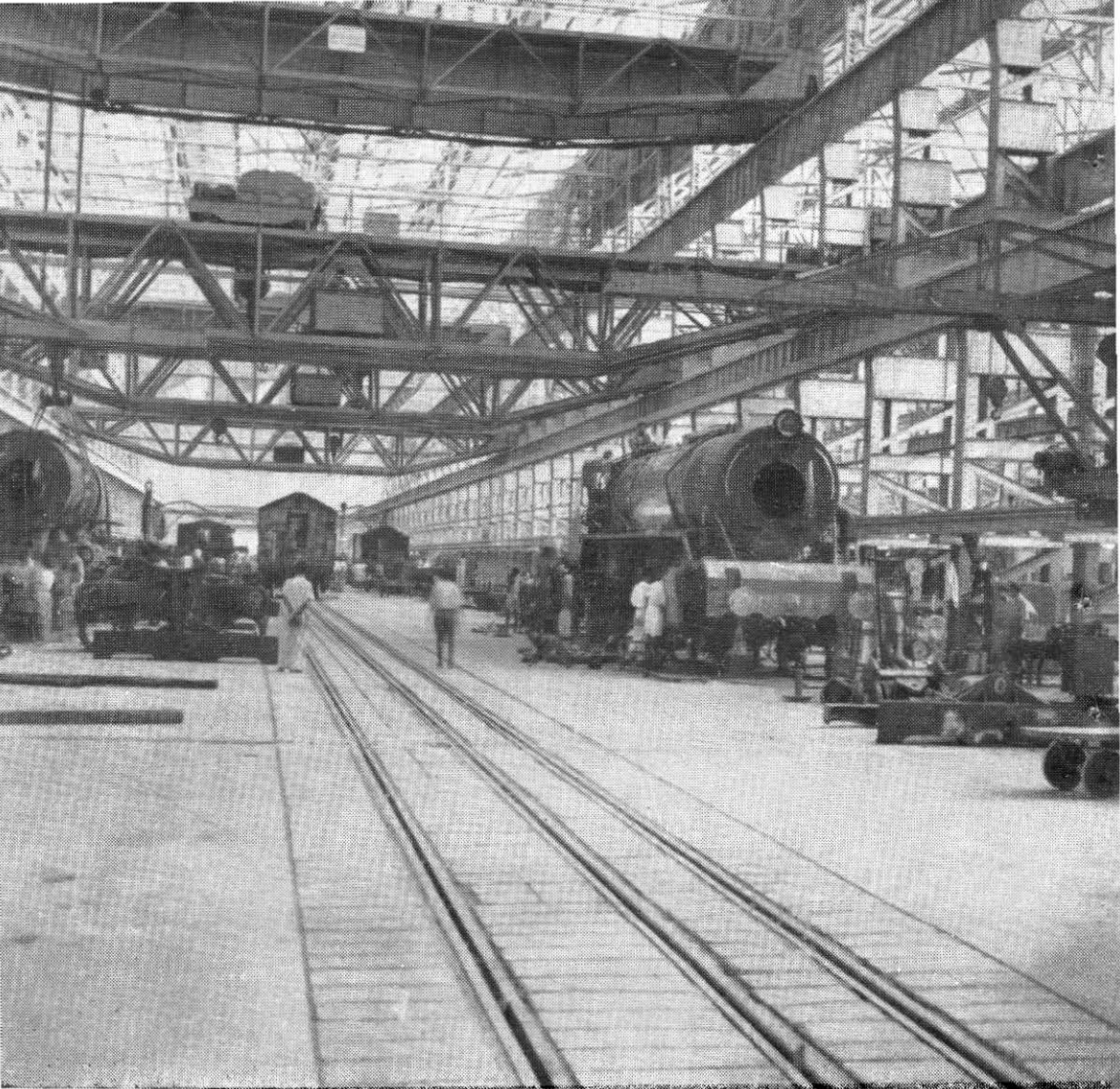
*Tungbhadra dam*

*Bhakra Nangal Project. Construction of cross drainage works for hill streams*



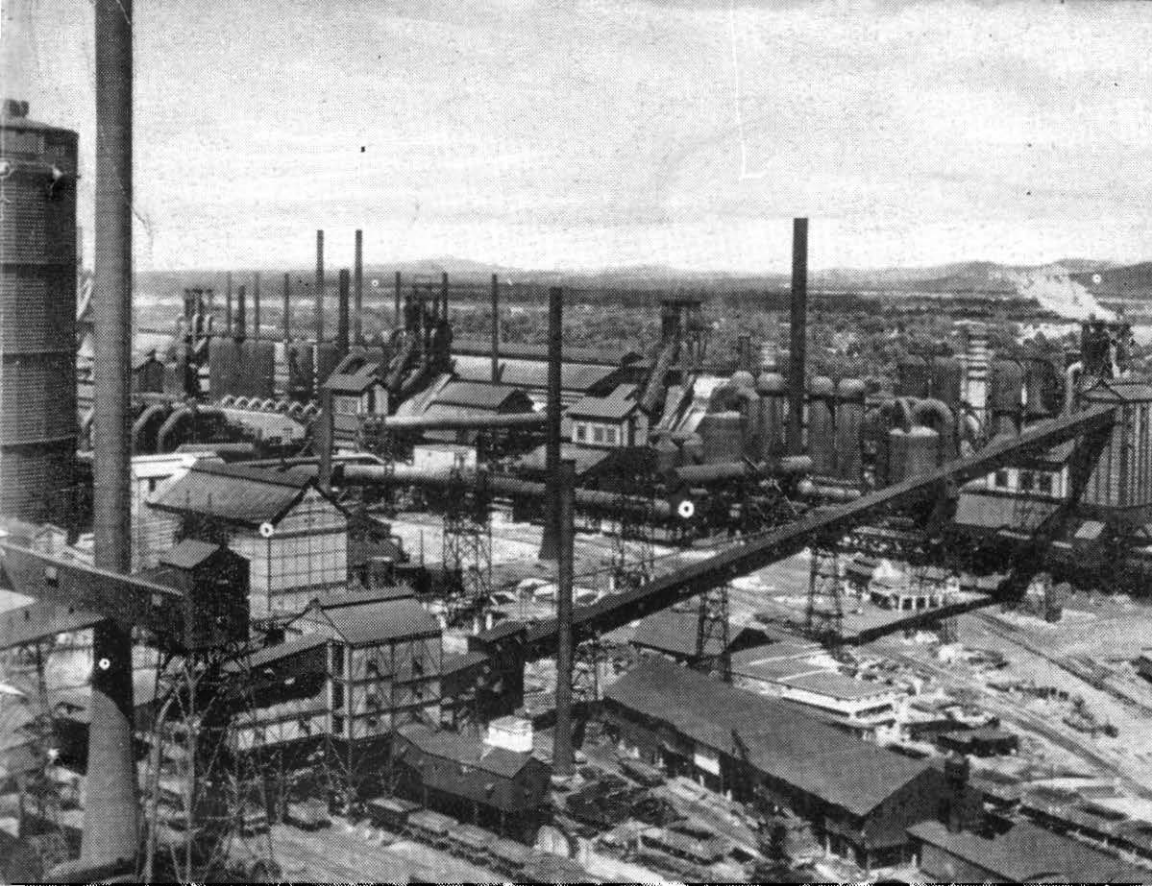


*Miner extracting mica—one of India's most valuable minerals*



*An assembly shop at the Chittaranjan Locomotive Factory*





*The Iron and Steel plant at Tatanagar, one of the largest in the world, is being extended as part of the Five Year Plan*

*The Sindri Fertilizer Factory, capable of producing 350,000 tons of ammonium sulphate per annum*





*S.S. Jalapankhi, the fourth ship built at the Visakhapatnam Shipyard .*



*Preparing for the anti-malaria campaign. Students at the Malaria Institute, Delhi*



*The Plan provides for additional facilities for training nurses. Nursing probationers at a lecture*



*Child welfare centre*





*Welfare workers learning handicrafts*



*Basic education. Weeding cotton fields*



*A small-scale industry. Lace making*

## CHAPTER XXI

### FORESTS

Forests play a vital role in India's economy. They are an important source of fuel, they provide grazing for cattle and they supply raw materials like timber, bamboo, lac, gum and *katha* for domestic, industrial and agricultural purposes. They also help to conserve the fertility of the soil and maintain the water regime of the land. They protect hilly areas against excessive soil erosion and flat land from desiccation and erosion caused by winds.

#### FOREST AREAS

2. In 1949-50, the area under forests in India was 147.7 million acres, i.e., 18 per cent of the total land area. The Forest Policy Resolution of May 12, 1952 suggests that "India, as a whole, should aim at maintaining one-third of its total land area under forests." The gap between this target and the area now under forests is very large. Furthermore, the forests are confined mainly to the Himalayas, the Vindhyas and the Deccan. The Indo-Gangetic basin is almost bare. A planned extension of regular forests depends on how far suitable waste areas are available and on the demands made on them for agricultural expansion. An immediate reconnaissance survey should, therefore, be made of waste lands in order to evolve a system of balanced and complementary land use.

3. Meanwhile, the Central Board of Forestry should indicate the proportion of the area that should be under forests in each State in accordance with the principle of proper land use. Deforestation may be permitted for the extension of permanent agriculture only where the area under forests is above this proportion or where some equivalent area can be afforested. At the same time, the area under forests should be steadily extended over waste lands suitable for the purpose.

4. The extension of the area under regular forests must necessarily be a long-term plan. Considerable improvement can, however, be brought about by renovating areas which have been deforested or have not been properly managed. For instance, about 40 million acres of zamindari forests have recently vested in State Governments and many of these, having been over-felled in recent years, require re-afforestation. An adequate administrative organisation is also required to be set up where the state-managed forest area has expanded owing to the merger of the former princely States. Provision for this has been made in the Plan.

5. There is also immediate scope for extension in three directions, namely afforestation to prevent soil erosion, the extension of tree lands and the establishment of village plantations. Measures for

preventing soil erosion have been outlined elsewhere. The planting of trees can be extended with the co-operation of the public and local bodies. Useful work in this direction has been initiated as a part of the Van Mahotsava programme and should be systematically organised.

#### VILLAGE PLANTATIONS

6. To increase the supply of fuel and fodder, the planting of trees should be taken up in the villages. The present production of fuel wood is estimated at five million tons which means that less than half a maund (0.02 tons) is available per capita per annum as against an average consumption of a ton or more in the U.S.A. and 0.34 tons for the world as a whole. In the Indo-Gangetic plain, there is an acute scarcity of fuel and fodder in the rural areas. This has resulted in the practice of burning cow-dung which should normally be used to replenish the fertility of the soil. Village plantations for the supply of fuel and fodder should, therefore, be extended in selected localities and protected. A beginning should be made in the areas selected for Community Development Projects.

#### SOFT COKE

7. Another way of augmenting the supply of fuel and conserving cow-dung for manure is to popularise the use of soft coke in the rural areas, particularly in the Indo-Gangetic plains. The need is highest in these areas and it is relatively easy to supply them with soft coke owing to the proximity of the coal-fields. Its sale should be organised through recognised agencies on a no-profit-no-loss basis and the aim should be to sell an additional one million tons of soft coke for consumption in the rural areas by 1955-56. The question of reviving the Soft Coke Cess Committee, which was intended to popularise the use of soft coke but which ceased to function during the war, is under consideration.

#### TIMBER

8. Production of timber increased during the war when there was considerable over-felling of trees, but has since declined and now amounts to about 1.8 million tons per annum. Including imports the total quantity available is approximately 2.1 million tons. About 73 per cent of the total is utilised by private consumers and the rest by the Government. Since the war, the demand for timber for the needs of defence has decreased, but that for domestic and building purposes has grown considerably owing largely to increased urbanisation and the rehabilitation programme. Furthermore, as steel is far short of requirements, it has become necessary to conserve steel and replace it by timber. Treated timber should, therefore, be used for telephone, telegraph and electric power lines as is done in most European countries. It would be possible to obtain annually about 50,000 poles from the Andamans and 30,000 poles from the Sunderbans and the Maha-

nadi areas. The Central and State Public Works Departments should explore the possibility of greater use of treated timber for building and engineering.

9. These measures will result in an increased demand for timber, and more timber will have to be obtained either from increased yields per acre or through development of potentially exploitable forests, which have so far not been worked owing to lack of communications. The State plans provide Rs. 104 lakh for the development of communications in the forest areas; and schemes for exploiting forests which are at present inaccessible should be worked out in detail.

10. These are, however, essentially long-term measures. In order to step up immediately the availability of timber, substitute species like *salai* and other perishable trees should be utilised after proper seasoning and treatment. Seasoning kilns and treatment units should therefore be installed in every Government saw-mill and the railways should increase the number of their seasoning kilns and treatment plants to cover their entire requirements of timber.

11. With the adoption of the above measures, the timber available is expected to increase by 100,000 tons. Another 100,000 tons can be obtained by developing the north Andamans. About 60,000 tons may also be obtained by a systematic exploitation of private forests which now vest in the State Governments owing to the abolition of zamindari. The total amount of timber available by the end of 1955-56 would thus increase by about 200,000 to 250,000 tons or 10 per cent.

#### FOREST INDUSTRIES AND MINOR FOREST PRODUCE

12. Besides supplying timber and fuel, the forests are an important source of raw materials for the match-wood, ply-wood and paper industries and also potentially for the rayon industry. The programmes for the development of these industries are outlined elsewhere. To meet the expansion of the match industry, supplies of timber from the Andamans will be increased by about 45,000 tons by 1955-56. As regards ply-wood timber, supplies from the Andamans may go up by about 30,000 tons and it may be possible to obtain an extra 20,000 tons by utilising timber like mango. Bamboo is the principal forest product used in the manufacture of paper and its extraction from remote areas involves a considerable outlay of capital, but long-term leases direct to the paper mills should facilitate the development of unworked areas. Similarly for newsprint and rayon, fir logs have to be extracted from distant regions in the Himalayas where they are available in plenty. New methods of doing this are being tested.

13. The forests also yield such products as lac, tanning materials, gums and resins, medicinal herbs, etc., the annual value of which is estimated at Rs. 303 lakh. Two of these products, namely, lac and myrobalans, are important articles of export,

During 1950-51, for instance, India exported seed lac, stick lac and shellac worth Rs. 11·87 crore and myrobalans and their products valued at Rs. 1·32 crore. There is scope for increasing the export of these products if they are graded and their collection is intensified. There is provision in the Plan for introducing grading of forest produce.

#### GRAZING LANDS

14. The grazing in State forests yields about Rs. 95 lakh annually. More important still, it provides fodder for about 13 million cattle, three million buffaloes and nine million other animals. Cheap forest grazing has, however, a demoralizing effect. It leads to the vicious spiral of reckless increase in the number of cattle, followed by a shortage of forest grazing, reduction in the quality of the herds and further increase in their numbers to offset the fall in quality. Free and indiscriminate grazing in the forests is thus a serious disservice to cattle breeding. The cultivators and other residents in the rural areas should, therefore, be allowed to graze their cattle free of charge only to the extent of their own agricultural requirements or for domestic milk consumption. All animals over and above these requirements should be treated as part of a commercial enterprise and grazing fees charged at rates corresponding to the value of the cattle produce.

15. Considerable grazing lands are still available in the ryotwari areas, which are usually known as village commons. They have long been neglected and are subject to continuous soil erosion. Rotational grazing should be introduced in such lands. If this cannot be done, they should be planted with trees or cultivated rather than be left to suffer further erosion to the detriment of cultivation in the neighbouring areas.

#### FOREST ADMINISTRATION

16. Although forests fall within the sphere of the State Governments, their importance in the national economy requires that there should be some measure of centralised co-ordination of forest policy. It is recommended, therefore, that a summary of the prescriptions of the working plans of State Governments should be forwarded to the Inspector General of Forests for his scrutiny and comment. Inter-State conferences should also be organised on a regional basis from time to time in order to enable forest officers to exchange ideas on technical problems.

#### FOREST RESEARCH AND EDUCATION

17. The Forest Research Institute at Dehra Dun has done valuable research work on forests and forest products. Besides evolving methods for preserving timber and bamboo from attacks of pests and diseases, the Institute has helped to establish industries for the manufacture of paper, ply-wood, resin and turpentine, santonin and several other commodities. But in order to bring the results of

research home to the public, a proper documentation office is necessary, and a closer liaison should be established between the Institute and industries.

The need to establish a separate research centre in the South should also receive attention.

#### FOREST TRIBES

18. Various tribes inhabit the forest areas measures for whose welfare form part of the programme for the advancement of backward classes, described elsewhere. The contractors, through whom the bulk of the forest produce is collected tend to exploit these simple people. In Bombay co-operatives of forest tribesmen have been successfully organised to replace contractors and this should be the policy elsewhere. The forest department should be made responsible for organising these co-operatives.

19. The shifting cultivation practised by some tribes has caused heavy damage to many forests. To wean them from this practice will take time, but gradually they must be induced to adopt a settled and more intensive form of agriculture. Where possible, they should be settled on cultivable lands well away from the forests, or taught terraced cultivation. In those areas where fruit can be grown the improvement of communications and the introduction of better varieties will give a stimulus to fruit cultivation. These measures will help to induce the tribal people to abandon the wasteful system of shifting cultivation and to take to settled agriculture.

#### THE PROGRAMME

20. In a programme of forest development priorities in respect of particular items may vary from region to region, but in general these would be :—

- (i) strengthening the forest administration where additional forests have come under State control ;
- (ii) renovation of areas which have been over-exploited ;
- (iii) afforestation where large-scale soil erosion has occurred ;
- (iv) development of forest communications ;
- (v) development of village plantations ;
- (vi) stepping up supplies of timber by increased use of non-conventional species after proper seasoning and treatment.

Based on these priorities the forest plan provides for the following expenditure :—

			<i>Rs. lakhs</i>
1. Forest development	..	..	611·3
2. Administration	..	..	249·4
3. Forest industries	..	..	49·5
4. Education and training	..	..	39·3
5. Research	..	..	10·0
			<hr/>
Total	..	..	959·5
			<hr/>

Forest development schemes include provision for the development of communications, soil conservation, village plantations and improvement of private forests and waste lands.



## CHAPTER XXII

### SOIL CONSERVATION

Soil conservation in its widest sense includes not only control of erosion but all other measures which aim at maintaining the productivity of the soil at a high level. This chapter, however, deals only with measures for the control of soil erosion. Large areas in the country have been rendered useless as a result of soil erosion and still larger areas have been partially affected and their productivity reduced. Sheet erosion, which consists of the washing away of the fertile top layers of the soil, is most widely prevalent and causes enormous losses every year. Gully erosion, which generally follows in the wake of sheet erosion, is steadily on the increase. Along the margins of the Rajasthan Desert erosion also results from wind action and the overlaying of arable lands by desert sands.

2. The most important cause of erosion is the destruction of forests and other vegetation on sloping lands, the margins of deserts and other areas susceptible to erosion. Considerable erosion also results from faulty practices on farm-lands themselves, such as failure to plough along the contours on sloping lands and to observe proper crop rotations. Much damage too originates from neglect of fallows, grazing grounds and uncultivated waste lands.

3. To control erosion and restore the productivity of eroded lands, the following measures are necessary:

- (i) Afforestation and preservation of forests by scientific management.
- (ii) Improvements in farming practices. These include such measures as ploughing along the contours on sloping lands, instead of up and down; proper crop rotations; application of adequate manures and fertilisers; care of fallows and uncultivated land.
- (iii) Engineering measures. These include the construction of bunds and terraces, channels for the drainage of surplus water, gully plugging, etc.

4. In some States, measures to control erosion have been in progress for a number of years, but the problem has not so far been dealt with on a national scale. The programme for soil conservation proposed in the Plan, albeit modest in comparison with the magnitude of the problem, marks the beginning of a country-wide effort to tackle it. Since very little work has been done in the matter so far, the scope for undertaking a bigger programme at this stage is limited. Data on soil characteristics and the type and severity of erosion in different parts of the country are lacking, and there is a shortage of

personnel with the necessary training and experience. During the period of the Plan, these limitations will be largely overcome. The administrative machinery and survey and research organisations will be set up at the Centre and in the States, essential data collected and suitable legislation enacted. Each State will have to establish a Land Utilisation and Soil Conservation Board which will be responsible for drawing up a soil conservation programme after a rapid assessment of the erosion problem, in the State. One or more areas of suitable size and as representative as possible of larger regions, will be selected for work during the period of the Plan. States which need it will be able to obtain assistance from experts at the Centre for framing or subsequently executing their programmes. In addition to the expenditure, which the State Governments will incur in this connection, Rs. 2 crore are being provided by the Central Government to be spent on these programmes during the period of the Plan.

#### SOIL CONSERVATION ASSOCIATIONS

5. As much of the soil conservation work has to be done by the farmers themselves, they should be encouraged to form co-operative associations for this purpose, which should be recognised by law if a specified proportion of the farmers in an area decide upon their establishment. All farmers in areas covered by such associations would then be required to make such improvements in their farming practices as the association might enjoin. Such associations should be shown preference in the matter of receiving technical guidance and financial help from the Government for approved soil conservation programmes.

#### LEGISLATION

6. The States will have to enact legislation giving them powers

- (i) to effect improvements in the farmers' fields and to divide the costs between them and the State ;
- (ii) to constitute farmers' co-operative associations ; and
- (iii) to declare certain areas "protection areas" and restrict certain practices in them so that much larger areas may be protected against erosion, floods, silting or desiccation.

#### RESEARCH AND DEMONSTRATION

7. The Plan provides for the establishment of a Soil Conservation Branch at the Forest Research Institute, Dehra Dun, at which research in various problems connected with soil conservation will be undertaken. In addition six research and demonstration centres will be set up in different parts of the country in areas of widespread erosion which have been selected for soil conservation work during the period of the Plan.

8. It is also proposed that an all-India survey of soils and land utilisation should be undertaken to collect data on soil characteristics

and the present position regarding land use for the preparation of a long-term programme of soil conservation. This survey should be made by a central agency so as to ensure uniformity in methods of classification, mapping, etc.

#### SOIL CONSERVATION IN COMMUNITY DEVELOPMENT PROJECT AREAS

9. In the community project areas located in the plains, soil erosion is not a major problem. But in the hilly regions, where the fertile elements in the soil are continually washed away by erosion, soil conservation measures should form an important part of the development programme. Similarly in the case of project areas in the desert and semi-desert parts of the country, such as Rajasthan, afforestation and the creation of vegetation belts composed of trees and soil-binding grasses should be included in the development programmes.

#### SOIL CONSERVATION IN RIVER VALLEY PROJECT AREAS

10. Adequate steps for soil conservation in the catchment areas of rivers are as essential for the proper development of water resources as the construction of dams and reservoirs. If such steps are not taken and erosion goes on unchecked, the high silt loads resulting from erosion will reduce the life of dams and reservoirs, impair efficiency and increase the cost of operation. A programme of soil conservation should, therefore, be taken up in the catchment area of every river valley project. Surveys of erosion and land use should be undertaken and critical areas should be demarcated and steps taken to preserve forests and other vegetation by regulating grazing and the felling of trees. The cultivators in sub-catchment areas should be urged to form associations in order to formulate programmes for soil conservation. When these are approved, they should be implemented with technical and financial assistance from the Government.

11. Since many of the rivers flow through two or more States, the success of the programmes will depend upon the co-operative effort of the States concerned, and there must be an equitable sharing of the cost. It will be one of the functions of the Central Organisation, which it is proposed to set up, to secure agreement among the States concerned to a co-ordinated programme.

#### THE PROBLEM OF THE RAJASTHAN DESERT

12. Desert and semi-desert conditions prevail over a large area in Rajasthan and the adjoining parts of the Punjab, Pepsu, U.P., Saurashtra and Kutch. The Draft Outline Report of the Planning Commission referred to the reported advance of the desert, and recently an *ad hoc* committee was appointed to go into this problem. The committee made various recommendations, including the creation of a five-mile wide vegetation belt along the western border of Rajasthan. As a first step, a Desert Research Station is being set up at Jodhpur at which research on soils, land use and

silviculture will be conducted. A pilot scheme for the creation of vegetation belts will also be undertaken. Since a number of States are effected by the advance of the desert, a programme of action should be finally worked out by the States concerned and representatives of the Central Organisation, indicating the measures to be taken in each State.

#### ORGANISATION

13. For carrying out the programmes outlined above and generally for the formulation and implementation of suitable policies in the fields of land utilisation and soil conservation, the constitution of (a) a Central Land Utilisation and Soil Conservation Organisation at the Centre, and (b) a Land Utilisation and Soil Conservation Board in every State is recommended.

## CHAPTER XXIII

### FISHERIES

Fisheries contribute about Rs. 10 crore annually to the national income of India and fish, being rich in proteins, vitamins and mineral salts, is a valuable food. It already forms an important item in the dietary over considerable areas in the country.

#### PRODUCTION TRENDS

2. The Plan provides Rs. 8 lakh for improving the existing statistics of production which are most inadequate. Such figures as are available show that the present supply of fish is about one million tons, of which 70 per cent is sea and estuarine fish and 30 per cent fresh water fish. The quantity of fish available thus works out at 3·4 lb. per capita per annum. The requirements of a balanced diet are 3 oz. per day per adult, i.e., 51 lb. per capita per annum, of fish and/or meat. Since the amount of available meat is still less, this indicates a large gap between the quantity available and the requirements of a balanced diet.

#### INLAND FISHERIES

3. In order to develop inland fisheries, culturable waters should be rapidly surveyed and classified into those that can be utilised for fish culture without heavy expense, and derelict waters requiring large capital outlay for improvement. Simultaneously the resources of fish seed should be investigated with a view to large-scale stocking operations. For the States deficient in fish seed, supplies should come from surplus areas where large-scale collection and distribution of fish seed would have to be organised. Large wastages occur during the transport of fingerlings and fry, but the work done at the Central Inland Fisheries Research Station at Barrackpore and the sub-station at Cuttack shows that the mortality can be greatly reduced. This work should be intensified. High priority should also be given to research on the artificial spawning of carp in enclosed waters. This is the species of fish most commonly reared in India, but as it does not spawn in enclosed waters, re-stocking operations have to be carried on year after year. Research should also be vigorously conducted for evolving cheap mechanical devices or chemical weedicides for the destruction of water hyacinth which, in many places, is seriously affecting the productivity of inland fisheries.

4. The existence of private rights in the village tanks has often retarded the development of inland fisheries. These have largely disappeared with the abolition of zamindari; the fishing rights now vest in the State Governments and the systematic development of the fisheries is the responsibility of the State. Since the inland fisheries are dispersed all over the countryside, their development will require

an extension organisation on a large scale. It is suggested that fishery extension work should generally form part of the normal duties of the agricultural extension organisation and that pisciculture should be taught in agricultural schools and colleges.

5. The long coastline of India has numerous estuaries, salt-water lakes and backwaters rich in fish. The salt-water area is about 1.9 million acres including the Chilka lake which covers 256,000 acres and yields 3,000 tons of fish annually. The bulk of the area vests in State Governments and is very largely undeveloped. In Travancore-Cochin, a small area has been reclaimed and converted into productive fisheries. Similar undertakings should be organised in other States, and the areas should be settled in suitable blocks with fishermen's co-operatives.

#### MARINE FISHERIES

6. For the development of marine fisheries, the mechanisation of country craft is essential. The number of these boats working at present is estimated at 70,000. They do not operate beyond a few miles from the shore and spend much time in going to and coming from the fishing grounds. The result is low production. If the country boats are mechanised, fishermen will be able to reach areas outside their normal range of operations and also to fish for longer hours. The Plan envisages the mechanisation of 140 boats, 100 in Bombay, 20 in Saurashtra and another 20 on the west coast of Madras. Provision has also been made for the introduction of fourteen 30-35 feet mechanised boats of the multi-purpose type.

7. On the west coast of India there are good prospects of introducing mother-ship operations provided that fast tugs with proper refrigeration facilities are obtained. The Plan provides for two such vessels to be located off the coasts of Saurashtra and Cochin. It also provides for two "purse seiners" for experimental purposes, one to operate around Karwar for catching mackerel and the other at Cochin for sardines. These will help to develop off-shore fishing. There are also possibilities of commercial trawling. Provision has, therefore, been made for one trawler for commercial operations in the Arabian Sea and three small trawlers for the West Bengal Government for bull trawling.

#### PERSONNEL AND TRAINING

8. The commercial success of trawling, however, depends largely on the efficiency of the personnel employed. A batch of eight trainees is therefore being trained in modern fishing methods. A Japanese company, which since 1951 has undertaken commercial trawling along the west coast, will also train a number of Indian crews. In addition the services of experts, such as fishery engineers, naval architects, harbour specialists and fishing technicians for manning fishing vessels, are being obtained through FAO or under the Point-4

Programme, while Rs. 5 lakh have been ear-marked for training fishermen in handling mechanised boats.

#### GROUND ORGANISATION

9. The ground organisation, which consists of landing and servicing facilities, refrigeration plants, quick transport arrangements and efficient marketing, plays an integral part in commercial fishing operations. The Plan, therefore, provides for nine ice factories and cold storage plants to be installed at Madras and Bombay, and in West Bengal, Orissa and Saurashtra. Similarly, nine insulated road vans are to be made available at important assembling centres.

The clearance of the silted-up approaches of small fishing harbours, particularly along the west coast, is urgently necessary so as to improve landing facilities. The Plan makes provision for a dredger for this purpose.

#### SUPPLIES

10. The fishery trade is beset with middlemen through whom the fishermen have to obtain everything required for their trade e.g., boats, hooks, yarn, sail cloth, and who take away much of their earnings. Fishermen's co-operative societies should, therefore, be formed to enable them to obtain their supplies of essential requisites and become less dependent on middlemen. About Rs. 60 lakh have been provided in the Plan for facilitating the distribution of supplies and subsidising costly items of equipment.

#### MARKETING

11. Most fresh water fish is sold and consumed as fresh fish. On the other hand, only 20 per cent of the catch of sea fish is marketed as fresh fish ; the remaining 80 per cent is sold either as sun-dried fish or as salted fish or converted into fish meal and manure. Increased marketing of sea fish as fresh fish is desirable not only to meet the large demand for fresh fish, but also in the interest of small fishermen who will get a better return from their catch. This, however, raises the problems of the supply of ice, cold storage and quick transport facilities. Many fishing centres have little or no communications with the hinterland, and the development of communications is a long-term process.

12. For many years to come, until communications are improved and quick transport becomes available, the bulk of the catch has to be preserved by sun-drying or salt-curing. The quality of preserved fish can, however, be considerably improved by greater use of Government curing yards and by research for determining the correct proportion of salt for the preservation of different varieties of fish, and the best curing seasons and types of cure. The Government yards at one time became popular because salt for curing was supplied free of excise duty ; but owing to the abolition of this duty,

people are reverting to private yards. This tendency can be checked by subsidising the supply of salt which is already being done at the curing yards in Madras, Travancore-Cochin and Saurashtra.

13. Large-scale fishing operations may create occasional conditions of glut when large catches are landed, and consequently wide fluctuations in prices from which the small fishermen would be the main sufferers. It is, therefore, suggested that the supplies at Bombay, Cochin and Calcutta should be sold through co-operative societies organised by the State Governments. Meanwhile, fish marketing boards consisting of representatives of fishermen, the trade, the consumers and the State Government may be established at these centres to regulate marketing.

#### THE FISHERIES PLAN

14. A sum of Rs. 580 lakh has been provided in the Plan for the development programme. The various measures proposed are calculated to increase the supply of fish from one million tons to 1·5 million tons during the five year period. This falls considerably short of the requirements of six million tons estimated by the Nutrition Advisory Committee on the basis of 1·3 oz. per day per adult for 70 per cent of the country's population. This indicates the gap that will still remain to be overcome.



## CHAPTER XXIV

### VILLAGE INDUSTRIES

The growth of large-scale industries has increasingly reduced the demand for many rural products with the result that several classes of village artisans are now only partially employed in their traditional occupations and tend to join the ranks of agricultural workers. Meanwhile, economic progress outside the rural sector is not rapid enough to arrest the increasing pressure of population on the land. The development of village industries must, therefore, hold a central place in any programme of rural development.

#### ORGANISATION

2. In the past, villages were largely self-sufficient units ; goods and services were mutually exchanged within a small group whose members were to a great extent interdependent. Today also the revival of village industries will necessarily depend primarily on local demand and the development of mutual exchange within a small circle. But the village organisation has to be remodelled to suit changed conditions. It can hardly function now as a loose structure in which individuals work in isolation ; instead it has to function as a compact unit and, with assistance from the Government, it must be capable of providing employment to all rural workers, whether farmers, landless labourers or artisans. Village industries have, therefore, to become the concern of the village community functioning as an organised group. This at any rate, is the ultimate goal ; but meanwhile the formation of artisans' co-operatives will afford some measure of useful organisation.

3. While the organisation in the village will thus provide the base, an organisation should also be set up at the Centre to study the problems of village industries and create favourable conditions for the State Governments, constructive organisations and co-operative societies to develop cottage industries. It is proposed, therefore, that a Khadi and Village Industries Board should be set up. This Board will be outside the departmental machinery of Government and will be composed of experienced workers in the field of khadi and village industries and a few representatives of the Central Government. Besides drawing up programmes for the development of khadi and village industries, the Board would undertake the training of personnel, the manufacture and supply of equipment, the supply of raw materials, marketing, research, etc. The Board would also act as a clearing house of information and experience relating to the progress of cottage industries. There is need for similar organisations in the States also working in close collaboration with the central organisation.

#### STATE POLICY

4. One principal objective of policy is to provide for each cottage industry a field within which it may operate in an organised

manner. Wherever a large-scale industry competes with a cottage industry, a common production programme should be formulated so that gradually the two become closely integrated. Apart from determining the conditions of supply and demand, such programmes may include items, such as the reservation of spheres of production, limitation of expansion by a large-scale industry, imposition of a cess on the large-scale industry, arrangements for the supply of raw materials, and co-ordination of research and training.

5. The reservation of spheres has already been attempted on a small-scale between the organised textile industry and the handloom weavers. The principle can be extended to a number of other industries. For instance, in the case of the oil industry, edible oils could be produced through the cottage industry and non-edible oils through the oil mills. In regard to processing industries, further expansion of large-scale industry might be disallowed except when the Government or a co-operative organisation propose to establish a unit.

6. The object of levying a cess on a large-scale industry is to benefit a corresponding cottage industry. In a common production programme, if the improvement in a cottage industry is in the interest of an industry as a whole, the organised sectors of the industry should promote, through a cess, technical improvement and organisation in the weaker and unorganised sectors. The object of imposing a cess on mill-made cloth is thus to raise a fund for developing khadi and the handloom industry. On similar grounds, a small cess could be imposed on mill oil for benefiting the village oil industry.

#### RESEARCH AND TRAINING

7. While it is essential that rural industries should receive support and assistance from the State Government, this will have only a short-term value, unless, in the meantime, there is a rapid improvement in the technique of production. The utmost importance must, therefore, be attached to research and training in village industries. A scheme for a central institute for research should be worked out by the proposed Khadi and Village Industries Board. While maintaining contact with other organisations in the country, such an institute would place their problems before the National Laboratories and communicate results to smaller research centres and artisans. In the Central Government's plan, Rs. 15 crore have been set aside for cottage and small-scale industries part of which should be used for this purpose.

8. Furthermore, systematic training should be imparted on a large scale to village artisans, since demonstration and peripatetic parties are not in a position to provide continuous guidance or to maintain a system of follow-up after the training has been given. A system of training-cum-production centres and pilot workshops such as have been tried in Uttar Pradesh are likely to yield useful results. The artisans trained at such centres will enter the field with greater ability to hold their own and to develop their crafts than the ordinary village artisans.

## FINANCE

9. Village artisans produce mainly for local consumption and if they manufacture for a market outside the village, they usually go to a middleman for capital. Finance for village industries has to be regarded as inseparable from the problem of finance for agriculture. But the formation of industrial co-operatives is an essential first step before the Government can begin to render any substantial help to the village artisans. Given the necessary organisation, it should not only be possible to extend financial assistance but also to initiate development programmes.

## INDUSTRIAL PROGRAMMES

10. Four year programmes have been drawn up by the Planning Commission for a number of village industries and it is proposed that the new Khadi and Village Industries Board should complement these in consultation with State Governments. These programmes are summarised below.

(1) OIL INDUSTRY: A common production programme is to be drawn up for village oil presses and for oil mills. The production of *ghanis* will be raised from 10 to 13·8 lakh tons of seed pressing which will involve some diversion of seeds now pressed by mills and substitution of them by cotton seeds. Better types of village oil presses will be introduced to replace inefficient ones. A research and training institute and five regional training centres are proposed for training artisans in the manufacture and repair of improved oil presses.

(2) SOAP-MAKING WITH NEEM OIL: The scheme aims at establishing production-cum-demonstration centres in several States where neem oil will be utilised for soap manufacture. It provides for eleven neem units, each producing 1,260 md. of neem oil and utilising it for the production of 78 tons of soap annually.

(3) PADDY HUSKING: Hand-pounding of rice is an important village industry and even today it processes about 65 per cent of the paddy. The programme aims at improving manual husking, so as to obtain more rice and bran of pure quality by replacing the pounding method by stone *chakkis*. The distribution of about 50,000 *chakkis* is to be subsidised in the rice-pounding areas over a period of four years. Rice mills of the huller type are to be gradually eliminated.

(4) PALM GUR: An increase of 80,000 tons in the production of palm gur is contemplated which will give additional employment to about 60,000 rural workers as tappers and helpers. The scheme provides for training and research.

(5) GUR AND KHANDSARI: About 100,000 cane crushers of improved types are to be introduced in order to obtain a higher percentage of extraction.

(6) **LEATHER**: The programme provides for the organisation of co-operatives of village leather workers and for improvement of recovery work, training and leather-craft in municipal and adjoining rural areas.

(7) **WOOLLEN BLANKETS**: It is proposed that four wool spinning and weaving centres should be set up for the production of woollen blankets required for the defence services. The carding and finishing is proposed to be done by power-operated machinery, but the spinning and weaving by hand.

(8) **HAND-MADE PAPER**: Eleven existing centres will be assisted in respect of equipment, training and research to enable them to produce superior varieties of hand-made paper which are at present imported.

(9) **BEE-KEEPING**: It is proposed to develop bee-keeping in selected areas in a number of States. Each area will have a sub-station serving 20 to 30 villages. Beehives and other equipment will be supplied at subsidised rates, and co-operatives of bee-keepers will be formed for the collection and marketing of honey.

(10) **MATCH INDUSTRY**: The scheme aims at increasing the production of the cottage match industry from 0·6 million gross to about 1·8 million gross at the end of the four years by the provision of training and the grant of certain concessions.

(11) **KHADI**: Certain tentative proposals have been prepared but they will have to be considered by the proposed Khadi and Village Industries Board.

(12) **COIR INDUSTRY**: The industry is in a depressed state and requires to be reorganised on a co-operative basis. A programme has been drawn up by the Travancore-Cochin Government for this purpose.

It is proposed that the finance for the village oil industry and soap-making from neem oil should be found by imposing a cess and that for the rest the assistance should come from the allotment of Rs. 15 crore made in the Plan.

## CHAPTER XXV

### SMALL INDUSTRIES AND HANDICRAFTS

In the previous chapter the problems of those small industries which are, in the main, an integral part of the village economy were considered. This chapter is concerned with the remaining small industries which can be divided into two groups, those which represent traditional skills and crafts and those of more recent growth which have an intimate connection with corresponding large-scale industries.

2. The field of employment both in public service and in large-scale industry being limited, small industries offer the most promising opportunity for the employment of persons with some training and education. Furthermore, small industries and handicrafts have great importance as a means of providing employment for women in their homes. During the war, new small industries sprang up all over the country for the purpose of meeting defence requirements. Though many of them have since disappeared, the experience of these war-time industries, manufacturing articles which are now once again being imported from abroad, clearly indicates that there is room for expansion in this field. Hitherto there have been hardly any considered programmes of development and improvement and the growth of small industry over the past two decades has been an unplanned process, lacking some of the elements that make for efficiency and stability. The planned development of small industry is a task of immense magnitude and importance, but the Central Government have now taken it in hand and, as a first step, programmes for a few selected industries, such as the manufacture of woollen goods, sports goods, agricultural implements, brass-ware and bell metal and cycle parts, are being prepared in consultation with the States concerned. The Central Government's plan contains a provision of Rs. 15 crore with which it should be possible to finance approved programmes and afford a fair measure of assistance to the States.

3. Small industries may be divided into three types: (1) those in which production on a small scale has certain advantages and is not affected by large-scale production to any great extent, (2) those in which small-scale production is concerned with making certain parts or with certain stages of production in a manufacturing process in which the predominant role is played by a large-scale industry, and (3) those in which a small-scale industry has to compete with a corresponding large-scale industry.

4. Among the industries of the first type, mention may be made of the manufacture of locks and padlocks, wax candles, buttons, *chappals* and badges. While these industries may be run on an individual basis, they should be organised through groups, primarily

with a view to facilitating sale and marketing and the financing of production:

5. Among the small industries of the second group, the manufacture of cycle parts, electrical goods, cutlery, pottery and agricultural implements are important examples. During the war, the smaller engineering units made great progress; subsequently, however, many of them were hard hit by the shortage of iron and steel. With the increased supply of pig iron and iron and steel, for which the Five Year Plan provides, these industries will undoubtedly revive and expand. Nevertheless this development will be possible only by the reservation of spheres of activity for a particular industry as a whole, supported by considerable assistance in finance, organisation, and training on the part of the Central and State Governments.

6. Of the third type, namely, industries open to serious competition from corresponding large-scale industries, the best example is furnished by the handloom industry. The entire subject of "protection" for this industry is being reviewed by a Committee appointed by the Central Government, and as an interim measure of relief certain lines of production have been reserved for the handloom weaver. It is, however, very necessary that in respect of industries of the second and third types the Central Government should arrange for early consideration of how the principle of common production programmes should be applied in detail to different industries. The nature of the programme will, of course, vary with each industry. In some cases the essential points will be that the supply of raw materials should be assured, a sphere of production ear-marked and perhaps a small cess levied on the large-scale industry. In other cases, it will be an integrated programme in which large and small units are essentially complementary.

7. The demand for the products of small-scale industries can be deliberately developed by (i) stores purchase and (ii) replacement of imports. As regards (i) it has already been decided that where basic considerations like quality, delivery date, etc., are comparable, the products of cottage and small-scale industries should receive preference, and furthermore that preference should be given to products of cottage and small-scale industries when they are offered for sale through a co-operative society or an agency approved by the Central Government. This will encourage the growth of co-operative organisations. The products of the cottage industry should not, however, be deprived of preferential treatment, even if they are offered for sale by a middleman, provided he is the traditional employer of a 'master weaver' or a 'master cobbler'. This policy should be followed uniformly by all States.

8. A preliminary study of the possibilities of replacing imported articles by the products of cottage and small-scale industries has been made but the subject requires further detailed examination by panels of technicians and businessmen in different trades. Such examination should be taken in hand at once. Steps should also be taken to

organise new centres of small-scale production in new townships or in extensions of existing towns. Such measures do in fact form part of the programme of some of the community projects.

#### TRAINING AND RESEARCH

9. The question of training has been given considerable importance in the Five Year Plan. The Directorate General of Resettlement and Employment have trained 144,000 persons and the Ministry of Rehabilitation 52,000 persons from West Pakistan and 8,000 from East Pakistan, while 12,000 persons are undergoing training at present. The Central Ministry of Education have also assisted technical institutions for advanced training. The plans of the State Governments include the following training programmes:

	1950-51	1955-56
Number of industrial schools ..	365	456
Number of pupils trained ..	14,750	21,797
Number of technical and vocational institutions ..	260	407
Number of persons trained ..	26,702	42,997

Training should be directed towards those trades in which the prospects of stable employment are reasonably assured.

10. For improving the technique of small industries of the modern type it is suggested that the Central Government in consultation with the State Governments should arrange for the opening of special research sections for small industries in research institutes associated with large-scale industries.

#### FINANCE

11. To finance these developments, it will be necessary to set up industrial finance corporations. Some States may not find it easy to fulfil this requirement for want of resources on account of the undeveloped state of their industry. The possibility of forming regional finance corporations for such States should be considered.

#### HANDICRAFTS

12. Skilled craftsmanship is one of the principal features of handicrafts. The craftsmen are largely in the hands of the middlemen who operate on a small scale and work to orders. They find their own finance and constitute a link between the artisans, exporters and foreign buyers. There are a few instances of improvement having been effected in the initiative of middlemen, but, by and large, the present organisation of handicrafts does not make for efficiency, improvement in quality or increase in production. Nor are the middlemen in a position to ascertain sufficiently the requirements of

the foreign markets. The result is that, with a few exceptions, the handicrafts have remained static in their methods and outlook.

13. The bulk of the demand for handicrafts comes from foreign countries, the domestic demand being limited by the low purchasing power of the people. There is an intimate connection between the measures needed to improve production and those required for stimulating demand. Thus the demand for the brassware products of Banaras, Moradabad, Jaipur and Tanjore, for example, could be increased, if better and more useful articles were manufactured according to the customers' requirements. Similarly, the uses of and demand for brocades, gold thread *saris* and other articles manufactured in Banaras could be considerably increased, if the tastes and needs of the foreign buyers were studied more carefully. The recent slump in the coir industry is no doubt due partly to exchange restrictions, but it can also be attributed to the decline in quality, lack of adequate organisation and failure to adapt production to market conditions. In general there is a need to increase the manufacture of utility handicrafts in addition to meeting luxury demands for artistic wares. In countries like the U.S.A. the demand for Indian handicrafts could be stimulated a good deal, if the suppliers maintain the quality of the samples when supplying the goods and if, in certain cases, they are supplied in bulk. At present the middlemen are not in a position to finance more than a limited quantity of goods.

14. Emporia can play an important part in improving the quality of handicraft products, particularly if they not merely concern themselves with sales, but also guide artisans and keep them informed of new demands and new designs. It would help to build up a stable internal demand if consumers' co-operatives could be linked increasingly with producers' co-operatives, and similarly, if the Central and State Governments could promote links between producers in India and large buyers abroad.

15. If the artisan is to become less dependent on middlemen and technical knowledge and guidance are to be carried to him, co-operatives will have to be organised and associations formed in handicraft centres with co-operatives as well as individual workers as members. Standards of quality should be laid down and enforced in all the important lines of production; the study of designs and materials should be organised, and arrangements made for ascertaining the technical problems which hamper the work of the craftsman and for solving them where they are known. The Central Government should also consider the establishment of a separate institute for research in handicrafts and the study and preparation of designs. Such an institute could work in co-operation with arts and crafts schools, institutions like Santiniketan and the departments of industries in the States.



## CHAPTER XXVI

### IRRIGATION AND POWER

#### ASSESSMENT OF WATER RESOURCES

In India rivers have exercised a powerful influence on national life. The earliest civilisations developed along the banks of the Indus and the Ganges and their tributaries. In the Deccan, too, large masses of people have depended for their existence on the rivers. In most parts of the country successful agriculture is not possible without the use of river waters. An integrated development of land and water resources is thus of fundamental importance to the country's economy.

2. Irrigation, or the artificial application of water to crops, is an old art in India ; in many parts it began with agriculture itself. Large numbers of the tanks found in the Deccan have been in existence for ages. The Cauveri delta canals date back to the second century and the Yamuna canals were constructed originally about the fourteenth century. Under certain favourable conditions river waters also provide a cheap source of power either directly or through the generation of hydro-electric power. In India, where there is very little oil and the coal deposits are confined to certain parts of the country, hydro-electric power has to play a big part in development. Apart from the rivers, underground waters, too, constitute a valuable source of water supply for domestic and agricultural purposes. The exploitation of sub-soil water resources must be integrated with the use of river waters.

#### AVAILABLE WATER RESOURCES

3. The rivers of India may be broadly divided into two groups: (1) the snow-fed rivers of northern India and (2) the rivers of central and southern India. The Himalayas give rise to the Indus, the Ganges and the Brahmaputra in the north. The chief rivers of central and southern India are the Mahanadi, the Godavari, the Krishna and the Cauveri flowing eastward into the Bay of Bengal and the Nerbada and the Tapti flowing westward into the Arabian Sea. The Chambal, the Betwa and the Sone drain the northern edge of the Peninsula and flow into the Ganges system.

4. The rivers of northern India are snow-fed and flow all the year round, though the supplies are low in winter. The rivers of central and southern India depend entirely on rainfall with the result that in dry weather they sometimes dwindle to a mere trickle. The total annual flow of water in the rivers is estimated at 1·356 million acre-feet, of which only 76 million acre-feet or 5·6 per cent are at present used for irrigation. The position in regard to the utilisation of water resources in the important river basins is set out below :

River system	Estimated average annual flow	Existing utilisation	Proposed projects	Proposed utilisation
1. Indus	170 million acre-feet for the entire river system lying both in India and Pakistan	About 8 million acre-feet	The Bhakra-Nangal project	8 million acre-feet
2. Ganges	400 million acre-feet	Only a small part is being utilised, chiefly by canals on the Ganges, Yamuna and Sarda rivers	The Damodar Valley project	2.7 million acre-feet
3. Brahmaputra	300 million acre-feet	Negligible ; in general, irrigation unnecessary because of heavy rainfall in Assam		
4. Godavari	84 million acre-feet	About 14 per cent		
5. Mahanadi	74 million acre-feet	Small quantities for irrigation in the delta areas	Hirakud project	About 11 million acre-feet
6. Krishna	50 million acre-feet	Approximately 18 per cent	The Tungabhadra project	6 million acre-feet
7. Cauvery	12 million acre-feet	Over 60 per cent		
8. Narmada	32 million acre-feet			
9. Tapi	17 million acre-feet		The Kakra-para project	

5. There are numerous other rivers and rivulets in which waters are available intermittently during the rainy season. Small irrigation reservoirs have already been built on many of them, but there are many more which could be constructed. Substantial water supplies for irrigation and for industrial and domestic purposes are also available from underground sources. Wells have been constructed in all parts of the country for domestic water supply and for the irrigation of land and have been in use from time immemorial; but large-scale irrigation from this source is possible only with the help of tube-wells operated by power pumps. The information at present available suggests that such large-scale irrigation would only be economic in parts of Uttar Pradesh, Bihar, Punjab, Rajasthan and Gujerat.

#### WATER RESOURCES FOR IRRIGATION

6. Water for irrigation can be obtained (1) directly by diverting water from the rivers into canals, (2) from storage of flood waters flowing into rivers or of rain water from small catchments, and (3) by digging wells or tube-wells. The total quantity of water flowing in the rivers is not wholly available or, indeed, needed for irrigation. In areas of high rainfall, like the west coast and north-eastern India, irrigation is not required at all or only to a very limited extent. Elsewhere the large volumes of water carried by the rivers during the monsoon have to remain to a great extent unutilised, since it is neither physically possible to divert, nor economic to store, all but a small portion of the flow. It is difficult, therefore, to state with any precision what percentage of the total river-flow can be utilised for irrigation. Possibly out of the total of 1356 million acre-feet about one third or 450 million acre-feet could be put to beneficial use as compared with the existing utilisation of 76 million acre-feet.

#### EXISTING DEVELOPMENT

7. A hundred years ago, two or three million acres of land were irrigated by indigenous irrigation works, such as small tanks and inundation canals, and about five million acres, mostly in western India, were under well irrigation. The first major irrigation work constructed in India was the Ganga canal in Uttar Pradesh opened in 1854. This was followed by the Upper Bari Doab canal in the Punjab and the Godavari and Krishna delta systems in Madras. A number of other large irrigation works were undertaken round about the turn of the century and again after the first world war.

8. In recent years, electrically driven tube-wells have opened up a new method of utilising sub-soil waters on an extensive scale and in Uttar Pradesh there are 2000 State-owned tube-wells. Bihar and the Punjab and some other States have also recently taken to the exploitation of the sub-soil waters in this manner. Tube-well irrigation is, however, generally more costly than ordinary canal irrigation.

9. The area actually under cultivation in India in a year is about 277 million acres. The total area irrigated from all sources is a little less than 50 million acres or 18 per cent of the total area sown in a year. There are thus very large areas which still await irrigation. With increased facilities for irrigation large areas of land, now lying barren and waste, can be cultivated and put to productive use. In other areas the yield per acre can be greatly increased if there is an assured supply of water, or two crops can be grown in a year instead of one. Moreover, where there is irrigation, the cultivator has more incentive to improve his methods of cultivation—using improved seed and manure and following proper crop rotations—as he is assured of better results. By increasing production from the land and furnishing fresh employment for the cultivators, irrigation can change the entire agricultural pattern in large parts of the country. Indeed, if the water resources of the country are utilised to the fullest extent practicable, India can produce all that is needed to ensure progressively improving standards of nutrition for its increasing population. To solve the food problem, however, it will be necessary to double the area under irrigation within the next 15-20 years.

10. Another important use of the rivers is navigation. At one time, the rivers of northern India were the main arteries of communication. With the construction of the railways, river traffic gradually declined in importance and today inland water transport is restricted to certain parts of Assam, West Bengal and Bihar. The water-ways have also gradually gone out of use because the bulk of the dry weather flow is now drawn off for irrigation. In central and southern India, inland transport has never been very extensive, as the water in the rivers is inadequate for navigation except by small country boats.

Every year considerable damage is caused in different parts of the country by floods. Extensive embankments have been constructed in parts of Assam, Bihar, West Bengal and Orissa. The construction of large dams to store flood waters is the most effective way of preventing damage by floods.

The transport of goods by water is generally cheaper than transport by rail. Also, in times of emergency, alternative means of transport are indispensable for the defence and security of the country. The storage of flood waters by dams and their gradual release for hydro-electric generation have opened up new possibilities for inland transport. In every river valley project the scope of inland soil navigation must be explored. At the same time, flood control and conservation measures should be undertaken.

#### ASSESSMENT OF POWER RESOURCES

11. Power can be derived from (1) exhaustible sources, such as coal, mineral oil, peat, natural gases, etc., and (2) inexhaustible sources, such as waterfalls, winds and tides. The production of power from sources like tides and winds is limited. Among the fuels,

alcohol, which can be manufactured from molasses, etc., alone offers scope for such exploitation in this country. Until atomic power and solar energy come into the field, the development of power resources in India can only be from coal, oil and water.

India's resources of petroleum, so far as they are known, are small; but reserves of coal are estimated at 20,000 million tons, of which 5,000 million tons are of good quality. The latter have to be conserved for important metallurgical and other operations; but there are large available reserves of low grade coal which can be utilised for the generation of steam in suitably designed furnaces. This opens up a use for lignites (available in large quantities in south Arcot and in Cutch) and coals of high ash content which were hitherto considered unusable but can be a new source of supply of electric power in areas near to where the deposits occur.

The distribution of coal is, however, uneven and the distances from the coal-fields to industrial centres are in some instances so great that the thermal generation of power is hardly economic.

India's resources of hydro-electric power are potentially large and are estimated at 40 million kw.

#### EXISTING POWER DEVELOPMENT

12. In the past, most of the electrical installations were established primarily for meeting the domestic and industrial needs of the urban areas. The first large station for the supply of electric power was erected in Calcutta about the end of the last century and in the next twenty years similar power supply stations were established in other towns. They were mostly all thermal stations. Up to 1920 the progress of public electricity installations was rather slow, but since then there has been continuous and rapid expansion. During the twelve years, since 1939, the total capacity for generating electricity has nearly doubled, rising from about one million kw. in 1939 to 1.71 million kw. in 1950. The total amount of electricity generated also increased from about 2,500 million kw. to 5,100 million kw. during the same period. In addition to the public utility power stations, there are a number of industrial and railway installations with their own power plants. The total generating capacity of these plants was approximately 588,000 kw. in 1950. Including these stations, the total generating capacity in the country in 1950 was approximately 2.3 million kw., of which 1.7 million kw. came from thermal stations and about 560,000 kw. from hydro-electric plants. All towns with a population of 50,000 and over and most of those with a population above 20,000 are now supplied with electricity. But rural electrification has made little progress. Out of approximately 560,000 villages in the country, only about 3,000 are provided with electricity. This development is confined mainly to Mysore, Madras and Uttar Pradesh and is associated with the development of hydro-electric power:

13. Cheap electricity is essential for the development of a country and the extent of its use has become in modern times an

index of the national development and standard of living of a country. It can provide power inexpensively for the pumping of water for irrigation and for numerous other operations in agriculture and in the home. Extensive use of electricity can also bring about a much needed change in India's rural life. It can not only improve methods of production in agriculture and encourage cottage and small-scale industries, but also make life in rural areas more attractive, thus helping to arrest the influx of the rural population into the cities. But in spite of the progress made in the last ten or twenty years the use of electricity in India is still very limited, the average per capita consumption being only 14 kw. per year. The demand for electricity is almost everywhere on the increase and there are many areas in the country where the need for more electricity is immediate and where the growth of plant capacity has not been able to keep pace with the growth of load. Thus there is acute shortage of power in Bombay, Delhi, parts of Uttar Pradesh, Madras and West Bengal. The economic development of these areas has thus been slowed down. Moreover, many of the generating units have outgrown their useful life and need replacement.

#### DEVELOPMENT UNDER THE PLAN

14. Although irrigation and power development are the responsibility of the State Governments, a national policy is needed for several reasons. First, it is not in all parts of India that facilities for irrigation exist. Where they do, they must be fully developed in the interests of the food requirements of the nation as a whole. Secondly, the works that are now in progress and those that remain to be taken up present more difficult engineering and other problems than those already completed, and call for the pooling of the best knowledge and resources available in the country as well as for the training of technical staff on a large scale. Thirdly, since the river valleys are not confined to State boundaries, the development schemes of different States have to be co-ordinated to achieve maximum results. Water stored in a reservoir in one State may have to irrigate areas in others and power generated in one State is consumed in others. Finally, large projects require financial outlays beyond the resources of the States and cannot be undertaken without assistance from the Centre.

15. An examination of the new irrigation and power projects in the country, that are either under construction or under investigation or only under consideration, shows that to construct all of them will cost about Rs. 2,000 crore and that they will add 40 to 45 million acres to the area now under irrigation and create an additional power generating capacity of about 7 million kw. We are convinced that it is only by the implementation of a programme of this magnitude and by intensive measures for improving the standard of agricultural practice and by the promotion of cottage and small-scale industries in addition to large-scale industries that an appreciable rise in the standard of living in the country can be achieved.

16. A large multi-purpose river valley project takes from two to five years for detailed investigation and preparation of plans, etc.,

and five to ten years for construction. The organisation of the technical and other personnel and the mechanical equipment needed for them must, therefore, be carefully devised. The most economical phasing of large projects will be possible only if there is a long-term plan carefully framed with accurate financial estimates and with due regard for the technical resources and equipment available.

#### PLAN FOR IRRIGATION AND POWER

17. During the past few years, there has been considerable activity all over the country in connection with new irrigation and power projects. Many new projects, large and small, have been taken up for construction—some purely for irrigation and others multi-purpose in character. On some of these work was started before the completion of detailed investigations and of the economic studies of their technical and financial aspects. Whatever views may be held about the relative merits of these projects already under construction and others not yet started, there can be no question that they must now be completed as quickly as possible so that the expenditure already incurred may bear fruit and that benefits, particularly by way of additional food, may be secured quickly. This has been an important consideration in the formulation of our proposals. Consequently the Five Year Plan for irrigation and power aims mainly at the completion of these projects, and it has not been possible to include many new ones.

18. The projects already under construction are, on the basis of sanctioned estimates, expected to cost on completion Rs. 765 crore. On these an expenditure of Rs. 153 crore had been incurred up to the end of March, 1951, and during the period covered by the Plan it is proposed to spend on them an additional Rs. 518 crore. They are calculated to irrigate an additional area of 8·5 million acres by the last year of the Plan and to generate 1·08 million kw. of additional power. After the completion and full development of these projects the total addition to the area irrigated will be 16·9 million acres and to power 1·4 million kw. Particulars of these major projects will be found at the end of this chapter. The annual expenditure on them, year by year, during the period of the Plan and the benefits likely to accrue from them will be as follows:—

Year.	Expenditure (Rs. crores)	Additional irrigation (acres)	Additional power (kw.)
1951-52	85	646,000	58,000
1952-53	121	1,890,000	239,000
1953-54	127	3,555,000	724,000
1954-55	107	5,749,000	875,000

1955-56	78	8,533,000	1,082,000
Ultimate		16,942,000	1,465,000
Five years' total	518		

Owing to the urgent need for irrigation, the projects have been so phased that the irrigation works are to be completed as soon as possible, while the development of power will take place gradually according to demand.

19. The expenditure on these projects will fall off in the last two years of the Plan. In view of this and of the need for making a start with other urgent works, especially in backward areas, five new major projects have been selected for inclusion in the Plan and Rs. 40 crore have been provided for making a start on them in the last two years. Their total cost will be well over Rs. 200 crore. The details of these projects are given below:—

Name of Project.	Area served.	Total estimated cost Rs. lakh	Ultimate benefits.	
			Irrigated area in thousand acres.	Power in kw. installed.
Kosi (Stage I)	.. Bihar and Nepal.	66,00	2,620	40 (also flood control)
Koyna (Stage I)	.. Bombay	33,00	—	240
Krishna (scope not yet defined)	.. Madras and Hyderabad	Not available.	Not available.	
Chambal (Stage I)	.. Madhya Bharat and Rajasthan	33,75	1,200	80
Rihand	.. Uttar Pradesh	35,00	—	240

#### ECONOMIC USE OF WATER

20. While efforts are being made to provide new irrigation facilities in all parts of the country, it is necessary to derive the maximum benefit from the existing supplies of water. To achieve this object, it is essential to determine the water requirements of different crops and the right time for irrigation. Secondly, the absorption of water must be reduced by lining the canals and distributaries. Lastly, the wastage of water in the fields must be eliminated. The Commission has accordingly made suggestions to the State Governments in this matter.



## DEVELOPMENT OF POWER

21. The region-wise expansion in power generation and anticipated loads during the period of the Plan are indicated below:—

		Additions anticipated by 1955-56 in thousand kw.		
		Installed capacity	Firm power	Anticipa- ted load.
1.	Multi-purpose projects :			
	(i) Bhakra-Nangal ..	96	72	69
	(ii) Damodar Valley ..	194	144	132
	(iii) Hirakud Dam ..	48*	24	24
2.	Madras, Mysore, Hyderabad and Travancore-Cochin ..	402	511*	639
3.	Bombay area ..	83	358*	417
4.	Bihar, Bengal and Madhya Pradesh ..	88	65	101
5.	Uttar Pradesh ..	109	157*	146
6.	Projects in other areas ..	62	66	66
	Total ..	1082	1397	1594

It will be seen that the increase in generating capacity will be a little over one million kw. in the public sector, of which 338,000 kw. or a third will be contributed by three multi-purpose projects. This last figure represents only the first phase of development. Eventually their capacity for power generation will rise to one million kilowatts. The following table indicates the amount of electricity consumed in 1950 for different purposes and the estimated consumption in 1955.

Consumption of electricity  
in million kw.

	1950	Percentage of total 1950.	1955	Percentage of total 1955.	Percentage increase over 1950
Domestic light and power. ..	525	13	860	13	64
Commercial light and power. ..	309	7	430	7	39
Industrial ..	2604	63	4100	63	58
Irrigation ..	162	4	332	5	105
Other purposes ..	558	13	752	12	35
Total: ..	4158	100	6474	100	56

\*In the case of projects whose power is fed into an existing power system the firm power of the entire power system has been taken with the corresponding anticipated load on the system as a whole.

Industries are the largest users of power, consuming about two-thirds of the total, and domestic and commercial users come next. Irrigation takes at present only about four per cent of the power consumed but this figure is likely to increase two-fold during the period of the Plan, while industry's demand is expected to increase by about 60 per cent.

22. Much stress has been placed on proper planning for the development of load for every large generating unit. For most of the power projects included in the Five Year Plan, detailed or preliminary load surveys have already been carried out and the power to be generated will be utilised largely in meeting the existing power shortage in industrial areas, in replacing old and inefficient plant and for pumping of irrigation supplies from tube-wells and rivers, etc. In the location of new large-scale industries the availability of power from the new power projects is being kept in view. Considerable importance is to be attached to efforts being made to spread the use of electricity in rural areas—for agricultural purposes, lift irrigation, cottage and small-scale industries, etc.

#### POLICY AND ADMINISTRATION

23. The State Governments are primarily responsible for the execution of irrigation and electricity projects, while the Central Water and Power Commission co-ordinates their efforts. Some of the States, however, do not possess the type of organisation needed to plan and execute large projects. The Central Water and Power Commission is being strengthened to enable it to assist such States. Moreover, for the implementation of a plan of the dimension now contemplated, a central organisation is required to help the State Governments in the preparation of detailed designs, in the procuring of equipment, in the recruiting and training of staff and arranging for the transfer of machinery and staff from one project to another.

24. Practically all the major rivers of India flow through more than one State. The policy of the Central Government is that the waters of the rivers should be put to the best possible use irrespective of State boundaries. Accordingly, the Central Government is concerting measures to ensure that every river valley is exploited jointly by the States concerned. The States can also co-operate with advantage in developing power from hydro-electric sources. Good sites for hydro-electric power do not exist in every State. Where they do, they often yield more power than can be used within that State. Co-operation between the States may take the form of a joint enterprise developing a hydro-electric power source, or of one State purchasing power in bulk from another, or of an interchange of power between different power systems in adjoining States. There are examples of such inter-State co-operation. The Muchkund hydro-electric station, for instance, is being developed by Madras jointly with Orissa. The Bombay Government will be taking bulk power from the Jog hydro-electric power station in Mysore, and the power to be developed at Bhakra will be consumed jointly by the Punjab, Pepsu, Rajasthan, Delhi and Uttar Pradesh.

As soon as practicable, a comprehensive long-range plan for inter-connecting the existing and the new hydro-electric and thermal stations should be worked out for the country as a whole or at least for large regions.

#### FINANCING OF IRRIGATION PROJECTS

25. Irrigation works may be productive or unproductive. Those which yield enough revenue to cover the interest on the capital are regarded as productive and are financed from public loans. Others which do not conform to this requirement are classed as unproductive and are financed from general revenues or special grants. The projects now under construction are considerably more costly than those executed in the past and the cost of maintenance and operation will also be higher. It is necessary, therefore, that the State Governments should reexamine in some detail the charges to be recovered from the cultivator for the supply of water.

26. Where the demand varies from year to year and the water available is not fully utilised, the levy of an irrigation cess is justified. Where water-rates were fixed many years ago and there has since been a considerable increase in the value of the crops grown there is a good case for increasing the rates. Agricultural income-tax is another possible source of income. Lands served by major projects show a substantial appreciation in value. Equity requires that the beneficiaries should share this "unearned" increment with the community, the proceeds of which would meet a part of the capital cost of the projects. Betterment fees or a share in the unearned increase in land values have been levied at various times in the past in India. A betterment tax has been in vogue in Mysore from as far back as 1888. The contribution per acre ranges from a third to a half of the difference between the market value of an acre of dry land and an acre of wet land. Under the Irwin Canal System, the land owner pays a contribution of Rs. 150 per acre either by instalments or in a lump sum, a rebate of seven per cent being allowed in the latter case. Thus a betterment levy may be recovered in a lump sum or in yearly instalments in cash or kind. The cultivator should also have the option to give land in lieu of cash.

27. We recommend that all State Governments, that have not already done so, should promote legislation for the levy of a betterment fee on all new irrigation projects, and take power to levy the fee in the form of land from the larger land-holders. This land could be used to resettle people whose holdings are submerged by dams or canals or for allotment to landless labourers and in other ways. Steps must also be taken to prevent speculation in land. One of the ways of doing this is to nationalise the land likely to benefit from a project or to purchase it at the current pre-project rate and then sell it at enhanced prices after the completion of the project.

#### FINANCING OF POWER PROJECTS

28. The total revenue from a power project ought to be sufficient to meet the interest on the outlay, depreciation and running costs

if it is to qualify as a productive public work to be financed from public loans. This has presented no serious difficulty in the past. It is an accepted principle that electricity from State projects should be supplied on a no-profit basis.

29. Though there is considerable scope for the development of power in India, large blocks of power when produced will not be taken up automatically without any effort on the part of the State. The pattern of power consumption must be laid down in advance and the load development planned for every large generating unit. Load planning is closely related to industrial and economic planning for the region covered by the generating station. Steps must also be taken to ensure that villagers are able to utilise electricity to the best advantage. Experience has shown that, given the necessary facilities, the use of electricity for agricultural operations would be popular. Loans should be advanced by the State to enable the farmers to have their premises electrified and to buy electrical appliances. In fact, a scheme similar to the one introduced by the Rural Electric Administration of the U.S.A. will have to be adopted. Under this Plan, long-term loans should be given to village co-operatives for rural electrification and development. The use of power in agriculture has several advantages. For instance, every one kw. of power used by industry requires an initial investment of about Rs. 3,000 as against about Rs. 1,200 in agriculture. Moreover, most of the electrical equipment required by the farmers can be produced in the country and its operation does not require technical skill of a high order.

#### MAJOR AND MINOR IRRIGATION PROJECTS

30. Questions are often raised about (1) the relative importance assigned to major and minor irrigation schemes in the Plan, and (2) the economics of such schemes. There can be no conflict between major and minor schemes. There are parts of the country in which there is scope for large projects and others in which only smaller projects are possible. Each area should be served by the kind of schemes for which it offers facilities. Large and small projects are thus complementary and not competitive. The Five Year Plan includes eight irrigation projects (including multi-purpose projects) costing above Rs. 5 crore each, 16 costing between Rs. 1 crore and Rs. 5 crore; 21 costing between Rs. 1 crore and Rs. 50 lakh; and 27 schemes costing between Rs. 50 lakh and Rs. 10 lakh each. The area which will be irrigated in the five year period by these projects is expected to be about eight million acres, while about 11 million acres are expected to be irrigated by minor irrigation projects and tube-well schemes included in the Plan and costing Rs. 77 crore.

31. The relative advantages and disadvantages of minor and major schemes may be briefly summarised as follows:

Minor schemes are advantageous in that

- (i) the initial outlay on them is small;
- (ii) they can be executed quickly and yield quick results;

- (iii) they generally require no special assistance by way of foreign personnel or equipment ; and
- (iv) local resources can be easily mobilised for their execution.

The disadvantages, on the other hand are :—

- (i) their high cost of maintenance ;
- (ii) their relatively short life ; and
- (iii) the limited ' protection ' they give.

All over the country a fair proportion of such works are now in various stages of disrepair. Experience suggests that minor irrigation works can be maintained only if the beneficiaries undertake the obligation of maintenance. It must, however, be remarked that where there are laws imposing such obligations it has not been found possible to enforce them strictly.

The advantages of major schemes are :—

- (i) they are generally multi-purpose in nature, i.e. apart from irrigation, they confer other benefits such as hydro-electric power and facilities for flood control, navigation, etc.
- (ii) they utilise surplus waters of the river system which are flowing waste at present, and in fact constitute the only way in which such surplus waters can be utilised ;
- (iii) They give better protection in years of scarcity as there are large catchment areas.

The disadvantages are the initial high cost and the time they take for execution. The financial aspects, however, vary from region to region.

#### PUBLIC CO-OPERATION

32. The need for arousing public enthusiasm for and securing the people's co-operation in the execution of irrigation and power projects is obvious. The people must feel that the projects envisaged in the Plan are for their own benefit, and that they have to make sacrifices for their completion. There are different ways of securing public co-operation, and they will vary from region to region. The levy of a betterment contribution is one of them. It is estimated that between one-third and one-fourth of the capital cost of a project can be recouped by betterment levies and as already pointed out, the levy of a betterment contribution in the form of land will be useful in many ways.

33. There is also another way in which the traditional methods of carrying out such projects can be improved. In preparing estimates for works in which unskilled labour is employed—like the canal system in a larger project which absorbs an appreciable portion of the expenditure on the project—the rule should be to adopt a scale of wages on the principle that the work should be

done by the villagers themselves and not entrusted to contractors. In each village or group of villages the villagers should be organised into co-operatives for taking up the work in their own area. By this means, apart from there being a reduction in cost, the villagers benefiting by a project are enabled to contribute towards its completion. This method has been adopted in some projects and it is hoped that it will become the established system in all projects.

#### CONDITIONS FOR THE INCLUSION OF NEW PROJECTS IN FUTURE PLAN

34. When the Five Year Plan has been in operation, say, for two years, the progress made in implementing it will need to be reviewed and a further plan prepared to be implemented from the sixth year onwards. It is necessary that a procedure should be prescribed for determining what projects should be included in this further plan and the order of priority for projects in general. The following broad principles should be observed for including projects in this plan :

- (i) a project for inclusion in the plan should have been investigated in sufficient detail from the technical, economic and financial points of view ;
- (ii) projects which will add to the food production of the country should receive priority over projects relating to other uses of river waters ;
- (iii) projects which are most remunerative—in terms of cost of irrigation per acre or per unit of power generated and those which would yield results within a short time—should be given preference ; and
- (iv) the requirements of areas deficient in food and power should receive due consideration, as also the needs of the backward areas.

A Committee is proposed to be set up to advise on the relative priority of different projects on an all-India basis after an examination of each project, which will consist of :—

- (i) a chairman appointed by the Government of India.
- (ii) Additional Secretary, Ministry of Natural Resources and Scientific Research,
- (iii) a representative of the Ministry of Finance,
- (iv) President, Central Board of Irrigation, and
- (v) one eminent engineer not in the service of any Government in India.

The Chief Engineer of the State concerned should be co-opted as a member when a project prepared by him is examined.

The plan will be prepared in consultation with the Ministries of Finance and of Natural Resources and Scientific Research and the State Governments concerned, after the Committee has examined all the projects that have been investigated and the estimates for which are ready.

## CHAPTER XXVII

### DEVELOPMENT OF MINERAL RESOURCES

The mineral wealth of India, as at present known, includes an adequate range of useful products that are necessary for the industrial development of the country. In respect of coal and iron—the minerals essential for basic industries—the resources are ample ; indeed India's deposits of high-grade iron ore are among the richest in the world. Likewise, there are large reserves of titanium and thorium ores and of mica, bauxite, ilmenite and monazite ; and supplies of refractories, abrasives and limestone are fairly adequate. The country is, however, deficient in copper, tin, lead, zinc, nickel, cobalt and sulphur and above all in petroleum. Furthermore the distribution of mineral deposits is capricious, some parts of the country being poor, others comparatively rich.

2. Until recently, mineral resources and their exploitation received little attention. Except for coal, iron ore and petroleum required for domestic use, the majority of minerals were exported in bulk without dressing, processing and fabrication. Moreover, the exploration of mineral resources has not been thorough or complete and not enough is known about them, especially regarding their quality.

#### MINERAL POLICY

3. Since minerals form the basis of modern industry, it is necessary to have a rational policy for their working and utilisation. The key-note of this policy should be conservation and economic working, and its essentials are as follows :—

- (1) the extent and value of mineral deposits should be fully determined so that production may be organised on an economic basis ;
- (2) the conduct of mining operations should be made more efficient so as to avoid wastage of marginal grades and selective mining of high-grade ores. As far as possible all grades should be worked and, when possible, blended to produce marketable grades ;
- (3) particular attention should be paid to developing resources for strategic minerals, such as sulphur, tungsten, tin, vanadium, etc ;
- (4) statistics should be collected in regard to the mining industry, and about mineral markets at home and abroad and the trends in the international mineral trade ;
- (5) minerals like mica, manganese and chromite, which are worked largely for export, should, as far as possible,

be converted into finished or at least semi-finished products for foreign markets ; and

- (6) the available data about low-grade ores should be assessed commercially and research undertaken on the dressing and processing of minerals.

4. The Plan lays down a programme based on the above principles and arranged in an order of priority. The Government organisations principally concerned in carrying out the programme are the Geological Survey of India, the Indian Bureau of Mines and the National Laboratories like the Fuel Research Institute, the National Metallurgical Laboratory and the Central Glass and Ceramic Research Institute. All these organisations are being strengthened. The Ministry of Natural Resources and Scientific Research have also set up a technical committee for co-ordinating the work of these organisations.

The programmes to be followed in respect of some of the more important minerals are given below.

#### COAL

5. The main coal-producing areas in India are in Bihar and West Bengal which contribute nearly 82 per cent of the total output. The other areas are in Madhya Pradesh, Orissa, Hyderabad and Assam. The reserves of workable coal are estimated at 20,000 million tons, of which about 5,000 million tons are coal of good quality. The reserves of coking coal are, however, estimated to be of the order of only 2,000 million tons.

6. Though, speaking generally, the coal reserves may be considered fairly adequate for the plans of industrialisation, the position in regard to coking and semi-coking coal is not altogether satisfactory. The future policy should, therefore, be one of strict enforcement of conservation measures.

7. During the past three decades the production of coal has nearly doubled, and it reached a record figure of over 34 million tons in 1951. The railways are the largest consumers, taking nearly 31 per cent, two-fifths of which is coking and semi-coking coal. The consumption at the collieries themselves is about 11 per cent. It has been suggested that, if the management exercise proper control over their workers, who often take away coal without caring for quality or quantity, it should be possible to save an appreciable quantity of coal.

8. Of the total production of metallurgical coal, the railways consume 40 per cent and the iron and steel industry 21 per cent. Thirteen per cent is used for bunker and export, the balance being consumed by miscellaneous industries. The use of metallurgical coking coal for purposes other than the production of iron and steel



and coking is unnecessary and wasteful. This quantity should, therefore, be replaced by coal of other quality. The Railways are already taking steps to reduce the use of coking coal as speedily as possible.

9. Considering the great need for conserving coking coal, the Planning Commission has recommended that (1) the production of metallurgical coking coal may be maintained at the present level but mines producing coking coal should be closed if they can be re-opened without large capital outlay; and no new fields should be developed; (2) stowing, blending and washing should be enforced by law; this will probably have the effect of reducing the output of coking coal; (3) selective mining should be effectively stopped; (4) coking coal should be replaced by other types of coal where the use of coking coal is not necessary; and (5) coking coal mined in excess of the quantities needed for the iron and steel industry and coking should be exported in order to earn foreign exchange.

10. Development programme: (1) of the total of about 100 coal-fields in India, only a few have been investigated to a depth of 1,000 to 2,000 feet. All the fields should, therefore, be geologically mapped and their resources estimated to find out the extent of their reserves. A provision for this has been made in the Plan. At the same time, the working collieries should be surveyed so as to obtain reliable estimates of available resources. A physical and chemical survey of the nature and quality of coal seams should also be undertaken in various coal-fields.

(2) A scientific classification of Indian coals should be drawn up on the basis of calorific value, ash content, moisture and coking property. The classification should aim mainly at fixing the types and grades suited for various purposes. This question should be referred to a technical committee of experts familiar with Indian coal and with scientific classifications in other countries. Such a classification will assist in controlling the distribution and allocation of coal for different industries as well as making it possible to buy and sell coal according to specifications.

(3) At present, the railways transport more than 90 per cent of the coal mined in the country, and there are no navigable waterways by which it can be cheaply moved. Some coal is shipped by steamer from Calcutta to the coastal areas; but sea freights are substantially higher than railway freights. If the use of coal is to be rationalised, it is necessary to arrange to supply the consumers with suitable coal from the nearest coal-fields. With this object in view production from the outlying coal-fields like those in Rewa, Hyderabad and Assam and the Korba coal-fields in Madhya Pradesh should be stepped up. Production of non-coking coal from the existing collieries in Raniganj, Ramgarh and Karanpura coal-fields should also be increased with the object of replacing coking coal by non-coking coal for non-essential purposes. The cost of transport facilities required to develop these fields has been estimated at Rs. 850 lakh. Similar steps should be

taken to ease the difficult supply position in South India, western India, Kutch and north Bihar.

11. In addition to the above programme for increased production of coal, plans have also been drawn up for the exploration of the large reserves of lignite in south Arcot and for the development of some of the railway collieries.

12. The Government are also examining proposals for the mechanisation, proper lay-out and planning of future mines, the introduction of the piece-rate system of payment and linking bonus with the unit of production in order to increase output per man-shift.

13. No organised research on problems connected with coal-mining or the utilisation of coal has so far been carried out in India. The Fuel Research Institute should undertake research on the carbonisation and production of coke, the design of coke ovens, washing and blending of coal and the desulphurisation of coal.

14. The Planning Commission suggested that the conservation of high-grade coking coal should be enforced by legislation, that a consolidated cess should be levied in the place of the existing separate cesses, the yield being used to promote safety, conservation measures, labour welfare, research, etc., and lastly that a Coal Board should be set up to deal with the problems of the coal industry in a co-ordinated manner. Accordingly, the Coal Mines (Conservation and Safety) Act of 1952 which empowers the Central Government to adopt measures for the conservation of coal has been enacted and the Central Government have set up under this Act a Coal Board, consisting of a chairman and three members, and have prescribed the rates of excise duty to be levied on coal and coke and the additional excise duty leviable on hard coke.

#### IRON ORE

15. India has enormous resources of iron ore. Ores of good quality are found in Bihar, Orissa, Madhya Pradesh, Madras, Bombay and Mysore. There are also smaller deposits in the Almora district of Uttar Pradesh, Pepsu and the coal-fields of West Bengal, while deposits of lower grade are scattered over different parts of the peninsula. In most cases the ores have a high percentage of metallic iron and are deficient in phosphorus and sulphur. The reserves of good quality iron ore (containing over 60 per cent iron) are estimated to be over 10,000 million tons, the bulk of which is concentrated in Bihar and Orissa.

16. Although the ore deposits have been surveyed in a general way, the investigations have not been sufficiently detailed to give an accurate idea of their quantity and quality except in a few cases. It is, therefore, proposed to investigate carefully the deposits in Bonai and Keonjhar in Orissa, Drug, Chanda and Bastar in Madhya Pradesh, Ratnagiri in Bombay and Sandur in Madras.

17. The production of iron ore has varied between two to three million tons during the past few years. Most of the ores are consumed by the three iron and steel plants at Tatanagar, Asansol and Bhadravati, while a small quantity is exported. The average annual production of pig iron is 1.5 to two million tons and that of steel about a million tons. The domestic demand is not by any means met in full and the gap has to be filled by imports. Both iron and steel have been in short supply during the war and in the post-war years.

18. The demand for pig iron by 1955-56 is estimated at 2,735,000 tons and of steel at 2,500,000 tons as against the present production of 1,878,000 tons and 1,050,000 tons respectively. The increased production of pig iron and steel which is envisaged in the Plan will require the increased production of raw materials. This in turn will mean that transport facilities will have to be expanded for collecting these raw materials and transporting the manufactured products.

19. The export of iron ore has been fluctuating, but in recent years the demand from abroad has increased ; limitations of transport have, however, prevented it being met in full. The long-term policy is to expand the production of pig iron to meet both internal and foreign demands instead of permitting exports of ore.

#### MANGANESE ORE

20. Manganese is an important industrial mineral used in the smelting processes of the iron and steel industry. Large deposits of this mineral occur in India and they are of special importance as none of the great industrial countries, except the U.S.S.R, possess manganese deposits of any significance. These deposits are concentrated in a few regions in Madhya Pradesh, Madhya Bharat, Madras, Mysore and Bombay and in a few scattered areas in Bihar and Orissa. The largest and richest deposits are those in Madhya Pradesh.

21. No reliable estimates of the reserves are available, but on a rough estimate the reserves of high grade ore may be assumed to be 15 to 20 million tons and those of lower grade to be about three times this quantity.

22. For the past 40 years the annual production of manganese has averaged about 600,000 tons ; in three years it exceeded the million-ton mark. Except for a small quantity consumed by the Tata Iron and Steel Company almost the entire amount is exported in the form of ores.

23. Manganese is used in the steel industry mostly for the production of ferro-manganese required for steel plants. A certain amount is consumed by the glass industry, in the manufacture of dry cells, and by the chemical industry. It is estimated that with the

expansion of the iron and steel and other industries, domestic requirements will rise to 100,000 tons by 1957-58. No difficulty is expected in meeting the increased demand.

24. Nevertheless, having regard to the lack of information about the manganese reserves as well as the requirements of an expanding iron and steel industry, a policy of strict conservation is called for. If the reserves of high-grade ore are found to be smaller than the present estimate of it, the policy of exporting up to one million tons of high grade ore annually will have to be reexamined.

25. It is recommended that (1) as no reliable estimates are available of the reserves of manganese ore, an investigation should be carried out of the deposits in Madhya Pradesh and of certain deposits in Orissa, Bombay, Mysore and Madras; (2) the ore should be converted into ferro-manganese and manganese chemicals for export purposes, instead of being exported in the raw form; and (3) investigations regarding the beneficiation of low-grade ore and for the recovery of manganese ore in the dumps should be undertaken. Measures should also be taken to control and eliminate the wastage of ore in mining.

#### CHROMITE

26. India has moderate supplies of chromite which are chiefly to be found in Bihar, Mysore, Bombay, Madras and Orissa. There are also deposits in Ladakh in Kashmir State but they are virtually inaccessible. Those in Manipur State and the Andaman Islands need to be further investigated before their economic importance can be determined.

27. No reliable estimates of chromite reserves are available. Production of chrome ore in 1950 and 1951 was 16,729 tons and 15,802 tons respectively. A considerable portion of it was exported, practically all of it being high-grade ore containing 46 per cent and above of chromic oxide. The domestic consumption of chromite is mostly confined to the manufacture of refractory bricks and chrome chemicals. There has so far been no attempt to manufacture ferro-chrome or chromium alloy, except on a very small scale by Tatas.

28. In view of the absence of accurate data regarding the extent of the reserves, the export of high-grade ore has been totally banned since June 1951 and the export of low-grade ores is being licensed up to a maximum of 10,000 tons a year. This policy should be reviewed as soon as more information has been obtained about the reserves.

29. Detailed mapping and, if necessary, drilling should be undertaken in the chromite-bearing areas in Singhbhum in Bihar, Baula Hills in Orissa, Ratnagiri in Bombay and Krishna in Madras. Furthermore, research should be undertaken on the beneficiation of low-grade chrome ores.

**NON-FERROUS METALS**

30. India's reserves of non-ferrous metals, such as copper, lead and zinc, are inadequate, and there is practically no tin in this country. These metals have, therefore, to be imported, and the cost of imports amounted to Rs. 16 crore in 1950.

31. Detailed geological and prospecting operations for copper should be undertaken in the copper belt of Singhbhum and Hazaribagh in Bihar, Khetri in Jaipur, Daribo in Alwar, Gani in Madras and Almora and Tehri-Garhwal in Uttar Pradesh. Investigations should also be made of the reported occurrence of lead-zinc ores in several places in the country and of tin in the Hazaribagh district of Bihar.

**BAUXITE**

32. Bauxite, the chief ore of aluminium, is fairly widely distributed in India. The most important deposits are found in the States of Bombay, Madhya Bharat, Madhya Pradesh and Bihar. Some also occur in Orissa, Madras and Kashmir.

33. No reliable figures of reserves are available but the total reserves of all grades may be considered to be of the order of 250 million tons, of which the high grade reserves would probably amount to 35 million tons.

34. In the last two years the domestic aluminium industry has been consuming annually about 20,000 tons of bauxite. Both the manufacturing units have plans for expansion which will mean a demand for 45,000 tons of bauxite by 1955-56. This can easily be met.

35. A survey should be made of the deposits in order to obtain reliable data regarding the reserves and the characteristics of the ore from each large deposit. The use of bauxite for the manufacture of refractories and abrasives should be examined by the Bureau of Mines in collaboration with the Central Glass and Ceramic Institute.

**MAGNESITE**

36. Magnesite is used in the production of magnesium salts, metallic magnesium and refractory bricks. Large deposits of this mineral occur in Madras, Mysore, Uttar Pradesh, Coorg, Bombay, Rajasthan and Bihar.

37. Only a part of the output is used in the manufacture of refractory bricks for steel works and a considerable quantity is, therefore, exported. There is, however, scope for using magnesite in the manufacture of oxychloride cement and as a raw material for the manufacture of metallic magnesium. Research should also be undertaken with a view to utilising the low grade magnesite and

chromite rock for refractories instead of the high-grade magnesite now used for the purpose.

### MICA

38. Mica is a mineral of great strategic importance, the chief demand for it coming from the electrical industry. India is one of the important sources and produces between 70 to 80 per cent of the world's total output of sheet (block) mica. The domestic consumption is, however, small and the mica industry is almost entirely dependent on the export market.

39. The principal deposits are found in Bihar, Rajasthan and Madras, but in recent years, its occurrence has been reported in other parts of India also. Owing to the irregular disposition of the mineral in the rock, the size of the reserves is unascertainable. It can, however, be safely stated that there are untapped reserves which will run for many decades at the present rate of production.

40. The annual value of mica exported during the last decade was Rs. 1.5 to Rs. 3 crore. This has gone up during the past two years as a result of large purchases made by the Government of the U.S.A. for stock-piling.

41. Mica mining is at present done mostly on a small scale, and most of the workings are open-cast quarries or shallow mines. Of a total of about 600 lessees, the majority have limited financial resources. They sell their mica to middlemen immediately after it is mined in order to obtain money to continue their mining operations. There has, therefore, been no incentive to adopt systematic mining operations or to employ qualified managers. The result has been a considerable wastage. Steps are being taken to make the appointment of qualified managers in the mica mines compulsory.

42. Mica is used in industry practically in its natural form, except for trimming, splitting and cutting to shape. Mica splittings and films are made into sheets or applied to cloth with a binder and pressed into suitable shapes. The mica thus prepared is graded and classified according to size and quality. The classification of quality is to a large extent a matter of judgment. This often leads to a strong difference of opinion between the buyer and seller. To obviate this difficulty, it will be necessary to set up standards and a machinery for arbitration. Meanwhile, the Indian Standards Institution has drafted standard specifications which are to be approved by the International Standards Institution.

43. On a rough estimate, the consumption of mica in India is about 7,000 lb. a year. This is shared between the railways, electric supply undertakings and iron and steel companies. The power projects under construction or contemplation will increase the demand for mica splittings and mica blocks, but there will be no difficulty in meeting their demand.

44. The consumption of micanite or built-up mica is valued at about Rs. 10 lakh the bulk of which has to be imported as domestic

production is negligible. The possibility of setting up a mica industry to meet the country's requirements requires to be examined.

45. A large quantity of mica is thrown away as waste in the process of mining and trimming. It is possible to reclaim this by grinding it and using the ground mica as a 'filler' in various industries. The possibilities of setting up a mica grinding industry should be explored.

46. The Commission makes the following recommendations :

(a) The mica-bearing areas in Bihar and Madras are fairly well-known, but no detailed maps have yet been made. Detailed geological work should be undertaken which is likely to bring to light new occurrences, particularly in Rajasthan.

(b) The Bureau of Mines in collaboration with the National Physical Laboratory should undertake research on the properties of mica produced from different areas so that it will be possible to classify mica according to its electrical properties. Investigation should also be directed to devising an economic method of manufacturing micanite and grinding mica.

(c) The possibility of setting up a Central Marketing Board for mica should be explored. This will reduce complaints by foreign purchasers about the quality of mica shipments.

#### GYPSUM

47. Gypsum ranks next to coal and iron as a mineral of great importance in the industrial economy of the country. Before World War II, it was used mostly as a raw material in the manufacture of cement and plaster of Paris. Its importance has grown as an ingredient in the preparation of ammonium sulphate, a valuable fertiliser. It can also be used for the manufacture of sulphuric acid. With the setting up of a fertiliser factory at Sindri, increasing attention is being paid to the deposits of gypsum in this country. These deposits occur in several parts of India, the best known being in Rajasthan and South India. Smaller deposits occur in Tehri-Garhwal, Himachal Pradesh and in parts of western India.

48. Production of gypsum from Indian deposits has risen from about 140,000 tons in 1949 to a little over 200,000 tons in 1951. At present, the annual consumption is about 94,000 tons for cement and about 2,000 to 3,000 tons for plaster of Paris, but when the Sindri fertiliser factory comes into full production it will require about 600,000 tons annually, and about 37,000 tons are required by the Fertiliser and Chemicals Ltd. of Travancore for the production of ammonium sulphate. The increase in cement production envisaged in the Plan will also increase the demand for gypsum and by 1955-56 the total requirements are expected to rise to 870,000 tons.

49. At present, the mining of gypsum is confined to small quarrying operations. With increased demand, large-scale opera-

tions will have to be undertaken and even mechanisation may become necessary both in mining and transport.

50. It is recommended that the search for gypsum should be continued in different parts of India. Systematic field investigation aided by drilling should be undertaken in the areas of Rajasthan which are known to contain gypsum. Efforts should also be made to recover gypsum from salt pans.

#### SULPHUR

51. Sulphur occurs in nature as native sulphur and in combination as pyrites. There are no large deposits of native sulphur in India. Deposits of pyrites occur over small areas in Kashmir, Bihar, Bombay, Mysore and near Simla, while substantial quantities are found in the gold deposits in the Nilgiri district of Madras. Most of the copper deposits also occur in the form of copper pyrites. No detailed estimates are available of the quantities of pyrites in any of the deposits.

Some types of Indian coal, too, are rich in sulphur and may be considered as a source of sulphur if it can be economically recovered. The Fuel Research Institute is investigating this.

About 5,000 to 6,000 tons of sulphur are estimated to escape annually into the air in the roasting of copper ores. The question of recovering it or converting it into sulphuric acid is under consideration.

52. As sulphur is not produced locally, the country's requirements are met by imports. India imported 41,000 tons in 1949 and 55,000 tons in 1950. During the past three years, the annual value of imports has averaged about Rs. 80 lakh.

53. The present annual requirements of sulphur are estimated at 65,000 tons. The major consumer is the sulphuric acid industry whose output has increased from about 25,000 tons in 1939 to a little more than 100,000 tons in 1950. The demand for sulphuric acid will increase to about 215,000 tons by 1955-56. The total requirements of sulphur by 1955-56 will thus be nearly 85,000 tons.

54. It is recommended that (1) in view of the absence of deposits of natural sulphur in India, all known and possible sources should be explored, particularly the deposits of pyrites at Ajmor in Bihar, Taradevi near Simla, Chitaldrug in Mysore and Polur in Madras; (2) wherever possible pyrites or other raw materials should be substituted for native sulphur; (3) the question of recovery of sulphur from the smelting works of the Indian Copper Corporation should be pursued; (4) the use of gypsum as a raw material for sulphuric acid should be examined; and (5) research should be conducted on the desulphurisation of coal and the commercial recovery of sulphur.



## CHAPTER XXVIII

### SCIENTIFIC AND INDUSTRIAL RESEARCH

In the planned economy of a country science must necessarily play a very important part. Improvements in techniques evolved as a result of scientific research can bring about great increases in production. National resources can be augmented by the substitution of cheap and abundant materials for those in scarce supply and by finding uses for materials which have remained unutilised. An extensive and balanced programme of research, covering every sector of the economy, is, therefore, essential for increasing national wealth and raising the standard of living.

2. During World War II, when India became a major supply centre for the armed forces in the East, attention was focussed on the importance of scientific and industrial research. Substitute materials had to be found for the manufacture of goods which had previously been imported, and processes had to be developed whereby these substitutes could be used. In 1940 the Government of India constituted the Board of Scientific and Industrial Research, and two years later the Council of Scientific and Industrial Research was also formed. A number of problems, mainly connected with military supplies, were dealt with and processes developed for the production of essential articles from indigenous materials.

3. Since the country became independent, there has been still greater emphasis on scientific and industrial research and programmes have been undertaken for (i) the scientific survey and appraisal of resources ; (ii) the development of improved processes and techniques by research ; and (iii) the application of the results of research to production. New surveys and investigations have been initiated in several fields and survey agencies, such as the Geological Survey, have been strengthened in order to explore more thoroughly the natural resources of the country. But the most significant development in this sphere has been the establishment of a number of laboratories and research institutes in different parts of India. They are :

1. The National Physical Laboratory, New Delhi.
2. The National Chemical Laboratory, Poona.
3. The National Metallurgical Laboratory, Jamshedpur.
4. The Fuel Research Institute, Jealgora.
5. The Central Food Technological Research Institute, Mysore.
6. The Central Drug Research Institute, Lucknow.
7. The Central Glass and Ceramics Research Institute, Calcutta.

8. The Central Road Research Institute, Delhi.
9. The Central Building Research Institute, Roorkee.
10. The Central Leather Research Institute, Madras.
11. The Central Electro-Chemical Research Institute, Karaikudi.

Most of these institutions have already begun work and are assessing resources, conducting tests, evolving standards and developing useful processes. In laying down standards for various raw materials and finished products, they are working in close collaboration with the Indian Standards Institution. Some of them, however, are still in the formative stage and are overcoming initial difficulties of finding suitable personnel and obtaining proper equipment.

4. In addition to these, it is proposed to establish three more Institutes during the period of the Plan, viz., a Radio and Electronics Research Institute, a Mechanical Engineering Research Institute with special emphasis on the study of problems connected with cottage and small-scale industries, and a Central Salt Research station.

5. A considerable proportion of industrial production is in the hands of medium and small-scale producers who cannot afford the expenses of independent research. The establishment of laboratories and institutes will make the results of research available to them, and thereby enable them to reduce costs and improve the quality of their products. Thus the establishment of these institutes is complementary to the development of small-scale and cottage industries.

6. The financing of research has so far been mainly the responsibility of the Central Government and to a great extent this will have to continue. But there is need for initiative on the part of industry in fostering industrial research. Several prominent industrial concerns made substantial contributions towards the cost of the national laboratories, and the industries concerned established at their own cost—the Government assisting with substantial contributions—the following research associations:—

1. The Ahmedabad Textile Industry's Research Association, Ahmedabad.
2. The Silk and Art Silk Mills Research Association, Bombay.
3. The South India Textile Industry's Research Association, Coimbatore.

It is to be hoped that as industry becomes more research-minded it will begin to support research on a large scale.

7. For scientific research to make its full contribution it is necessary that the results of laboratory work should be translated into commercial production. Experimentation on a pilot plant is

necessary in many cases. In the development programme for scientific research provision has been made for the purchase of pilot plant equipment for most of the laboratories.

8. It has been found, however, that even when pilot plant experiments have been completed, there may still, in some cases, be a gap before commercial production can be undertaken. It would be necessary in such cases to instal semi-commercial or prototype plants to demonstrate effectively the new processes and their economic possibilities. Thereafter, it would be possible to decide whether commercial production should be taken up as a State-sponsored undertaking or left to private industry to develop. For this purpose the establishment of a National Research Development Corporation has been proposed and the Planning Commission considers that this proposal should be accepted.

9. The promotion of scientific research on a large scale calls for an adequate supply of trained personnel. Scientists and technicians will be required in considerable numbers for manning research institutes and for running industries. The steps proposed to be taken for meeting the shortage of higher technical and scientific man-power are described in Chapter XXXIII.

## CHAPTER XXIX

### INDUSTRIAL DEVELOPMENT AND POLICY

Though in previous chapters emphasis has been laid on the need at the present juncture for a substantial and rapid improvement in agriculture, this does not mean that industrial development is any less important. In an under-developed economy there is really no conflict between agricultural and industrial development. Improvement in agriculture cannot proceed beyond a point unless the surplus working force on the land is progressively diverted to industries and services. On the other hand, industrial development requires a large increase in the supply of food for maintaining the industrial population and of raw materials for expanding industrial production.

#### INDIAN INDUSTRIAL STRUCTURE

2. The relative backwardness of industrial development in India may be judged from the fact that, in 1948-49, factory establishments accounted for only about 6.6 per cent of the total national income and that the total labour force engaged in them was only about 2.4 millions or 1.8 per cent of the working population. While in aggregate India's industrial output may look massive, its per capita output is very low compared with that of advanced countries.

3. Prior to the first world war the only major industries which had developed substantially were cotton and jute textiles for which the country had exceptional natural advantages. During the inter-war period, under the influence of a policy of discriminating protection, the cotton textile, iron and steel and paper industries all expanded considerably and a large sugar industry, able to meet the entire requirements of the country, was built up. The production of cement, matches, glass, vanaspati and soap also increased substantially.

4. The second world war and the inflationary and scarcity conditions which followed gave a considerable fillip to Indian industry. Well-established industries, such as iron and steel, cotton textiles, paper and cement, operated to full capacity between 1939-1945 and expanded subsequently. Others also, such as light engineering, chemicals and pharmaceuticals, received a powerful impetus. In addition, a whole range of new industries came into existence, e.g., the locomotive, automobile, ship-building, bicycle, sewing-machine, diesel engine, textile machinery, ball and roller bearing and rayon industries.

5. Up till now the major emphasis in industrial development in India has been on consumer goods industries, while basic capital goods and producer goods industries have lagged behind. The output of consumer goods industries, such as cotton textiles,

sugar, soap, matches and salt is, on the whole, sufficient to meet the existing low level of demand in the country. On the other hand, the existing capacity for the production of capital and producer goods is in most cases quite inadequate even for present requirements. The output of iron and steel is barely sufficient to meet 50 per cent of the demand and that of heavy chemicals is no less inadequate. In regard to the manufacture of the plant and machinery required by the various industries, only a small beginning has been made with textile machinery. The large developments in power generation now being undertaken have to depend entirely on generating equipment which has to come from abroad. Similarly, in the manufacture of synthetic drugs, antibiotics, dye-stuffs and organic chemicals only small beginnings have been made. In order to achieve a high rate of industrial advance these deficiencies have to be made good.

#### NATIONAL PLANNING AND THE PRIVATE SECTOR

6. The essentials of State policy in regard to industrial development have been stated in the Industrial Policy Resolution of April 1948. The Central Government is to reserve exclusively to itself certain industries, such as arms and ammunition. In the case of certain other industries, i.e., coal, iron and steel, aircraft manufacture, ship-building, the manufacture of telephone, telegraph and wireless apparatus, the State, in the shape of the Central and State Governments and other public authorities, is to be responsible for further development except to the extent that the co-operation of private enterprise is considered necessary. The rest of the industrial field is left open to private enterprise, but regulation and control by the Central Government is envisaged for certain industries of special importance and the State will intervene whenever the progress of any industry under private enterprise is found to be unsatisfactory.

7. Within the framework of this policy, it is possible to have a programme of industrial development which meets the country's present needs. The nationalisation of existing enterprises, which means the acquisition by the Government of existing productive assets, has, in our view, only a low priority, especially as most of the purposes of such transfer can be served by judicious regulation. Private enterprise is capable of making an important contribution to the development of the economy, but it has to accept new obligations towards the worker, the investor and the consumer and to maintain a high standard of efficiency and integrity.

8. The Industries (Development and Regulation) Act of 1951 is designed to enable the Government to carry out the industrial policy described above. It applies to 37 industries listed in the first schedule which include: (a) consumer goods industries like cotton and woollen textiles, vanaspati and vegetable oils, sugar, salt, pharmaceuticals and drugs, etc.; (b) capital goods and producer goods industries like iron and steel, locomotives and rolling stock, non-ferrous metals and alloys, heavy machinery for industry, including ball and roller bearings, gear wheels, etc., and machine tools; (c)

industries producing fuel, such as coal, power and industrial alcohol, motor and aviation fuel, and other oils; (d) industries producing machinery and equipment for the generation, transmission and distribution of electrical energy, electric motors, batteries and electrical goods; (e) heavy chemicals including fertilisers; (f) automobiles including tractors, aircraft, ship-building and telephones, telegraph and wireless communication apparatus; and (g) various others, such as arms and ammunition, agricultural implements, mathematical and scientific instruments, small and hand tools, sewing and knitting machines, bicycles, hurricane lanterns, glass and ceramics. The important provisions of the Act are:—

- (i) all the existing industrial undertakings in the scheduled industries have to be registered within a prescribed period;
- (ii) no new industrial unit can be established or substantial extension to existing plants made without a licence from the Central Government;
- (iii) the Government can order an investigation in respect of any scheduled industry or undertaking if, in its opinion, there has been an unjustifiable fall in the volume of production or a marked deterioration in quality or an increase in price for which there is no justification;
- (iv) in the event of an industry or undertaking not carrying out the directions issued after such an investigation, the Government can take over its management.

9. For the purpose of advising the Government on matters concerning the development and regulation of the scheduled industries, the Act provides for the setting up of a Central Advisory Council representing owners, employees, consumers and certain other classes including primary producers. Such a Council has already been set up.

10. The major agency provided by the Act for establishing the necessary liaison between the public and private sectors and for ensuring that private industry conforms more and more to the planned pattern of development are the Development Councils. These Councils can be set up by the Central Government for any of the scheduled industries. They are to consist of representatives of the employers and employees in the industry, representatives of the interests of the consumers of the industry's products, and persons with special knowledge of the industry and can be assigned a number of functions, the most important of which are:—

- (i) to recommend targets for production and co-ordinate production programmes;
- (ii) to suggest norms of efficiency with a view to eliminating waste, improving quality and reducing costs;
- (iii) to recommend measures for securing further utilisation of capacity and improving the working of the industry;

- (iv) to investigate the possibilities of decentralising the stages and processes of production with a view to encouraging the growth of allied small-scale and cottage industries ;
- (v) to promote or undertake scientific and industrial research and to collect statistics.

These Development Councils will need adequate administrative and technical staff which will be provided by the Government. This procedure will not only enable the Development Councils to function efficiently but will also assist the Government in building up a cadre of trained officials conversant with the economic and administrative problems of various industries and capable, if the need arises, of undertaking managerial responsibilities. For meeting the expenditure involved, the Act provides for the levy of a cess on goods manufactured in any scheduled industry. The proceeds of this cess would be used to meet, besides the administrative expenses of the Development Council, expenditure for the promotion of scientific and industrial research pertaining to the industry, for improvements in the design and quality of the products of the industry and for providing facilities for the training of technicians and labour in the industry concerned. Development Councils along these lines are to be set up immediately for seven industries, namely, heavy chemicals (acid) and fertilisers, heavy chemicals (alkali), paper, including news-print and paper board, leather and leather goods, bicycles and their parts, glass and ceramics, and internal combustion engines and power-driven pumps.

#### INDUSTRIAL PRIORITIES IN THE PLAN

11. In defining the priorities for industrial development within the period of the Plan, it is necessary to take into account the immediate objectives in view, the resources available and the broad framework of policy in regard to the operation of the public and private sectors outlined above. The Plan provides for the completion of the various industrial projects already under implementation by the Central and State Governments. In addition, the Central Government have a special responsibility for establishing certain defence industries so as to safeguard and develop the defence potential of the country. Apart from these, the following general order of priorities is proposed in the industrial field :—

- (i) fuller utilisation of existing capacity in producer goods industries like jute and ply-wood and consumer goods industries like cotton textiles, sugar, soap, vanaspati, paints and varnishes ;
- (ii) expansion of capacity in producer and capital goods industries like iron and steel, aluminium, cement, fertilisers, heavy chemicals, machine tools, etc. ;
- (iii) completion of industrial units on which a part of the capital expenditure has already been incurred ;

- (iv) establishment of new plants which would lend strength to the industrial structure by rectifying, as far as resources permit, the existing lacunae and drawbacks, e.g., manufacture of sulphur from gypsum, chemical pulp for rayon, etc.

12. The emphasis on fuller utilisation of existing capacity must necessarily be a prime consideration in policy, for, where such capacity exists, increase in production can usually be secured at diminishing cost per unit. In so far as the failure to utilise existing capacity fully is due to factors other than the lack of raw materials, a careful analysis will have to be made of the difficulties pertaining to each industry and the necessary steps taken to obviate them.

13. Expansion of capacity in industries which produce capital goods and producer goods is necessary, firstly, in order to meet the additional demands on them on account of the development of agriculture, irrigation and electricity during the period of the Plan, and, secondly, for establishing a better balance in the industrial structure. Iron and steel are of basic importance to development whether in agriculture, in industry or in transport, and since they are also essential for defence, they have to be given the highest priority. Capital goods industries like locomotives, machine tools, textile machinery, heavy electrical machinery, etc., and industries manufacturing agricultural implements, diesel engines and pumps and thus contributing directly to improvement of productivity in agriculture must receive increasing attention both immediately and in years to come. Among the producer goods industries, cement and fertilisers rank high in importance.

14. At the commencement of the period of the Plan, there were in the private as well as in the public sector several industrial units on which considerable expenditure had been incurred but which had not been completed. Early completion of such units is necessary in order that the country may get the benefit of these investments. The criteria which govern the commencement of a new industrial project must conform to the basic priorities in the Plan ; but in regard to units which have already been taken in hand and on which considerable sums of money have been spent, some relaxation of these criteria is justifiable.

15. In addition, special efforts are necessary for the establishment of new plants for industries like the manufacture of sulphur from gypsum, pulp for rayon and news-print, and for refining ores or scrap for non-ferrous metals like zinc, copper and tin. The importance of these industries lies in the direct contribution they make towards an increase in the supply of key materials of which there is a world-wide shortage.

16. It will be seen that in the scheme of priorities set out above, an increase in the supply of consumer goods, has, under present conditions, to come mainly from the fuller utilisation of existing capacity.



This means that the setting up of new plant and machinery for these industries has in the period of the Plan a low priority. By and large, the capacity of industries producing essential goods like cotton textiles, sugar, salt, matches and soap is adequate for present requirements. The emphasis of policy in regard to them must, therefore, be on increasing the efficiency of existing plants by renovation and modernisation and by securing a better balance in the plants. In the case of consumer goods of secondary importance, such as radios, bicycles, automobiles, electric fans, etc., the problem again is one of utilising existing capacity fully, of developing the units which have already been set up or are under construction to at least the minimum economic size, and of promoting a progressive switch over of assembly plants to manufacturing.

#### DEVELOPMENTS IN THE PUBLIC SECTOR

17. The programme of expansion proposed for the public sector of the industrial field is given in Statement I at the end of this chapter. The total estimated expenditure on projects both of the Central Government and of the States amounts to Rs. 94 crore, about Rs. 83 crore of which will be in respect of projects directly under the Central Government. The projects which are being undertaken by the Governments are estimated to cost about Rs. 11 crore of which Rs. 4.8 crore will be advanced by the Central Government as loans. The participation of private capital, indigenous as well as foreign, is envisaged in respect of certain of these projects to the extent of about Rs. 20 crore.

18. The major industrial project in the public sector is the one for a new iron and steel plant estimated to cost Rs. 80 crore in all and Rs. 30 crore during the period of the Plan, of which Rs. 15 crore is expected to be secured through the participation of indigenous and foreign capital. The estimated capacity of this plant will be about 800,000 tons of pig iron and at least 350,000 tons of steel. By 1955-56 it is expected to be producing about 350,000 tons of pig iron. The Plan also provides for the completion of the Sindri fertiliser factory with a total capacity of 350,000 tons of ammonium sulphate per annum, the completion of the Chittaranjan locomotive factory, which by 1957 will be capable of turning out 120 locomotives a year and the completion of the machine-tool factory at Jalahali in Mysore State. This factory will specialise in the production of high precision machine tools and will thus provide the basis for the subsequent expansion of heavy and light engineering industries. It is estimated to cost Rs. 9.63 crore in the period of the Plan and by 1955-56 will be producing annually 1600 machine tools worth over Rs. 4 crore. Another important project for which provision is made is the acquisition and development of the Vishakhapatnam ship-building yard. It is proposed to manufacture engines and boilers in the workshop at the yard and to expand the berths for the building of ships so as to bring down costs. The possibility of establishing a heavy electrical industry is also being explored and a portion of the lump-sum provision of Rs. 50 crore is ear-marked for making a beginning in basic industries.

19. It will be seen that most of the projects relate to the manufacture of capital goods or of intermediate products which are of vital importance not only from the point of view of immediate needs but for future economic development. Their completion will correct to some extent the present lopsidedness of the industrial structure. The penicillin and D.D.T. factories do not fall in the category mentioned above, but have a special importance at this juncture for public health.

20. Among the projects of the State Governments, mention must be made of the Madhya Pradesh news-print project, designed to produce 30,000 tons of news-print annually, and the expansion of the Mysore Iron and Steel Works, designed to produce an additional 60,000 tons of finished steel by using for the first time in this country the technique of electrical smelting of iron ores.

21. The increasing participation of the Government in industrial development raises the question of the appropriate organisation for enterprises in the public sector. Their successful conduct requires that the executives in charge should have a great deal of initiative and the power to take quick decisions. This is difficult to secure if enterprises are directly under a government department. On the other hand the extent of autonomy which can be insisted on for such enterprises is a matter on which it is difficult to dogmatise without further experience. Several of the industrial undertakings directly under the Central Government have been organised with boards of directors vested with powers of management in the same manner as in the case of joint stock companies in the private sector. This form of organisation appears to be suitable at the present stage and should be extended.

#### DEVELOPMENTS IN THE PRIVATE SECTOR

22. The programme of expansion in certain major industries in the private sector is set out in Statement II at the end of this chapter. The total capital investment required for carrying out this programme is estimated to be Rs. 233 crore exclusive of Rs. 150 crore estimated to be required for the replacement and modernisation of plant and machinery. About 80 per cent of this investment will be in respect of capital goods and producer goods industries. The major part of it will be in the iron and steel industry (Rs. 43 crore), petroleum refineries (Rs. 64 crore), cement (Rs. 15.4 crore), aluminium (Rs. 9 crore) and fertilisers, heavy chemicals and power alcohol (Rs. 12 crore). Additional electric power generation in the private sector (176,000 kw.) will involve an expenditure of Rs. 16 crore in the five year period. In the consumer goods industries the emphasis is mainly on achieving increases in production through fuller utilisation of existing capacity, but considerable investment is envisaged in certain new lines, such as rayon, drugs and pharmaceuticals.

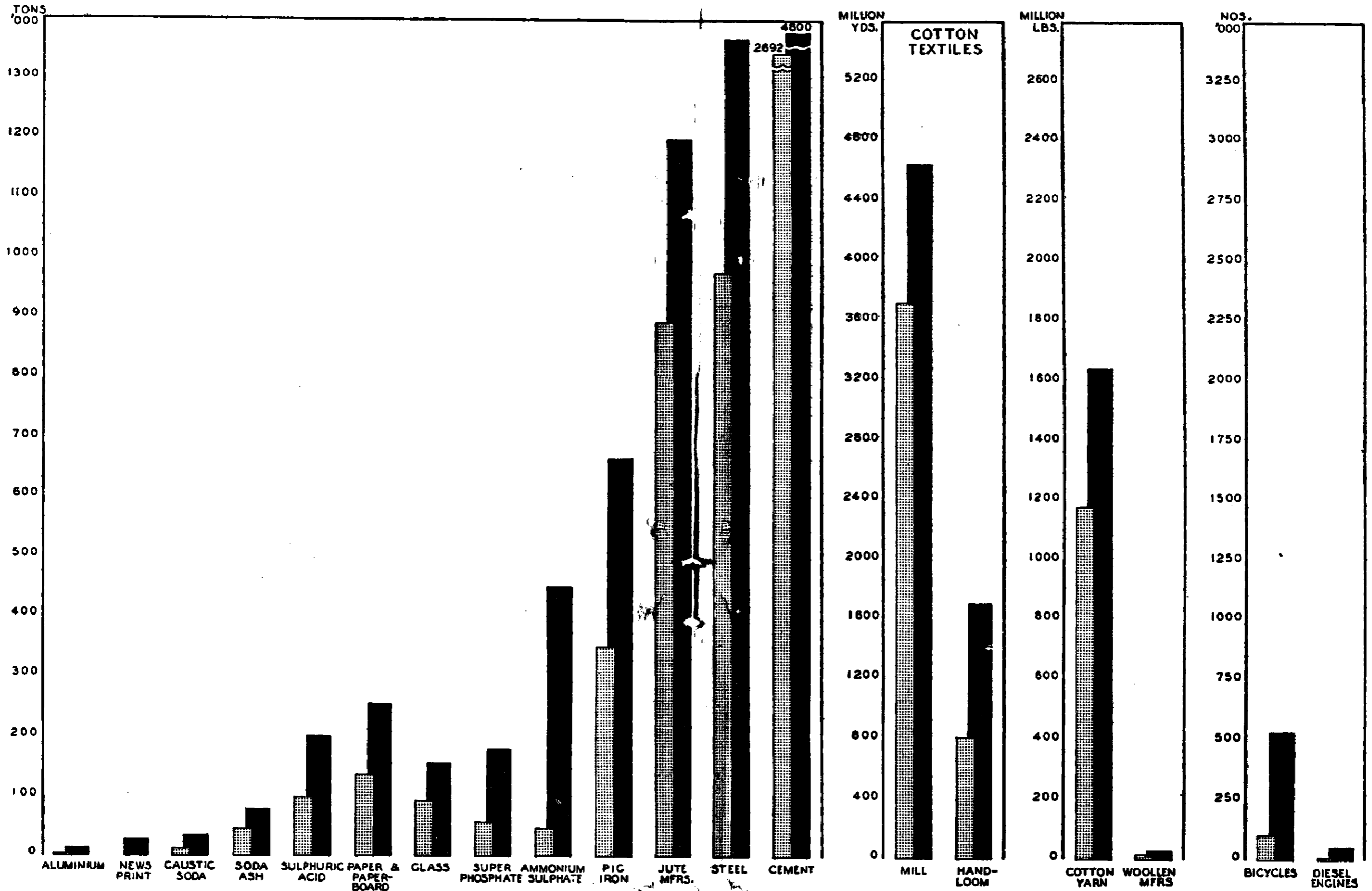
23. It must be remembered that in the private sector, while the Government can influence, it cannot determine the actual course

# TARGETS OF THE FIVE YEAR PLAN

## INDUSTRY

▨ PRODUCTION IN 1950-51

■ TARGET FOR 1955-56



of investment. The programmes proposed for the development of the various industries are, therefore, in the nature of best judgements of what is feasible and desirable. They have, however, been worked out in close consultation with representatives of the industries concerned as also with independent experts and technicians and are the result of a careful study and assessment, on the basis of such data, often imperfect, as is available, of the need and scope for expansion in conformity with the priorities set out in paragraph 11. Studies of 42 organised industries have been published separately in a special volume devoted to this subject.

24. Taking both the public and the private sectors of industry together, about 26 per cent of the total investment in the period of the Plan is to go into the metallurgical industries, (iron and steel and aluminium), 20 per cent into petroleum refining, 16 per cent into engineering industries, and 8 per cent into the manufacture of heavy chemicals, fertilisers and pharmaceuticals. Relatively smaller investments are envisaged in other industries, the textile industry (cotton, jute, rayon and wool) accounting for about 6 per cent, cement for about 5 per cent and paper, paper board and news-print for about 4 per cent. The production of major producer and capital goods would register increases as under:—

1. Heavy chemicals (sulphuric acid, caustic soda and soda ash)	(thousand tons)	156
2. Fertilisers (ammonium sulphate and superphosphate)	.. ..	528·6
3. Iron and steel		
(a) Pig iron (available for foundries)	.. ..	310
(b) Steel	.. ..	394
4. Aluminium	.. ..	8·3
5. Cement	.. ..	21,080
6. Locomotives	.. .. 150 (+50 boilers)	
7. Diesel engines	.. (in thousands)	44·5
8. Power-driven pumps	.. .. 45·7 to 50·7	
9. Carding engines	.. (Number)	600
10. Spinning ring frames	.. ..	440
11. Plain, semi and automatic looms	.. ..	4,100

In respect of consumer goods, substantial increases in production are expected in cloth, sugar, paper and paper board, soap, sheet glass and vegetable oils as shown below:—

Cloth	.. ..	1872 million yds.
Sugar	.. ..	384,000 tons
Salt	.. ..	429,000 "
Paper and paper board	.. ..	86,000 "
Sheet glass	.. ..	20,150 "
Vegetable oils	.. ..	182,000 "

Increases are also expected in respect of durable consumer goods like bicycles and sewing-machines and of insecticides (benzene hexachloride and D.D.T.), antibiotics (penicillin, aureomycine, etc.) and other synthetic drugs.

#### PROGRESS IN THE ACHIEVEMENT OF TARGETS

25. In the course of the past 18 months, there has been a general increase in industrial production as a result of (a) the coming into operation of new industrial units which were under construction or in the early stages of production at the commencement of the Plan, (b) the beneficial effects of replacements of plant and machinery carried out by some of the industrial establishments in the post-war period, (c) fuller utilisation of the installed capacity of some industries owing to the increased availability of raw material (d) improvements in the application of import policies and their administration, and (e) improvement in the transport facilities provided by the railways. A Statement showing the total additional capacity and production envisaged by the end of the period of the Plan together with the achievement of some of the industries in 1951-52 will be found at the end of this chapter (Statement III). This Statement shows that the increase in capacity registered in 1951-52 in the more important industries when expressed as a percentage of the total expansion envisaged was: cement 30 per cent; spindleage for yarn 46 per cent; nitrogenous fertilisers 87 per cent; phosphatic fertilisers 60 per cent; sulphuric acid 20 per cent; caustic soda 20 per cent. It must, however, be pointed out that in the important basic industries like iron and steel, petroleum refining, and aluminium production, the investments so far made have been negligible when compared with the investments to be made in future years. As regards the actual production in different sectors, the output of yarn and cloth by mills has shown a substantial increase particularly in the last six months and at the current rate of monthly production, the production of cloth by mills might nearly touch the target recommended in the Plan, viz., 4700 million yards. On the other hand, there has been no progress in the handloom sector, which emphasises the need for concentrating attention in coming years on measures which would enable this important sector of the textile industry to achieve its production target. Increases in production have also been recorded by the sugar, power alcohol, cement, paper, rayon, ply-wood and some of the engineering industries. On the other hand, in the manufacture of sulphuric acid, electric cables and wires and A.C.S.R. conductors, there has been no appreciable progress owing to difficulties in procuring raw materials and their high prices. It is expected that, broadly speaking, the upward trend in production will be maintained in 1952-53 since a large number of industrial projects included in the Plan are expected to be completed and to go into production during the year. Special efforts are necessary for assisting industries manufacturing sheet glass, diesel engines, etc., which have recorded a decline in production in the six months ending September 1952, on account of the accumulation of stocks in the country.

## CONTROLS AND INCENTIVES FOR DEVELOPMENT

26. The fulfilment of the targets referred to above will depend, in the main, on the ability of the private sector to implement the programme. A major factor in this connection is the availability of finance. The total savings are so limited that they must be canalised into lines of investment which have been accorded high priority. It is necessary, therefore, to control capital issues and also to regulate the uses to which accumulated funds with industry are put. Control over capital issues has been in operation for several years and it will now be possible, in the light of the priorities laid down in the Plan, to operate this control with clearer objectives. The licensing system introduced by the Industries (Development and Regulation) Act will regulate to a great extent the use of accumulated funds. These controls should be sufficient to prevent undesirable use of reserves. But they will not by themselves ensure the flow of capital into lines of investment of the highest priority. To secure this a system of specific incentives may become necessary, such as the supply of power at concessional rates or rebate of import duty on capital goods and raw materials or an assurance of protection.

## FINANCIAL REQUIREMENTS AND SOURCES

27. The total requirements of fixed capital for the expansion programme in the public and private sectors comes to Rs. 477 crore, viz. Rs. 94 crore for the public sector, Rs. 233 crore for the private sector and Rs. 150 crore for making good the arrears of depreciation in the private sector. There will also be need for additional working capital which has been roughly estimated at Rs. 150 crore. The following statement gives some idea of the orders of magnitude involved and the sources of finance:—

Estimated requirements and sources of  
finance of industries, 1951-56

	<i>Rs. crores</i>		<i>Rs. crores</i>
(i) Investment in the public sector	.. 94	(i) Resources of the public sector invested directly	.. 74
(ii) Investment in the private sector on expansion, modernisation and replacement	.. 383	(ii) Foreign investment	100
(iii) Investment in working capital	.. 150	(iii) Resources of domestic private industry	.. 533
(iv) Current depreciation expenditure not covered by normal income-tax allowances	80	(a) Savings of corporate enterprise in the industrial sector	.. 200*

\*Excludes provision for current depreciation covered by normal income-tax allowances.

	(b). New issues ..	90
	(c) Assistance from the public sector ..	5
	(d) Industrial Finance Corporations ..	20
	(e) Refunds of excess profits tax deposits ..	60
	(f) Banks and other sources of short-term finance ..	158
Total :	<u>707</u>	<u>533</u>

The above estimates, it must be emphasised, are in the nature of approximations designed to illustrate in broad outline the pattern of finance which is visualised in the industrial sector.

#### FOREIGN CAPITAL

28. A free flow of foreign capital would be welcome because it will ensure the supply of capital goods and of technical know-how ; but, in order to attract it, the prospects of a fairly good return and the certainty of fair and equitable treatment are essential, more especially as there is at present a heavy demand for resources for domestic investment in the surplus countries and the rate of return on capital is higher in some of the industrially advanced countries than that obtainable in India. The Government's policy gives the following assurances to foreign capital :—

- (a) there will be no discrimination between foreign and Indian undertakings in the application of general industrial policy ;
- (b) reasonable facilities will be given for the remittance of profits and repatriation of capital, consistent with the foreign exchange position of the country ; and
- (c) in the event of nationalisation fair and equitable compensation would be paid.

29. It is desirable that foreign capital should be channelled into fields of high priority, more particularly where new lines of production are to be developed or where special types of experience or technical skill are required. The system of joint enterprises in collaboration with Indian industrialists appears to be suitable for securing the employment of equity capital, but agreements for such joint enterprises should be subject to the approval of the Government. The flow of equity capital from abroad has great advantages, but it will also be necessary to obtain capital at fixed interest through official or quasi-official institutions such as the International Bank for Reconstruction and Development.

### ADDITIONAL DEMAND FOR RAW MATERIALS, FUEL AND POWER

30. The programme of industrial development will create additional demands for agricultural raw materials, minerals, fuels and electric power. Thus the consumption of cotton is expected to increase from 3.5 million bales to 4.9 million bales and of jute from 4.45 million bales to seven million bales. The increase in the production of paper and news-print will increase the consumption of cellulosic raw materials from forests by about 80 per cent. The consumption of coal for industrial purposes is likely to increase from about 10 million tons to about 14 million tons and of electricity from about 4000 million kwh. to 6500 million kwh. The successful implementation of the industrial programme will require a more liberal policy by the State Governments in regard to the lease of certain sources of supply of raw materials, such as forests for bamboo and timber, sabai grass, etc. It is necessary to have a proper procedure for negotiated rates instead of the present auction system. Similarly, for industries consuming large quantities of power, reasonable and firm rates and long-term contracts should be entered into.

### RESEARCH ON NEW PROCESSES AND BY-PRODUCTS.

31. While attention has to be concentrated at present on achieving industrial expansion by using well-established manufacturing processes, even though they may involve dependence on imported raw materials, increasing utilisation of domestic raw materials and of by-products and waste-products for industrial development should be a consistent aim, and industrial and scientific research should be directed to this end. Investigations have been suggested with a view to exploiting the possibility of producing caustic soda and sulphuric acid from sodium sulphate, sulphur from magnesium sulphate and paper pulp and news-print from bagasse. In the studies of individual industries there will be found proposals for greater utilisation of certain by-products e.g., utilisation of spent lyes from soap factories in the manufacture of glycerine and increased production of power alcohol from molasses.

32. It is also necessary to aim at continuous improvements in standards of productivity. The customary measure of productivity is the amount of total production divided by the number of workers employed, and judged by this measure industrial productivity in India has gone down substantially since 1939—by as much as 20 to 30 per cent in certain lines. The strain on machinery and equipment during the war, the setting up of a number of inefficient units under the pressure of war-time demands and a measure of deterioration in the standards of management and of discipline amongst the workers have all contributed to this result. The Development Councils to be established under the Industries (Development and Regulation) Act are expected to examine this problem and to recommend measures for increasing productivity in the industries within their purview. Simultaneously efforts should be made to promote standardisation of raw materials, producer goods and finished goods so as to secure for manufacturers



as well as for consumers a guarantee of quality in terms of nationally accepted standards. A beginning in this direction has been made by the Indian Standards Institution.

#### LOCATION OF INDUSTRY

33. Industrial development in India has so far been concentrated in a few select areas. If it is to proceed in a balanced manner, increasing attention will have to be paid to establishing industries in those States and regions which have so far remained backward. Under the Industries (Development and Regulation) Act, the Government has powers to regulate location ; but large changes in the pattern of industrial location cannot be brought about within a short period. Private industry is reluctant to settle in a new area in preference to an area already partly developed and offering banking and transport facilities and other ancillary services. Moreover, a considerable proportion of the industrial development envisaged in this five year period is by way of expansion of existing industrial units. The electric power to be derived from the multi-purpose projects will, however, open up great possibilities of industrial development in the Punjab, Orissa and Bihar.

STATEMENT I

INDUSTRIAL PROJECTS IN THE PUBLIC SECTOR

Projects	Investment upto 1st April 1951 <i>Rs. lakhs</i>	Investment during 1951-56			Year of completion of the Project	New or additional capacity (per annum) by 1955-56.
		1951-52 <i>Rs. lakhs</i>	1952-53 <i>Rs. lakhs</i>	1951-56 (Total for five years) <i>Rs. lakhs</i>		
1	2	3	4	5	6	7
<b>I. CENTRAL GOVERNMENT</b>						
1. Iron & Steel Project	—	—	50.0	30,00.0	1957-58	350,000 tons of pig iron by 1955-56.
2. Ship-building ..	150	231.6	282.0	14,08.0	1956-57	50,000 DWT
3. Machine Tool Factory	14.2	98.0	150.0	9,63.8	1953-54	1,600 Units
4. Sindri Fertiliser Factory	18,41.2	435.0	3,00.0	9,03.0	Oct., 1951	350,000 tons of ammonium sulphate.
5. Chittaranjan Locomotive Factory	10,20.0	2,82.0	1,91.0	4,73.0	Manufacture has started	100 locomotives
6. Railway Coach Factory	—	6.5	120.0	4,00.0	1955	50 units
7. Penicillin Factory ..	4.4	17.7	60.0	2,06.6*	1954	4.8 million mega units

8. National Instruments Factory ..	4.0	14.5	25.0	1,82.0	Production has started	Additional Rs. 64.4 lakh worth of instruments.
9. Indian Telephone Industries ..	1,20.0	65.0	33.0	1,30.0	Assembly has started	Rs. 2,00 lakh worth of telephones and other articles
10. Hindustan Cables Ltd.	0.3	23.1	70.0	1,29.7	1953-54	Rs. 100 lakh worth of cables
11. Mandi Salt Works ..	—	—	10.0	1,00.0	1954	61,000 tons of salt
12. Rare Earth Factory ..	26.0†	N.A	N.A	54.0	June 1952	800 tons of rare earth compounds and 202 tons of thorium compounds in terms of thorium nitrate
13. D.D.T. Factory ..	—	—	5.0	39.1‡	1954	700 tons
14. Existing Salt Works ..	3.7	4.3	8.0	50.0	1955-56	About 368,000 tons of salt
15. Housing Factory ..	93.7	9.8	2.0	11.8	1952-53	—
16. Other Projects§ ..	N.A	N.A	N.A	2,02.1	1955-56	—
Total ..	3,277.5	1,187.5	1,306.0	8,253.1		

\* Including Rs. 57 lakh from WHO and UNICEF

N. A. Not available

† Investment up to the end of 1951

‡ Including \$350,000 (U.S.) from WHO and UNICEF

§ Including, *inter alia*, Nasik Printing Press, Silver Refinery and New Mint (Alipore).

**STATEMENT I. (Continued)**  
**INDUSTRIAL PROJECTS IN THE PUBLIC SECTOR**

Projects	Investment upto April 1, 1951 (Rs. lakhs)	Investment during 1951-56			Year of completion of the project	New or additional capacity (per annum) by 1955-56
		1951-52 (Rs. lakhs)	1952-53 (Rs. lakhs)	1955-56 Total for five years (Rs. lakhs)		
1	2	3	4	5	6	7
<b>II. State Governments</b>						
1. Mysore Iron & Steel Works.	2,16.0	40.0	125.0	283.0	1954-55	Additional 60,000 tons of finished steel. 200,000 tons.
2. U.P. Govt. Cement Factory.	1,52.8	65.0	124.6	230.5	1953-54	
3. NEPA Mills	2,24.9	91.4	82.0	200.0	1954	30,000 tons of news-print (300 working days). 16.5 million yds. of art silk (330 working days)
4. Sirsilk Ltd.*	3,81.0	65.6†	90.0†	200.0	1953-54	
5. Sirpur Paper Mills	2,03.3			9.8	7.3	60.0
6. U.P. Precision Instruments Factory.	14.1	11.7	40.0			50.2
7. Bihar Govt. Superphosphate Factory.	1.3			N.A.	N.A.	41.1
8. Other Projects	N.A.	283.5	468.9			65.0‡
Total:	1193.1			1471.0	1774.9	1129.8
Grand Total..	4470.6					9382.9

\* Provision in the Hyderabad State Plan for this project amounts to Rs. 85.70 lakh.

† Including Rs. 40 lakh for the DDT Factory in the Bombay State Plan.

‡ Includes expenditure on Singaroni Collieries Ltd.

N.A. not available.

STATEMENT II

EXPANSION PROGRAMME IN CERTAIN MAJOR LINES IN THE PRIVATE SECTOR

	Unit	1950-51		1955-56	
		Rated Capacity	Production	Rated Capacity	Production.
1. Agricultural Machinery					80,000 to 85,000
(a) Pumps, power-driven ..	Number	33,460	34,310	69,400	85,000
(b) Diesel engines .. ..	Number	6,320	5,540	39,725	50,000
2. Aluminium .. ..	Tons	4,000	3,677	20,000	12,000
3. Automobiles (manufacturing only) ..	Number	30,000	4,077	30,000	30,000
4. Bicycles .. ..	Thousands	120	99	530	530
5. Cement .. ..	Thousand tons	3,194	2,692	5,016	4,550
6. Electric transformers .. ..	KVA '000	370	179	485	450
7. Fertiliser					
(i) Ammonium sulphate .. ..	Tons	78,670	46,528	131,270	120,000
(ii) Superphosphate .. ..	"	123,460	55,089	192,855	164,000

8.	Glass Industry: sheet glass	..	..	Tons	11,700	5,850	52,200	26,000
9.	Heavy Chemicals	..	..					
	(i) Caustic soda	..	..	Thousand tons	19	11	37	33
	(ii) Soda ash	..	..	"	54	45	86	78
	(iii) Sulphuric acid	..	..	"	150	99	213	192
10.	Iron and Steel							
	(i) Pig iron	..	..	Thousand tons	1,850	1,572 (1)	2,700 (2)	1,950
	(ii) Steel (main producers)	..	..	"	975	976 (1)	1,550 (2)	1,280
11.	Paper and board	..	..	Thousand tons	137	114	198	188
12.	Petroleum refining							
	(i) Liquid petroleum products	..	..	Million gallons	N.A.	N.A.	N.A.	403
	(ii) Bitumen	..	..	Tons	N.A.	N.A.	N.A.	37,500
13.	Power alcohol	..	..	Million gallons	13	5	21	18
14.	Locomotives	..	..	Number	—	—	50	50
15.	Rayon							
	(i) Rayon filament	..	..	Million lb.	4	1	18	18
	(ii) Staple fibre	..	..	Thousand bales	—	—	28	28

N. A. Not available

## STATEMENT III

## PROGRESS IN THE IMPLEMENTATION OF DEVELOPMENT PLANS OF CERTAIN MAJOR INDUSTRIES

Industry	Unit	1951-56		Progress during 1951-52		Actual production during April-September	
		Additional Capacity	Additional Production	Additional Capacity	Additional production	1951	1952
						7	8
1	2	3	4	5	6	7	8
1. Agricultural Machinery							
(i) Pumps (power-driven, centrifugal)	Number	35,940	45,687 to 50,687	9,340	11,587	19,200	12,900
(ii) Diesel engines ..	Number	33,405	44,462	3,600	1,725	3,316	1,671
2. Aluminium .. ..	Tons	16,000	8,323	—	328	1,881	2,140
3. Battery, dry cell ..	Millions	25	183	—	8	76.2	57.1
4. Battery, storage ..	Thousands	93	200	93	10	114.3	77.7
5. Bicycle .. ..	Thousands	410	429	—	19	42.7	96.7
6. Cement .. ..	Thousand tons	2,026	2,108	596	596	1,580.3	1,727.1
7. Cotton textiles							
(i) Yarn : spindlage ..	Thousands	350	—	159			
or capacity for yarn.	Million lb.	53	461	24	156	658	727
(ii) Mill Cloth : loomage ..	Thousands	2	—	1	—		
or capacity for cloth ..	Millions yds.	35	982	24	408	2,086	2,364

	(iii) Handloom Cloth ..	Million yds.	N.A.	890	N.A.	114	N.A.	N.A.
8.	Electric transformers ..	KVA'000	115	241	—	23	99.8	97.9
9.	Fertiliser ..							
	(i) Ammonium sulphate	Tons	402,600	403,696	350,000	29,029	21,300	98,817
	(ii) Superphosphate ..	Tons	85,895	124,911	50,395	8,690	27,700	24,184
10.	Glass and glassware :							
	(i) Sheet glass ..	Tons	40,500	20,100	—	(-) 600	1,645	381
	(ii) Blown ware and pressed ware ..	Tons	36,250	51,400	6,500	23,600	41,707	40,210
				to 56,400				
11.	Heavy chemicals							
	(i) Sulphuric acid	Thousand tons	70	101	39	4	51.0	47.7
	(ii) Caustic soda ..	Tons	18,400	21,625	3,850	4,520	7,100	8,314
12.	Iron and Steel ..							
	(i) Pig iron ..	Thousand tons	1,757	1,261	—	166	904	874
	(ii) Finished steel ..	Thousand tons	635	394	—	55	518	526
13.	Jute manufactures ..	Thousand tons	—	308	—	88	438	466
14.	Match ..	Thousand gross boxes	3,000	6,200	—	2,800	14,655	15,300
15.	Paper and paper board ..	Thousand tons	74	86	5	21	66.1	68.2
16.	Plywood : tea chests ..	Thousand sq. ft.	51,200	54,100	21,500	23,200	28,890	37,658
17.	Power Alcohol ..	Thousand bulk gallons	8,250	15,284	—	1,694	2,620	3,710
18.	Radio receivers ..	Thousands	303	301	76	26	35.6	38.2
19.	Rayon : Rayon filament	Million lbs.	14	17	6	3	2.4	3.9
20.	Sewing-machines ..	Number	54,000	58,535	—	15	23,671	24,022
21.	Soap ..	Thousand tons	15	94	7	9	38.9	40.5
22.	Sugar ..	Thousand tons	10	384	—	369	87.2	298.0



## CHAPTER XXX

### FOREIGN TRADE AND COMMERCIAL POLICY

In this chapter it is intended to bring out the probable effects of the Plan on the structure of foreign trade and the considerations that will have to be borne in mind in framing import and export programmes.

2. Before the war India was on balance a debtor country and had to have a fairly large surplus on its trade account in order to meet the servicing charges on the sterling debt. In the wider pattern of the international balance of payments, India was among the group of countries which were net dollar earners and made over these earnings to the metropolitan countries of Europe to meet the deficit in their balance of payments with those countries.

3. By the end of the war almost the entire external debt of the Government had been repaid and balances of the order of Rs. 1600 crore had been built up in sterling. This obviated the necessity for having a surplus on trade account and held out the prospect of financing fairly large deficits in the current balance of payments from these accumulated external reserves. The post-war difficulties of the United Kingdom, however, restricted the rate at which the sterling balances could be drawn upon, while there was a tendency for this country's deficit in its trade account to become very large. On the conclusion of the war, the economy was in a starved condition and imports were required on a large scale simply to make good the results of war-time austerity and depreciation of capital equipment, not to mention the needs of development. Furthermore, while the financing of the war had increased money incomes, scarcities had kept down consumption. With the return of peace, therefore, there was a keen demand for consumer goods from abroad.

4. Even apart from the pressure of pent-up demand, the import requirements were larger and the exportable surpluses smaller at the end of the war. This was due partly to the increase in population in the interval and partly to the partition of the country which increased India's deficit in food and raw materials. The effects were most marked in the case of jute, cotton and hides. So, far from being able to export these raw materials, this country had to import them on a considerable scale from Pakistan to meet the needs of some of its largest established industries. But the commodities that could be exported to Pakistan in exchange were mainly processed materials like cotton textiles, sugar and matches which, until partition, were receiving some protection against foreign competition in the areas which now constitute Pakistan. Partition, therefore, increased India's reliance on imported raw materials, without automatically providing for counter-balancing exports.

5. The changes brought about in the pattern of India's foreign trade by the war and partition are strikingly revealed by the following indices of export and import quantities of three main groups of commodities :—

	<i>Exports</i>			<i>Imports</i>		
	Food, drink and tobacco	Raw materials	Manu- factured articles	Food drink and tobacco	Raw materials	Manu- factured articles.
Pre-war (1938-39)	100·0	100·0	100·0	100·0	100·0	100·0
Post-war (1947-48)	83·7	41·7	92·5	138·6	116·9	72·0
Post partition (1948-49)	95·7	30·7	106·4	145·9	142·9	105·0

It will be seen that the significant changes are in respect of raw materials and food, imports of both of which have greatly increased while exports of the former have markedly declined. As a result of this decline India is much more dependent for its exports than formerly on three commodities, viz., jute manufactures, cotton manufactures and tea, which now account for 56 per cent of the total value of exports as against 35 per cent before the war. This increased dependence on a few commodities is a drawback.

6. There has also been a shift in the direction of trade. Before the war only about 10 per cent of India's foreign trade was with the dollar area and the balance was favourable. Since the war, partly owing to a sharp reduction in trade with Germany and Japan, trade with the dollar area has risen to about 25 per cent of the total, and owing to the decline in the export of raw materials and increased imports of food-grains and machinery, the balance has tended to be unfavourable.

#### IMPACT OF THE PLAN ON FOREIGN TRADE

7. Commercial policy during the period of the Plan will have to take account of the recent changes, viz., the contraction in the volume of exports and their increasing lack of diversification, the increased dependence on imports of food and raw materials, the imbalance in the trade with the dollar area and the heavy demand for imports of machinery for replacements and development. To some extent the Plan itself is designed to counteract these changes. Thus the higher agricultural production for which it provides will reduce the dependence on imports of food-grains and of cotton and jute; and the greater availability of raw cotton and jute will increase the exportable surplus of cotton and jute manufactures. It is also expected that an export trade will develop in new lines of manufacture in this country, e.g., sewing-machines, batteries, bicycles, and phar-

maceuticals. Such articles are already being exported in small quantities to countries of South-East Asia and this trend should become more marked with the expansion of these industries as envisaged in the Plan. The recovery of Germany and Japan and the development of greater trade relations with countries like Czechoslovakia and Sweden which can export capital goods will help to diversify trade and correct the existing imbalance with the hard currency countries.

8. On the other hand, as already pointed out in Chapter III, a large programme of development necessarily leads to an increased demand for imports and a shortage of foreign exchange. The programme which we envisage entails heavy imports of capital goods, not only to wipe off the outstanding arrears of replacement, but also to meet the still greater requirements of new projects; and the increased money incomes generated by the Plan will make themselves felt in increased demand for consumer goods from abroad and a reduction in the surpluses of consumer goods available for export.

9. It goes without saying that during the period of the Plan there will have to be a close regulation of imports and exports. Without controls in this vital sector the country will not be able to utilise to the best advantage the resources available for development. It follows that the actual volume of imports during the next few years will depend, to a great extent, on the manner in which the control over them is exercised and this will, in turn, depend on the availability of foreign exchange. If a development programme in the public sector of the order of Rs. 2,000 crore is to be implemented without supplementary external resources, imports will have to be rigidly restricted to commodities of the highest priority for the implementation of the Plan. If, on the other hand, additional foreign exchange resources become available, it will be possible to have larger imports and thus to meet, to some extent, the consumers' demand.

10. It is clear that the accent of policy throughout must be on maintaining a high level of exports and efforts will have to be made to increase the volume of exports, not only to the dollar area, but also to other countries which are in a position to supply the imports required for the implementation of the Plan. As far as practicable, there must be a measure of continuity in policy so that trade relations with other countries in respect of exports and imports are not frequently disturbed.

## CHAPTER XXXI

### TRANSPORT AND COMMUNICATIONS

#### RAILWAYS

During the past 20 years, the assets of the Indian railways have been put to intensive and extensive use and there are now enormous arrears of maintenance and replacement to be overtaken. This problem originated with the economic depression in the early thirties when, owing to the heavy fall in the railway earnings, expenditure on maintenance was slowed down or deferred. The arrears had not been made good when the war intervened and added to them, and the problem was then further accentuated in 1947-48 by partition. The magnitude of the problem may be judged from the abnormal proportion of overaged stock. For example, the arrears of renewals accumulated by March 31, 1951, came to 1,050 locomotives, 5,514 coaching vehicles and 21,418 wagons against the average normal renewals of 190 locomotives, 650 coaching vehicles and 5,000 wagons per annum. By March 31, 1956, the stock which will require replacement has been estimated to be 2,092 locomotives, 8,535 coaches and 47,533 wagons. There is also the problem of rehabilitating the track which has deteriorated considerably. At present, speeds are restricted over about 3000 miles of track owing to its weak condition. Apart from the deterioration of assets, it is necessary, too, to provide for the increased volume of passenger and goods traffic consequent on industrial growth and development programmes, and to improve the amenities at railway stations and in the trains, particularly for passengers travelling by the third class.

2. In the last four years locomotives and rolling stock have fallen far short of the country's requirements. This was largely owing to the limited manufacturing capacity at home as well as the paucity of supply from abroad. The need for the expansion of domestic production is clearly indicated. The eventual target of production at the Chittaranjan Locomotive Works is 120 locomotives and 50 spare boilers a year. During the period of the Plan, 268 locomotives are expected to be manufactured by this workshop and 170 locomotives by the Tata Locomotive Engineering Company. Although provision has been made in the Plan for the manufacture of coaching stock and wagons in India, it is estimated that the Railways will nevertheless have to import 641 locomotives, 1,294 coaching vehicles and 19,143 goods wagons during the period of the Plan.

3. To meet the cost involved in the execution of the Plan for the railways, an expenditure of Rs. 80 crore a year, will be required for five years, i.e., Rs. 400 crore in all. The bulk of this amount will be spent on rehabilitation, while the opening of new lines will take about Rs. 20 crore. Of this Rs. 400 crore, the Centre will provide

Rs. 80 crore and the rest will have to be found by the railways from their own resources. A further provision of Rs. 50 crore has been made in the Plan for the expansion of basic industries and ancillary transport and the railways will obtain some further allocation out of this amount.

The expenditure of the railways during the period of the Plan is to be phased, according to present calculations, as shown in the table at the end of this chapter.

### SHIPPING

4. The total Indian-owned tonnage was 125,000 gross registered tons before the war and 100,000 gross registered tons in 1946. It rose to 362,150 gross registered tons by the end of 1950. Early in 1951, there were 73 ships with a gross registered tonnage of 217,202 on the coastal service and 24 Indian-owned ships with a tonnage of 173,505 in the overseas trade.

5. The Central Government have decided to reserve the coastal trade of the country for Indian vessels. The needs of the coastal trade thus make the expansion of Indian tonnage a matter of urgent necessity. Accordingly, a programme of development has been formulated which aims at raising by 1955-56 the total tonnage to about 600,000; of which 300,000 gross registered tons will be for coastal shipping. With a provision of Rs. 4 crore for loans to shipping companies for this purpose, and an additional Rs. 2 crore to be raised by the shipping companies themselves, it is expected that it will be possible to acquire a substantial portion of the necessary tonnage.

6. The minimum requirements of additional shipping for the overseas trade has been placed at 100,000 d.w.t. This will be acquired from a loan of Rs. 6.5 crore to be given by the Government, supplemented by Rs. 2.2 crore to be raised by the shipping companies. The latter, however, have asked for a lower rate of interest on the loan and certain fiscal concessions, including the right to seek assistance from the Industrial Finance Corporation. An additional 60,000 d.w.t. will be acquired for overseas trade by the Eastern Shipping Corporation for which the Central Government will contribute Rs. 4.4 crore.

In addition to the total tonnage of 600,000 to be acquired at the end of five years, the acquisition of different types of ships, such as tankers for oil refineries, has also been suggested.

The Plan has also provided Rs. 110 lakh for the training of marine engineers and merchant navy ratings.

### PORTS AND HARBOURS

7. The annual capacity of the major ports of Calcutta, Bombay, Madras, Cochin and Visakhapatnam to handle cargo is at present about 20 million tons, excluding petroleum and goods moved by

country craft and bunker. This is insufficient and the development of ports is urgently necessary for rectifying the consequences of partition and to cope with increased traffic especially in connection with the projected oil refineries. Accordingly, a programme of rehabilitation, modernisation and expansion of the five major ports has been drawn up at an estimated cost of Rs. 29·27 crore. This, of course, excludes the expenditure of Rs. 12·05 crore on the Kandla Port, a substitute for Karachi, and of Rs. 8 crore on the provision of port facilities for the oil refineries. If all these projects are undertaken, the expenditure on development during the period of the Plan will amount to about Rs. 54·22 crore. This includes Rs. 4·90 crore already spent in 1951-52 by the port authorities.

8. The development of Kandla as a major port will increase the traffic handled there from about 122,000 tons in 1951 to about 850,000 tons per annum from 1956 onwards. The major items in the programme for the Calcutta port are the restoration of the Garden Reach jetty, the purchase of wagons, locomotives and a heavy lift crane for handling heavy machinery and equipment imported for the river valley projects, and the construction of two manual coal berths and one mechanical ore berth. In the programme for the Bombay port, the most important item relates to the modernisation of the Prince's and Victoria Docks, the reconstruction of their transit sheds and the installation of electric cranes at the Alexandra Docks. A provision has also been made in the plans for Bombay, Madras and Calcutta to spend nearly Rs. 4·25 crore on the housing of labour. The programme for Madras envisages, in addition to other less important projects, a wet-dock scheme at a cost of Rs. 2·97 crore during the period of the Plan and two all-weather berths for petroleum at a cost of Rs. 0·72 crore.

9. Apart from the Kandla port development project, to be financed wholly by the Central Government, the expenditure on the other port projects will be Rs. 42·17 crore, out of which the port authorities will be in a position to raise a maximum of Rs. 15·5 crore only. If all the projects are to be taken up, the port authorities will thus need assistance to the extent of Rs. 26·67 crore. The Plan provides for an advance of Rs. 12 crore by the Central Government to the port authorities during the five year period, while they will also accept liability for the creation of port facilities for the oil refineries at a total cost of Rs. 8 crore.

#### CIVIL AVIATION

10. The capital expenditure on civil aviation up till the end of the year 1950-51 amounted to about Rs. 10 crore. It has, however, been found that there are too many companies engaged in air transport and their financial position as a whole is far from satisfactory. The Air Transport Enquiry Committee set up by the Government, therefore, recommended the merging of these companies into a single unit in the belief that under a single Corporation the number of aircraft needed would be reduced and expenditure curtailed. The Committee

also recommended that the Government should have a controlling interest in the proposed Corporation. Steps are being taken to give effect to these recommendations.

11. In the Five Year Plan the amount provided for capital expenditure on civil aviation projects for the first two years is Rs. 1·85 crore per annum, and for the next three years the total allotment made is Rs. 9·67 crore. In regard to the air transport industry the Plan provides for a sum of Rs. 9·5 crore for the payment of compensation to the existing air companies for acquisition of their assets by the proposed new Corporation. If, however, these companies agree to take up shares in the new Corporation, the amount required will be about Rs. 6·5 crore, including the cost of purchasing 13 new aircraft.

### ROADS

12. The existing road system is admittedly far short of the country's requirements. The Nagpur Report on Post-war Road Development of 1943 (the Nagpur Plan) visualised the growth of the total mileage of hard surface roads from about 66,400 miles to 122,000 miles and of low type roads from about 112,000 to 207,500 miles in ten years. The objective was that no village in a well-developed agricultural area should be more than five miles from a main road. The expenditure originally contemplated was Rs. 372 crore, which is roughly equivalent to Rs. 744 crore at the present price levels. Owing to various factors, however, the programme has had to be spread over a longer period than ten years.

### NATIONAL HIGHWAYS

13. According to the Nagpur Plan, roads have been classified into National Highways, State Highways and district and village roads. Subject to certain conditions, the Central Government assumed financial responsibility for the development and maintenance of a provisional system of National Highways of a total length of 13,400 miles. In the last five years, 160 miles of new roads, 17 large bridges and innumerable smaller bridges have been constructed and 1,315 miles of roads improved, while there are at present about 320 miles of new roads and 18 large bridges under construction. The Five Year Plan provides for the completion of the work in hand and for the construction of 450 miles of new roads and 43 large bridges and a number of smaller bridges. In addition, about 2,000 miles of roads will need improvement, two-thirds of which will be completed by 1955-56. A sum of Rs. 27 crore has been set apart in the Central Government's plan for National Highways over a period of five years. A separate provision of rather more than Rs. 4 crore has also been made for the development of certain selected roads (other than National Highways) for which financial liability has been accepted by the Centre. A sum of Rs. 21·5 lakh has also been provided for the Central Road Research Institute where investigations of interest for road development in different regions of the country are to be carried out.

### STATE ROADS

14. State roads are at present financed by the State Governments, supplemented by grants and allocations from the Central Road Fund. According to the schemes drawn up by the State Governments the length of metalled roads will increase from 10,007 miles to 12,453 miles by 1955-56 in Part A States and from 7,588 miles to 8,129 miles in Part B States. The road development plans of Part C States are being framed with a view to constructing as many new roads as possible for opening up areas which are at present inaccessible. The total provision made by the States for road development is Rs. 73·5 crore.

### VILLAGE ROADS

13. The Commission suggests that the State Governments should pay special attention to the maintenance and construction of village roads. In certain States village roads are already being developed with the active co-operation of the villagers themselves. The Roads Organisation has formulated a model scheme for village roads on a co-operative basis and has made an initial offer of Rs. 15 lakh from the Central Road Fund Reserve as a contribution to specific projects.

### ROAD TRANSPORT

16. At present there are in the country about 47,475 operators of commercial motor transport, of whom more than 46,000 are small operators, each owning not more than six vehicles. State operated services exist on varying scales in many States.

17. The investment on public road transport services stands at present at Rs. 17·13 crore. This investment is made up of contributions from the State Governments, the railways and private operators. In the Five Year Plan, the contemplated investment of the State Governments on road transport between 1951 and 1956 is Rs. 8·97 crore. This will be spent *inter alia* on (i) the purchase of about 2000 transport vehicles and (ii) the establishment of up-to-date workshops for the maintenance and repair of transport fleets. The Commission is of the opinion that wherever road transport services are run by a State, a Corporation should be formed for the purpose. This would provide the necessary autonomy and scope for efficient administration. Indeed, the ground has been cleared for the formation of State Transport Corporations by the Road Transport Corporation Act, 1950 and in some States they have already been formed.

### POSTS, TELEGRAPHS AND TELEPHONES

18. The Plan provides Rs. 50 crore for the development of postal, telegraphic, telephonic and wireless communications. The main emphasis in the programme is on the provision of a post office for every village with a population of 2000 or over and on increased telephone facilities in the larger cities.



## The railway plan for 1951-56

(in crores of rupees)

Rehabilitation and additions	1951-52 approximate actuals	1952-53 (Budget)	1953-56	Five years' total
Track .. .. .	8.51	14.36	42.00	64.87
Bridges .. .. .	0.85	1.15	3.60	5.60
Other structural and engineering works .. .. .	7.89	8.52	27.00	43.41
Collieries .. .. .	0.06	0.39	1.00	1.45
Ports .. .. .	0.09	0.18	0.77	1.04
Rolling stock and machinery	36.91	42.55	128.50	207.96
Labour welfare—staff quarters and welfare works .. .. .	4.55	4.54	15.00	24.09
Restorations .. .. .	0.52	1.14	4.00	5.66
New lines	6.55	5.97	16.00	28.52
Special projects				
Major bridges				
Electrification of track				
Conversion of narrow gauge to metre or broad gauge	2.47	3.00	9.53	15.00
Passenger amenities .. .. .				
Miscellaneous items including probable savings .. .. .	2.47	—2.70	2.63	2.40
Total .. .. .	70.87	79.10	250.03	400.00

## CHAPTER XXXII

### HEALTH

Compared with other countries, the expectation of life at birth in India is low. A recent estimate based on data relating to 1941 places the expectation of life for men and women at 32·09 and 31·37 respectively. The level of health as indicated by the death rate and infantile mortality rate is also low. Nearly 40 per cent of the total deaths are among children under 10 years of age and half the mortality in this age group takes place within the first year of life. Maternal mortality is estimated to be 20 per thousand live-births which is a very high figure. About 200,000 women die in child-birth annually and the morbidity resulting from causes associated with child-bearing would run to about four million.

2. Epidemic diseases also take a heavy annual toll, accounting for about five per cent of the total mortality. It is estimated that 100 million people suffer from malaria and that the annual mortality from this cause is about one million. Similarly, the number of active cases of tuberculosis is estimated at about 2·5 million of which about 500,000 die every year. Much of this mortality could be prevented.

#### CAUSES OF LOW STATE OF HEALTH

3. The principal causes of this low state of health are the lack of hygienic environment conducive to healthful living due to inadequate housing, bad water supply and imperfect removal of human wastes, and to low resistance due to poor nutrition. The lack of medical care and of general and health education adds to the problem. There are, however, serious impediments to rapid improvement. The country's financial resources are limited, there is a dearth of trained personnel and the whole programme of health development is bound up with a broader programme of social improvement.

4. The inadequacy of the medical personnel in relation to the population is clearly brought out in the following table :

#### PROPORTION OF MEDICAL PERSONNEL TO POPULATION

<i>Medical Personnel</i>	<i>India</i>	<i>United Kingdom</i>
1 Doctor .. ..	6,300*	1,000
1 Nurse .. ..	43,000	300
1 Health Visitor .. ..	4,00,000	4,710
1 Midwife .. ..	60,000	618
1 Dentist .. ..	3,00,000	2,700
1 Pharmacist .. ..	40,00,000	to 3 doctors.

\* 72 per cent of doctors are in the urban areas and their distribution is very sparse in the rural areas.

The provision of increased training facilities for all types of personnel is thus a matter of vital importance.

The number of medical institutions is also far too small to cope with the country's needs. The average for the country as a whole in 1949 was one institution for 24,000 of the urban population and one for 50,000 of the rural population.

#### MEDICAL AND PUBLIC HEALTH PLAN

5. In the circumstances, a programme with the following priorities should form the basis of the Five Year Plan :

- (i) provision of water supply and sanitation ;
- (ii) control of malaria ;
- (iii) preventive health care of the rural population through health units and mobile units ;
- (iv) health services for mothers and children ;
- (v) health education and training ;
- (vi) self-sufficiency in drugs and equipment ;
- (vii) family planning and population control.

6. The medical and public health plans of the Central and State Governments will involve an outlay of Rs. 99·55 crore, of which the Centre's share is Rs. 17·87 crore. This is exclusive of the medical and health programmes which are being executed by local authorities in the States and by international agencies like W.H.O. and U.N.I.C.E.F. The bulk of the Central Government's expenditure will be accounted for by (1) the All India Medical Institute, a Central Institution for higher research and post-graduate studies, estimated to cost Rs. 3·59 crore, and (2) the National Malaria Scheme estimated to cost Rs. 10 crore. In the case of the States, of the Rs. 42·41 crore set apart for medical schemes, Rs. 33 crore will be spent on schemes in progress, while of the total expenditure of Rs. 39·23 crore provided for public health schemes, only Rs. 17 crore will be spent on schemes in progress and Rs. 22·23 crore on new schemes. This is largely because several new water supply and drainage schemes are being undertaken in the States under the Plan.

7. The following table shows the expenditure to be incurred by the Central and State Governments (excluding Jammu and Kashmir State) on various categories of medical schemes as compared with that of 1950-51 :—

		<i>Rs. lakhs</i>		
		1950-51	Five year total	Annual average
Administration .. .. .	.. .. .	3·2	62·2	12·5
Education and training .. .. .	.. .. .	235·2	1891·7	378·4
Hospitals and dispensaries .. .. .	.. .. .	331·3	2461·7	492·4
Other schemes .. .. .	.. .. .	43·3	322·1	64·5
		613·0	4737·7	947·8

8. Out of the total expenditure contemplated, more than 50 per cent will be on hospitals and dispensaries and nearly 40 per cent on medical education and training. The schemes for medical education and training include the All India Medical Institute, the completion of new medical colleges in Assam, Bombay, Madhya Pradesh, West Bengal and Travancore-Cochin; the expansion of existing medical schools and colleges, and the provision of training for auxiliary medical personnel like nurses, midwives, compounders, etc. The execution of the schemes is expected to increase the total number of personnel trained annually in the country during the period 1951-52 to 1955-56 as follows:—

			During 1950-51	By 1955-56	Percentage increase
Doctors	..	..	2504	2782	11.1
Compounders	..	..	894	1621	81.3
Nurses	..	..	2212	3000	35.6
Midwives	..	..	1407	1932	37.3
Vaids and hakims	..	..	914	1117	22.2

9. The increase in the number of hospitals and dispensaries and in the number of beds in them is expected to be as follows:—

			During 1950-51	By 1955-56	Percentage increase
Number of hospitals	..	..	2014	2062	2.4
„	dispensaries (urban)	..	1358	1695	24.8
„	dispensaries (rural)	..	5229	5840	11.6
„	beds in hospitals	..	106478	117222	10.1
„	„ „ dispensaries (urban)		2013	2233	11.4
„	„ „ (rural)		5066	5582	10.2

Other schemes under this head relate to the opening of T.B. clinics and sanatoria in almost all the States, the opening of leprosy clinics and hospitals in a majority of the States where the disease is prevalent and the prevention and treatment of venereal diseases.

10. The following table gives the expenditure to be incurred by the Central and State Governments (excluding Jammu and Kashmir State) on various categories of public health schemes as compared with the expenditure incurred in 1950-51 :—

	1950-51	<i>Rs: lakhs</i> Five year total	Annual average
Administration .. ..	15·6	210·8	42·2
Education .. ..	1·6	131·4	26·3
Water supply and drainage ..	270·0	2349·4	469·9
Anti-malaria .. ..	45·4	1702·5	340·5
Other schemes .. ..	35·5	644·3	128·9
	368·0	5038·4	1007·8

It will be seen that water supply and drainage, and anti-malaria schemes account for the bulk of the expenditure.

#### WATER SUPPLY

11. Only six per cent of the total number of towns in India have protected water supplies and these serve only 48·5 per cent of the total urban population. Similarly, at present, only 23 cities out of 48 with a population of over 1,00,000 have a sewerage system. There are 12 other towns which are partially sewered. About three per cent of the total population is thus served by a sewerage system.

The five year programmes of the States provide Rs. 23·49 crore for water supply and drainage works. Out of this total provision, Rs. 12·12 crore is to be spent on urban water supply and drainage and Rs. 11·37 crore on rural water supply. In the Five Year Plan of the Central Government Rs. 30 crore have been set apart for development loans to assist the local authorities. Out of this amount, about Rs. 10 crore may be assumed to be available for water supply. Contributions by the people by way of voluntary labour or money will enable this financial provision to go a long way towards improving water supplies.

#### MALARIA

12. The control of malaria on a national scale is now being sought through a comprehensive project. The programme of operations is based on insecticidal spraying in the rural areas and treatment with anti-malaria drugs. These measures will give protection to nearly 200 million people. The operations will be carried out by 125 field malaria control teams organised and directed by the State Directorates of Health Services. The Plan includes the construction of another D.D.T. plant to supplement the one already planned by

the Government of India with the assistance of W.H.O. and U.N.I.C.E.F. in order to ensure sufficient supply of D.D.T. at a reduced cost. The programme for malaria control now proposed will involve an outlay of Rs. 15 crore over a period of three and a half years. The local expenditure by States for the period will amount roughly to Rs. 5 crore, while the Central Government will provide Rs. 10 crore including aid from T.C.A.

### TUBERCULOSIS

13. Tuberculosis claims so many victims in this country that special mention must be made of the measures which are being taken to control it. A minimum programme, in order of priority, would be as follows:—

- (1) B.C.G. vaccination ;
- (2) clinics and domiciliary services ;
- (3) training and demonstration centres ;
- (4) beds for isolation and treatment ;
- (5) after-care.

The Government of India have entered into an agreement with U.N.I.C.E.F. and W.H.O. to launch a countrywide B.C.G. programme. Thus, if mass vaccination is carried out on the lines indicated, it would be possible in about 15 to 20 years to reduce the mortality from tuberculosis to one-fifth of its present annual rate of about 500,000 deaths. The clinics will have to undertake preventive, diagnostic and curative functions. They must have some beds at their disposal and also an adequate staff of doctors and health visitors to provide domiciliary services. It has been decided to establish three model tuberculosis centres with international aid at Delhi, Trivandrum and Patna. Similar centres should be established in other cities. The Centre and the States have made substantial provisions for their schemes and already achieved considerable progress in them. Compared with 1950-51, the Plan envisages the following approximate increase by 1955-56 :

	1950-51		1955-56	
	Number of institutions	Number of beds	Number of institutions	Number of beds
Sanatoria ..	37	4161	46	5656
Hospitals ..	48	3077	50	4814
Clinics ..	127	2323	180	2652
B.C.G. teams ..	73	—	137	—

The schemes of the States and the Centre together will involve an expenditure of about Rs. 4.31 crore.

## NUTRITION

14. Both under-nutrition and malnutrition are widely prevalent in this country. Food production data and diet surveys show clearly that the total food supply is insufficient in quantity and that the diet of the population as a whole is defective in quality, since the protective foods which are needed to supplement the staple cereal grains are not produced in adequate quantities. Moreover, the bulk of the population cannot afford to pay for a satisfactory diet. In terms of average income, not more than 30 per cent of the population can feed themselves adequately. Malnutrition has its most disastrous effects in the case of children. It is the responsibility of the Public Health Departments to supervise the feeding of mothers and infants through maternity and child welfare services. The development of school feeding schemes on a wide scale is strongly recommended. The manufacture of synthetic vitamins and of food yeast and improvement in the shark liver oil industry should also be considered and the possibility of making carotene preparations of high vitamin A content from cheap and abundant vegetable resources should be investigated.

## MATERNITY AND CHILD HEALTH

15. In the opinion of the Planning Commission maternal and child health services should form an integral part of the general health services. For urban areas an adequate number of centres, each with a minimum staff of one health visitor, two midwives, a peon and a part-time sweeper to serve a population of 10,000 have been recommended. In the rural areas, there should be a unit consisting of two midwives for a population of 10,000 to 12,000, and a number of such primary centres should come under a bigger unit for the *thana* or the *taluka* where the staff should be a woman doctor and two health visitors. The provision made by the various States and the Centre for maternity and child health is Rs. 1.35 crore and Rs. 53.48 lakh respectively.

## HEALTH EDUCATION

16. Another recommendation of the Commission concerns health education for all sections of society and among all age groups of both sexes by means of audio-visual aids, films and the radio as well as through the press, pamphlets, posters, schools, exhibitions, museums, libraries, etc. The Centre has a scheme which includes in its scope the establishment of a health publicity bureau with facilities for the production of educational material, such as a unit for the production of film strips and a printing unit, at an estimated cost of Rs. 15 lakh.

## MEDICAL EDUCATION AND MEDICAL RESEARCH.

17. There are at present 30 medical colleges training candidates for the M.B.B.S. degree. There are also four medical schools for the training of licentiates. It is expected that the school will be upgraded

into colleges. A uniform minimum standard of training and qualification prescribed by the Indian Medical Council should be adopted for the whole country. At present, the medical colleges admit 2,500 students annually and nearly 1600 are qualified as doctors every year. The training facilities should, however, be extended so that at the end of five years the medical colleges will be able to admit 4,000 students annually. Instruction in the medical colleges should also be so planned that the preventive and social aspects of medicine and rural health are emphasised.

18. Practically all the teaching hospitals in the country impart training in nursing and it should be possible to train a larger number of nurses than is done at present even in the existing teaching institutions. The number of probationers admitted to the training schools attached to the teaching hospitals should at least be doubled. The training facilities for midwives, too, can be considerably expanded. Each existing institution with maternity beds should be able to take in a larger number of trainees.

19. There should be a specific allocation of funds for medical research from the Central and State Revenues. This money should be spent in research institutes and medical colleges. Both for purposes of teaching and research, an up-to-date library with an adequate supply of medical books and journals is indispensable. The history of medicine should be taught at every university with a medical faculty, and a chair instituted for this purpose. The Central and State research institutes should be concerned with research in special subjects and investigation of social environmental factors affecting health and disease.

#### INDIGENOUS SYSTEMS OF MEDICINE

20. In the Five Year Plan a provision of Rs. 37.5 lakh has been made for research on indigenous and other systems of medicine and the Government of India have sanctioned the establishment of a Central Institute for Research at Jamnagar. It is also essential to make a systematic survey of Indian medicinal herbs with a view to establishing their identity, nomenclature, the area in which they are available and the localities in which individual herbs can be grown to the best advantage. Early action is also needed for improving the collection, standardisation, storage and distribution of Indian medicinal herbs.

21. Professional training for the practice of the indigenous systems of medicine is a matter requiring a good deal of consideration. There is at present no uniform basis for the curricula adopted in different institutions. A curriculum drawn up for the purpose has to be designed primarily to enable the student to attain full proficiency in the practice of the particular system ; but he cannot afford to ignore the body of medical knowledge which has grown up under the impetus of scientific methods. It is evident that the Ayurvedic portion of the curriculum has to be considerably strengthened and enlarged



under the direction of experts in this field. The minimum qualification for admission should include the equipment needed for acquiring a mastery of Ayurveda in addition to a knowledge of the basic sciences as the essential foundation of medical education. The consensus of opinion seems to be in favour of a course extending over a period of five years. Early steps will have to be taken for upgrading selected institutions. At least one of them should be equipped for high level research as well as education of the requisite standard. The States have provided a sum of Rs. 95·23 lakh in the Plan for education and training in the indigenous systems of medicine, and Rs. 1·06 crore for hospitals and dispensaries.

22. As regards homœopathy, proposals have been made to form a Central Council of Homœopathic Medicine to upgrade some of the colleges and start new ones, to have a common course of training for the first two years and a separate course for homœopathic subjects for the next three years, and to provide facilities for research and to open at Lucknow a central homœopathic drug manufacturing laboratory.

#### DRUGS AND MEDICAL REQUISITES

23. Drugs and medical appliances of suitable quality are required to be produced in adequate quantities at reasonable prices. It should be possible to provide for the essential needs by a combination of private enterprise and State effort.

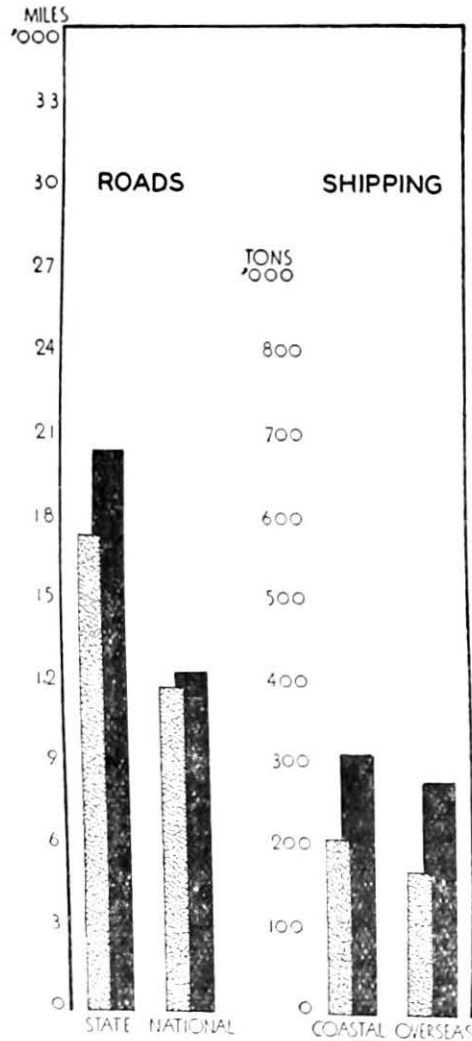
24. It is essential to co-ordinate work in regard to indigenous drugs. Standards have to be laid down as regards quality and active principles and the drugs have to be processed in a form suitable for administration. In order to achieve these objectives the Indian Council of Agricultural Research has established a medicinal plants committee to further the cultivation of important medicinal plants at suitable centres. The Ministry of Health has opened a Pharmacognosy Section at the Central Drugs Research Laboratory for the identification of indigenous drugs, and for the detection of adulteration of drugs in the market. The Council of Scientific and Industrial Research has established a Drug Research Institute at Lucknow, which will investigate many of the commonly used indigenous drugs and work out their active principles and standards of potency and purity. The Government of India have also established a Committee for the preparation of a national pharmacopœia. This pharmacopœia will contain monographs not only on synthetic and other modern drugs but also on all vegetable drugs of indigenous origin. So far nearly a thousand draft monographs have been prepared.

25. India is today self-sufficient in all galenical preparations, most of the sera and vaccines, liver extracts, alkaloids like morphine, codeine, strychnine, etc., santonine, belladonna, digitalis and hyoscyamus preparations. But the country still imports essential drugs and raw materials valued at over Rs. 10 crore annually. Among them the principal items are penicillin, streptomycin and other

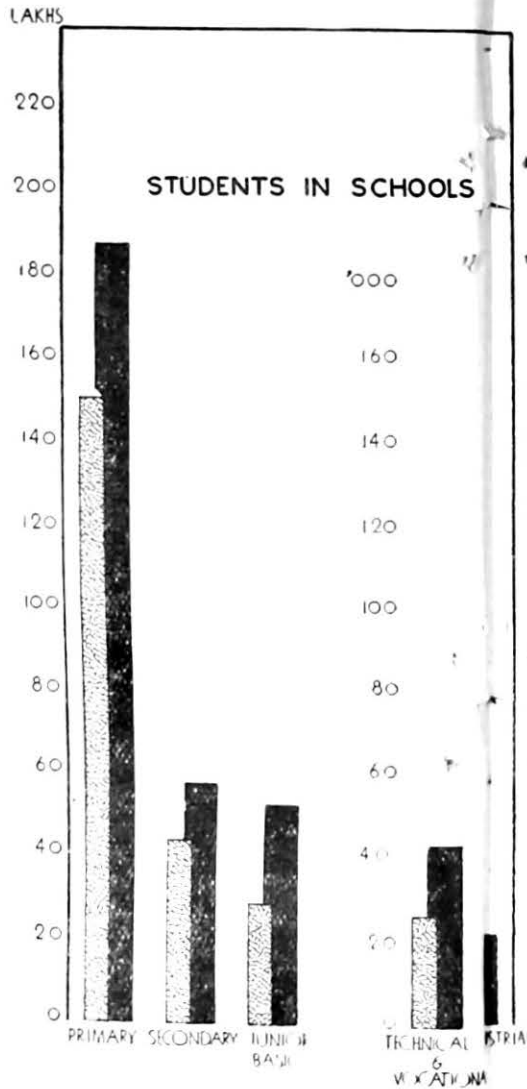
# TARGETS OF THE FIVE YEAR PLAN

1950-51 1955-56

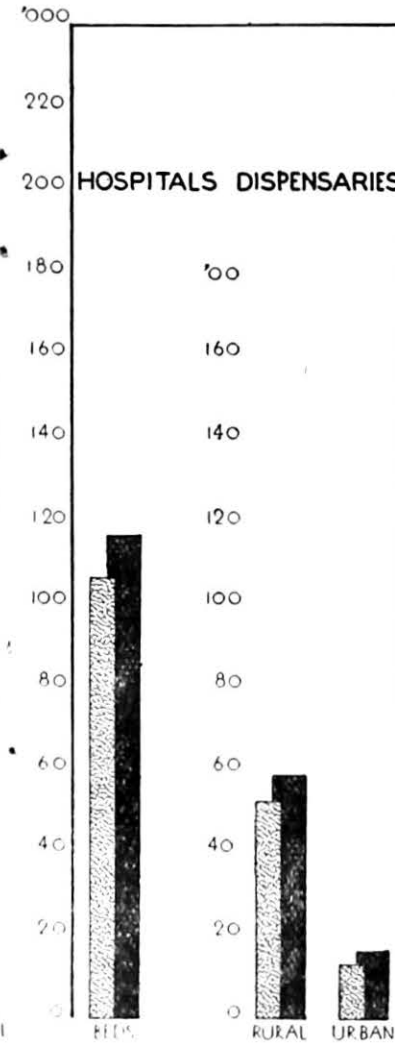
## TRANSPORT



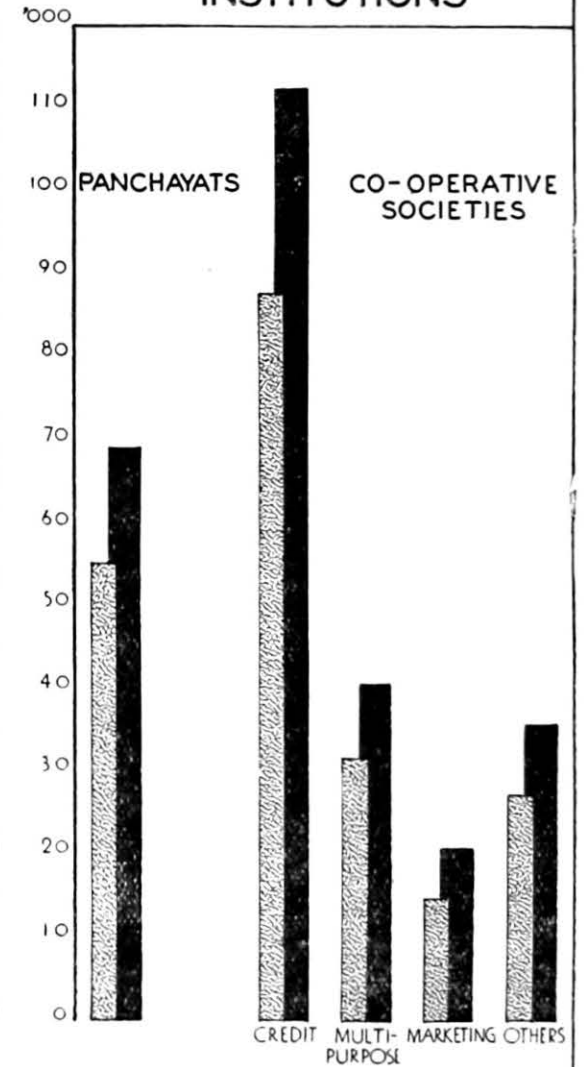
## EDUCATION



## HEALTH



## DEVELOPMENTAL INSTITUTIONS



antibiotics, sulpha drugs, gland products, vitamins, anti-leprosy drugs and insecticides. It is necessary to consider the production in this country of drugs to which a high priority should be assigned. The Government of India have, therefore, entered into an agreement with U.N.I.C.E.F. to set up a factory for the manufacture of penicillin and other antibiotics. The total cost of the project is estimated at Rs. 200 lakh. The production of penicillin at the rate of 4,00,000 mega units per month is expected by the end of 1954. There is also a proposal for setting up a D.D.T. factory with the help of W.H.O. and U.N.I.C.E.F. and a second one under the T.C.A. programme.

26. West Bengal and Madras produce about 1,00,000 lb. of quinine per year. This quantity should be raised to 1,50,000 lb. to bridge the gap between production and consumption. The Government have appointed a special Cinchona Committee for the purpose of investigating the problems of the Cinchona industry.

#### VITAL STATISTICS

27. The application of statistical methods to the problems of health administration is a highly specialised discipline and requires the services of highly qualified and well-trained statisticians. A satisfactory fulfilment of the functions of the Bureau of Health Statistics in the Directorates of Health Services will need modern mechanical aids. A provision of Rs. 9·25 lakh for this purpose has been made in the Plan. Experimental pilot studies for the improvement of vital and health statistics will be undertaken along with population studies, for which provision has been made.

#### FAMILY PLANNING

28. The rapid increase in population and the consequent pressure on the limited resources available have brought to the forefront the urgency of problems of family planning. The main appeal for family planning is, however, based on considerations of the health and welfare of the family. Family limitation or the spacing of the children is necessary and desirable in order to secure better health for the mother and better care and upbringing of the children. Measures directed to this end, therefore, form part of the public health programme.

29. All progress in this field depends first on creating a sufficiently strong motivation in favour of family planning in the minds of the people and, next, on providing the necessary advice and service based on acceptable, efficient, harmless and economic methods. But these presuppose (1) intensive studies concerning the attitudes and motivation affecting the size of families, and about techniques and procedures for the education of the public on family planning, and (2) field experiments on different methods of family planning as well as medical and technical research. A sum of Rs. 65 lakh has been allocated by the Central Government in the Plan of the Ministry of

Health for a family planning programme. This programme includes :—

- (1) provision in Government hospitals and health centres of advice on methods of family planning for married persons who require such advice ;
- (2) field experiments on different methods of family planning with a view to determining their suitability, acceptability and effectiveness among different sections of the population ;
- (3) development of techniques and procedures for educating people rapidly on family planning methods ;
- (4) collection, from representative sections of the population, of information on reproductive performance, and on attitudes and motivations affecting the size of the family ;
- (5) study of the inter-relationships between economic, social and population changes ;
- (6) collecting and studying information about different methods of family planning (based on scientifically tested experience in India and elsewhere) and making such information available to professional workers ;
- (7) research on the medical and technical aspects of human reproduction.

With the object of carrying forward the programme of family planning, two committees have been recently constituted by the Central Government, one to deal with population policy and the second for research and for framing programmes relating to family limitation.

## CHAPTER XXXIII

### EDUCATION

The success of a democracy depends on the growth of a spirit of co-operation, disciplined citizenship and the capacity of the ordinary citizen to participate intelligently in public affairs. It is essential, therefore, that education should train the individual to place duties above rights and should develop in him the power of critical appreciation and the habit of logical thought.

2. The existing educational facilities are obviously inadequate. They provide only for 40 per cent of the children in the age group 6-11, 10 per cent in the age group 11-17, and 0·9 per cent in the age group 17-23, whereas the Constitution requires that within 10 years of its commencement free and compulsory education should be provided for all children up to the age of fourteen. The present educational system also suffers from a number of defects. To begin with, it is top-heavy. Although the provision at the secondary stage is properly proportioned to that at the primary stage, the provision at the university stage is larger than the base structure can profitably support. An undue emphasis on academic training has retarded the development of a practical sense and resourcefulness among many students, and the absence of adequate facilities for technical and vocational education results in a much larger number of them going in for general education than is justified by the requirements of the country or their own aptitudes. Then there are grave disparities between different States in regard to the provision of educational facilities. Similarly, educational facilities are not properly distributed between urban and rural areas, to the disadvantage of the latter. Another serious defect is the comparative neglect of women's education. The position in regard to teachers is also highly unsatisfactory. A large proportion of them are untrained.

3. Some attempts have been made to remodel the system in such a way as to suit the country's needs better. At the primary level the basic pattern has been accepted and a beginning has been made in the matter of opening new basic schools and converting some of the existing primary schools into basic ones. Some attempts have also been made to make secondary education more broadbased and practical. But by and large teaching continues on the old lines and practically the entire task of remodelling the system still remains to be done.

### RESOURCES

4. The Committee on the Ways and Means of Financing Educational Development in India has estimated that a national system of education providing education for 100 per cent of the

children in the 6-14 age group would require an annual expenditure of nearly Rs. 400 crore. In addition Rs. 200 crore would be needed for the training of teachers for basic and high schools and another Rs. 272 crore for the construction of buildings. In spite of a considerable increase in recent years, the total expenditure on education during 1949-50 was only about Rs. 100 crore. The Five Year Plan provides about Rs. 156 crore (Rs. 39 crore at the Centre and Rs. 117 crore in the States) for educational development over the five year period. The inadequacy of this provision is all too obvious and in the existing conditions a large share of the responsibility for providing for education must devolve on the people themselves. There is evidence to believe that they are willing to make contributions in money, land, labour and buildings.

#### PRIORITIES

5. The lack of resources makes it imperative that the programme should be drawn up according to a carefully considered system of priorities. Apart from the consolidation and improvement of existing facilities, priority should be given to experiments and research in improved educational methods, the training of teachers, the preparation of literature for teachers, children and adults, the provision of adequate facilities for basic and social education, and the development of facilities for technical and vocational education at the lower levels as well as for training high-grade technicians in certain selected fields. As regards university education, priority should be given to the improvement of standards and the development of post-graduate work and research.

6. The Commission recommends that a serious attempt be made to achieve the following broad targets subject to such modifications as may be required to suit local conditions.

- (1) By the end of the period covered by the Five Year Plan, educational facilities should be provided for at least 60 per cent of the children in the age group 6-11. These should be extended as early as possible to cover the age group 6-14. The percentage of girls in the age group 6-11 should be raised from 23·3 in 1950-51 to 40 in 1955-56.
- (2) At the secondary stage, 15 per cent of the children of the relevant age group should be brought into educational institutions. The percentage of girls attending these institutions should go up by 10.
- (3) In the field of social education, at least 20 per cent of the men and 10 per cent of the women in the age group 14-40 should be brought within the ambit of social education in the wider sense of the term.

#### AGENCIES

7. Educational programmes are undertaken by the Central Government, the State Governments, local bodies and private agencies. According to the Constitution, education is mainly the concern of

the States. The Centre has an overall responsibility for co-ordinating and guiding the work of the States so that national policies can be evolved. In regard to the expansion of pre-university education the Centre cannot at present do much more than help the backward States. It should concentrate on helping, on a contributory basis, those States which are willing to co-operate in activities which have an all-India significance, such as research on techniques, training of selected personnel, production of literature, the conducting of pilot experiments, etc. It is also necessary to have an expert body at the Centre to guide and co-ordinate basic, social and secondary education in the States.

8. In order to secure local help and co-operation, especially in the field of primary education, the administration of education at the lower levels should be decentralised as far as possible.

#### PRIMARY INCLUDING BASIC EDUCATION

9. In recent years, basic education has been accepted as the pattern for children in the age group 6-14 ; but work in this direction has only just begun. The foremost task in this field is the improvement of technique and the development of methods by which it can be passed on to the vast majority of teachers of rather low educational qualifications. To this end at least one group of model basic institutions should be opened in each of the Part A and Part B States, and in Delhi among the Part C States. Each group should consist of a number of pre-basic and basic schools, a post-basic school, a teachers' training school and a teachers' training college. A few experimental basic schools should also be opened in the urban areas in order to adapt the basic system to urban needs. The Central Government's plan includes some provision for this programme.

10. The training of the large numbers of teachers required within a short period of time is a colossal task. It will require the closest co-operation between the Central Government, the State Governments and non-official bodies. Besides the services of experts in basic education, the programme will require help from allied departments, such as those of agriculture, animal husbandry, co-operation, etc. The training programmes should be split up into two parts, both proceeding side by side, one concentrating on quality, which can grow only slowly, and the other on those basic skills and knowledge which can be imparted to large numbers at a time in regional camps. The teachers trained by the latter method should continue to be guided in their job by literature and peripatetic teachers posted in their midst for short periods.

11. In view of the poor return from ordinary primary schools the tendency to open new ones should not be encouraged and, as far as possible, resources should be concentrated on the improvement and remodelling of existing primary schools on basic lines in so far as it is possible to do this with the available staff. As an immediate step craft teachers should be trained on a large scale and crafts introduced into as many schools as possible.

## SECONDARY EDUCATION

12. A Commission has recently been appointed to consider fully the present system of secondary education and it would not be proper to anticipate its recommendations. We would, however, like to stress that it must grow from the education that is being given at the mass level: in other words, it should be closely integrated with basic education and the child should not feel that in passing from a basic school to a secondary school there is a violent break in the curriculum and methods of teaching.

## UNIVERSITY EDUCATION

13. A proposal for setting up a University Grants Commission on the lines proposed by the University Commission two years ago has been accepted by the Central Government and various details connected with it are under consideration.

14. The immediate difficulty that has to be faced in the reform of university education is that of finance. A number of universities are in straits and hardly any university has the funds for development. The main financial burden has to be borne by the Central Government, because the resources of the States are already strained in providing for primary and secondary education. In order to make the best use of the available resources the University Grants Commission should see that the tendency to open new universities without adequate finances is resisted. Economy should also be effected by the co-ordination of post-graduate work in the various universities; and there is room for economy in the running of the universities as revealed by the report of the Committee appointed to go into the problems facing the three central universities.

15. Another important problem is the serious overcrowding in most of the colleges. There is no alternative but to apply selective tests on a large scale so that nobody is allowed to receive university education who is not fit to profit by it. This will make it all the more necessary to ensure that pre-university education is purposeful and complete in itself. Another corollary is that the possession of an examination degree should not be an essential qualification for entering into various grades of public service. Insistence on a degree for many grades and posts has been an important factor in creating congestion and thereby reducing standards in university education. Recruitment to the public services should be by competitive tests and non-possession of a degree should not be an absolute bar to taking a competitive examination.

## BUILDING UP A NEW SYSTEM—RURAL UNIVERSITIES

16. The urgent necessity of providing higher education for the population in the rural areas is obvious. To meet this need the University Education Commission recommended a new pattern of



education through Rural Universities. During the period covered by the Plan, the Central Government should help to establish at least one such university. It should be located in a place where the earlier stages of basic education have been fully worked out. Apart from serving the villages, such a university is likely to be useful in suggesting reforms in the existing universities.

### SOCIAL EDUCATION

17. The concept of adult education if confined to the mere promotion of literacy has been found to be too narrow and requires to be widened so as to include the education of adults in health matters, the proper use of leisure and in citizenship. To denote this new concept the term 'social education' has been coined. It implies an all-comprehensive programme of community uplift through community action. In a country in which so large a proportion of the population is illiterate the growth of social education has a vital significance for national development. In the Central Government's plan Rs. 7.5 crore are provided for social education. Several States also have social education programmes and in some of them much valuable work has been done. All forms of group activity offer opportunities for social education such as, for instance, the work done by village panchayats, co-operative societies, trade unions, etc. It is useful to try and organise social education programmes in such a way that the needs which are felt to be urgent in any area are taken up first and, at the same time, through the success of these programmes increased resources are created for further development. Economic activities which are carried on co-operatively are invariably a favourable point at which to start. In this connection, trained community organisers can make a considerable contribution. Every school or college should serve as an agency for extending social education in the neighbourhood.

### PROFESSIONAL EDUCATION

18. An increasing amount of attention has been given to technological education during the last five years. Facilities for under-graduate study have increased considerably, but similar facilities for post-graduate education and research are still inadequate. Also, the provision of training for industrial workers, technical teachers and instructors has not kept pace with the needs of the country. Until, however, the Technical Man-power Committee of the All-India Council for Technical Education has assessed the country's requirements, it would be advisable to consolidate the work in existing institutions and not to embark upon new ventures except in certain specialised fields, such as printing technology, woollen and silk textile technology, architecture and town planning. There is also need for more training facilities at the artisan and craftsman level and for training centres in the villages. As regards the pattern of technical education at different levels, the Joint Committee of the All-India Council of Technical Education and the Inter-University Board has made specific recommendations for engineering and technology.

### WOMEN'S EDUCATION

19. Though women are particularly suited by nature for certain occupations, such as teaching and nursing, they should have the same opportunities for education as men. Since, however, in this country most of them, for a variety of reasons, have to suspend their studies in their early teens, it is important that extensive opportunities should be afforded to them for private study and for taking the higher examinations as private candidates. Furthermore, at the secondary and even at the university stage, women's education should have a vocational or occupational bias. This can best be achieved if the plans for women's education and the various cottage industries are co-ordinated.

### TEACHERS' SALARIES AND CONDITIONS OF WORK

20. One of the chief causes of the poor standard in the country's educational institutions is the low scales of salaries paid to teachers and the highly unsatisfactory conditions of their service. The Central Government have taken steps to improve them in centrally administered areas and recently some States have also taken measures to improve the pay scales of teachers, but on the whole conditions remain very unsatisfactory. We consider that every State Government should, within the limits of its resources, try to put the remuneration of teachers on a fair basis of comparison with that of other services. They should also be free to supplement their small incomes by conducting refresher courses during the vacations, running evening classes for working children, organising extension services in the universities, etc.

### MANUAL WORK AND SOCIAL SERVICE BY STUDENTS

21. The Plan provides a sum of Rs. 1 crore for youth camps and labour service for students. It is proposed that students between the ages of 18 and 22, except when they are exempted on medical grounds, should devote a period to disciplined national service. This would help in their development as workers and citizens. In the present system of education manual work finds scarcely any place and this has important consequences for national development. It is, therefore, proposed that, while some manual work should be encouraged as a daily routine at some stage during the course of education a period, which may extend from six months to a year, should be spent in manual activity. This could be organised, for instance, in relation to community projects, irrigation works, roads, improvement of slums, sanitation projects, etc. It is proposed that a beginning should be made with small groups (for instance, students taking the Master's degree) for periods varying from three to six months.

### EXPECTED RESULTS OF THE PROGRAMMES

22. The provision of Rs. 39 crore for education made by the Central Government is divided roughly into Rs. 20 crore for pre-university education, (mainly basic and social education) Rs. 2.92

crore for university education, Rs. 11 crore for scientific and technical education, and Rs. 1 crore for youth camps and labour service for students. The provision of Rs. 4 crore for programmes of social welfare is also included in the Rs. 39 crore for education. A large number of the proposed schemes will be implemented in such States as are willing to co-operate and share financial responsibility with the Centre in such proportions as may be agreed upon. The provision of about Rs. 117 crore made by the various States for education will be mainly devoted to all sorts of schemes for expanding and improving pre-university education.

23. The results of the programmes by the end of the five year period are expected to be as follows:—

(1) In the field of primary education the number of primary schools will have increased by 17 per cent, and the number of pupils by 25 per cent. The corresponding increase in the junior basic schools is expected to be 22 and 81 per cent. Whereas in 1950-51, only 42·9 per cent of the children in the age group 6-11 were provided for in primary and junior basic schools, this percentage is expected to rise to 55·7 in 1955-56. This will be the result of the efforts made by the State. It can be considerably improved upon if local resources are successfully tapped for the purpose of education, and so it should not be impossible to reach the target of 60 per cent.

(2) The number of secondary schools will have increased by 18 per cent, and the number of pupils by 32 per cent. The percentage provided for in the age group 11-17 will increase from 10·8 in 1950-51 to 13·3.

(3) In the field of technical and vocational education, the number of institutions will have increased by 57 per cent and that of students trained during a year by 63 per cent. These striking figures have to be viewed, however, in the light of the inadequate facilities which exist today.

(4) The percentage of teachers trained annually will rise by 15 in the case of primary teachers and by 54 in the case of basic teachers; but the percentage of untrained teachers is at present so large—37 in the case of primary schools and 45 in the case of junior basic schools—that these increases will not make a very startling impression.

(5) The unsatisfactory situation in regard to girls' education will not materially improve and the programmes require some revision so that this aspect of the educational problem receives more emphasis.

## CHAPTER XXXIV

### LABOUR

Labour problems should be approached from two angles: the welfare of the working class and the country's economic stability and progress. The basic needs of the worker for food, clothing and shelter must be satisfied. He should also enjoy improved health services, wider provision of social security, better educational opportunities and increased recreational and cultural facilities. The conditions of work should be such as to safeguard his health and protect him against occupational and other hazards. He should be treated with consideration by the management and he should have access to impartial machinery, if he fails to get a fair deal. Finally, he should have freedom to organise and adopt lawful means to promote his rights and interests.

2. Most of these rights have been recognised and have found a place in the Constitution. The Central and State Governments are alive to them. Some of the laws relating to factories, trade unions and compensation for injury and death have existed for a long time ; but the pace of progress has quickened since independence and many measures for the welfare of workers have been introduced. In addition to the funds allotted to housing and to resettlement schemes for landless agricultural workers, over Rs. 6·74 crore are intended to be spent on labour welfare during the period of the Plan by the Central and State Governments.

3. The response of the workers to these measures has been satisfactory. There has been an increasing tendency to rely on internal settlement as is manifest by the constitution of the joint Consultative Board on a bipartite basis and the proceedings of the Indian Labour Conference held recently. The improvement of the economic conditions of the workers might have been greater had it not been for the rise in prices and the failure of industry in many cases to renovate and modernise plant and to rationalise the management.

#### INDUSTRIAL RELATIONS—PRIVATE SECTOR

4. The targets of the Plan in the industrial sector require harmonious relations between capital and labour. Economic progress, in other words, is bound up with industrial peace. The employer-employee relationship is, in fact, a kind of partnership for promoting the community's economic needs. The dignity of labour and the vital role of the worker in such an endeavour must receive due recognition. Industrial relations must, therefore, be so developed as to enable the worker to take a greater share in the working of the industry. Accordingly, there should be the closest collaboration at all levels between

employers and employees for increased production, improvement of quality, reduction of costs and elimination of waste.

5. The worker's right to association, organisation and collective bargaining should also be accepted as fundamental to the mutual relations of labour and capital. Trade unions should, therefore, be welcomed and helped as part and parcel of the industrial system. When differences arise, they should be settled in a spirit of reasonable adjustment, keeping the good of industry and the welfare of the community in view. As a last measure, differences should be resolved by impartial investigation and arbitration. At times, the State may even have to intervene and impose a settlement, although the efforts of the parties should be to secure internal settlement of disputes.

6. The object of arbitration and adjudication should be to bring about a just settlement of disputes. For this purpose, legal technicalities and formalities of procedure should be reduced to the minimum, the machinery and procedure should be adapted to the varying needs and there should be no appeal from decisions of an industrial court or tribunal barring the very exceptional case of a decision which may be found to be perverse or against the principles of natural justice.

7. Norms and standards which may govern the relations between employers and workers and for the settlement of industrial disputes should be laid down by a tripartite body consisting of representatives of employers, employees and the Government, and in the absence of agreements in the tripartite body, by Government decisions. Such agreements and decisions may be issued as directives binding upon courts and tribunals.

#### AVOIDANCE OF DISPUTES

8. In order to avoid disputes, the duties and responsibilities of employers and workers should be laid down in specific terms. Every industrial undertaking should, therefore, have a manual of instructions for different classes of operatives. A procedure should be laid down to enable workers to approach the authorities at different levels for redress of their grievances. They should also be kept in touch with the state of the industry and the affairs of the establishment in which they work. Similarly, they should be informed of any change that may affect their interests. The employees must also be able to indicate their desire for a change in the conditions of work. This will prevent precipitate action. Direct action on either side which violates this obligation should be punishable by law.

Social contacts should be promoted among the workers in an industry. The supervisory staff, technicians and welfare officers should try to create cordial relations and mutual goodwill and understanding among them.

### SETTLEMENT OF DISPUTES

9. Works committees should be set up for the settlement of differences on the spot, while joint committees should function for a centre and for the industry as a whole to tackle questions of wider import. Collective bargaining can be successful only if the workers have organised strength and the employers a genuine desire for settlement. Should a dispute continue, the State must step in with an offer of conciliation. In major issues, it may be necessary to appoint *ad hoc* or standing conciliation boards. Panels may also be formed of non-official conciliators. An official enquiry to elicit information or educate public opinion about the merits of a dispute may follow in other cases.

10. If a dispute is not settled by conciliation, arbitration may be necessary. For important industries separate wage boards would be found useful. A central tribunal should be set up to deal with disputes of an all-India character.

### PUBLIC SECTOR

11. Public undertakings differ from those under private ownership in many respects. The profit motive and the exploitation of workers for private gain have no place in a state-owned enterprise. Any profit that it may make is not intended for an individual, but is additional wealth for the country. A worker in a public undertaking has, indeed, the dual role of master and servant—a master as a citizen and a servant as a worker. The better he works and the greater his efficiency, the better he serves and helps himself. To arouse the worker's enthusiasm for the success of public undertakings, justice and fairplay should be the rule. Wages in public undertakings should not be less favourable than those in private concerns. The working conditions and welfare arrangements should in fact serve as models. Furthermore, the board of directors in a public undertaking should contain a few people who understand labour problems and have sympathy for the workers' aspirations. The benefits of all labour laws should also be extended to the workers in public undertakings unless they already enjoy equal or greater benefits.

### ROLE OF TRADE UNIONS AND EMPLOYERS' ASSOCIATIONS

12. For the successful execution of the Plan, the co-operation of the trade unions and employers is indispensable. Such co-operation can take several forms. For instance, by discussing the Plan with the unions and employers, enthusiasm for the Plan can be created among them. Again, the unions can help in the maintenance of industrial peace and in avoiding interruption of work and increasing production while the Plan is being executed. The employers can also consult the workers on the employment of new machinery, methods of production and reduction in the costs of production. Side by side, the trade unions should be asked to increase the scope

of their activities by devoting more time to welfare and cultural activities, especially in organising and running consumers' co-operatives and co-operative credit societies. The employers on their part could help such activity by providing facilities, such as accommodation, clerical help, loans, etc. Finally, the trade unions and the employers' representatives should be associated at various levels. The workers should be made to feel that they are playing their part in carrying out the Plan and that the rise in their own standard of living as well as that of the common man depends on them.

### WAGES

13. In recent years prices have risen rapidly. Industrial profits have also increased considerably and organised labour has obtained substantial increases in wages. To check inflation, however, profits and wages will need to be controlled to some extent during the period of the Plan. The excess profits tax and certain restrictions on dividends helped to check the distribution of large dividends during the war and for a short period afterwards. Similar controls should now be imposed on the remuneration of management, the distribution of profits and the issue of bonus shares.

14. An increase in wages at this juncture will jeopardise the country's economic stability by raising costs of production. The volume of employment may also be affected adversely. Wage increases should, therefore, be avoided except to remove anomalies or where the existing rates are abnormally low or to restore the pre-war real wage through increased productivity resulting from rationalisation and the renewal or modernisation of plant. As regards the wage policy, which should guide the wage boards or tribunals, the principle should be to reduce disparities of income. The worker must have his due share in the national income. The standardisation of wages should also be accelerated and extended. The differences in the wages paid for various jobs should be ironed out as far as possible, except when they are justified by differences in degree of skill, training and experience, mental and physical requirements, attendant hazards, etc. Furthermore, a scientific assessment should be attempted of the relative work-load in different occupations and industries. Full and effective implementation of the minimum wage legislation should be secured during the five year period, depressed areas receiving prior attention. In view of the paucity of data and administrative difficulties, a limited beginning should be made with regard to the fixation of minimum wages for agricultural workers and its scope extended as experience is gained. At the same time, the question of profit-sharing and bonuses should be studied with the help of experts from foreign countries and organisations. The payment of bonuses in cash should be restricted and the balance should go towards the workers' savings.

15. Finally, the constitution of permanent wage boards on a tripartite basis is visualised at the Centre and in the States to deal with wages, conduct enquiries, collect data and review the position from time to time for purposes of wage adjustments.

## SOCIAL SECURITY

16. The man-days lost through sickness and disability result in a heavy drain on the wage-earners' meagre resources and a reduction in industrial output. The lack of social security prevents the building up of a stable and efficient labour force. The Workmen's Compensation Act and the Maternity Benefits Acts of the various State Governments cover some of the risks to which the worker is exposed. The Employees' State Insurance Act is a more comprehensive measure and insures risks of sickness, maternity and injury during employment. In view of its novelty and of administrative and other difficulties, efforts should be solely directed during the Plan period to securing the proper implementation of the Act and to putting it on a sound and sure foundation. The Provident Fund Act of 1952 is another measure which provides for the future of the workers, and it applies at present only to six major industries. A programme for its extension to all the industries employing 50 or more persons should be drawn up.

## WORKING CONDITIONS

17. The working conditions in factories require to be improved considerably. On the legislative side, the Factories Act of 1948, the Plantation Labour Act of 1951, and the proposed legislation to regulate work in shops, establishments and motor transport services are sufficient for the purpose. With regard to factories the main emphasis should be on a proper implementation of the Factories Act by strengthening the Factory Inspectorate and by giving more attention to the social aspects of the legislation and to areas and industries where sub-standard conditions prevail. With the same object in view, a National Museum of Industrial Health, Safety and Welfare should be set up and an Industrial Health Service instituted.

18. Although the Plantation Labour Act of 1951 is a far-reaching piece of legislation intended for the amelioration of the conditions of plantation labour, other measures are also considered to be necessary. For instance the Kangani system should be abolished as soon as possible and cottage industries established to supplement the earnings of plantation workers and the Provident Fund Act extended to plantations, if practicable.

## EMPLOYMENT AND TRAINING

19. The proper utilisation of man-power is a question of the utmost national importance. Although in recent years efforts have been made to organise an efficient employment service and to provide training facilities to workers, much still remains to be done. Recruiting arrangements need to be improved in order to eliminate the exploitation of workers. A survey of labour requirements and opportunities of employment should be undertaken. Training arrangements in the country should be co-ordinated. Proper tests and standards should be laid down and unemployed workers should receive special attention.



20. The progress of rationalisation should at the same time be facilitated so as to reduce costs. Musters should be standardised and work-loads fixed to this end. Side by side, working conditions should be made uniform. Fresh recruitment should be stopped and vacancies caused by death and retirement should not be filled. Superfluous workers should be found employment in other departments without a break in their service and reduction in their emoluments. Before new machinery is installed, the position of raw materials and the capital market, the availability of capital goods and the demand for products should be examined. Gratuities should be offered as an inducement to workers to retire voluntarily. Retrenchment should usually be made from among persons freshly employed. The workers thrown out of employment should be offered facilities for training afresh in other occupations, the Government bearing the cost of training and the management undertaking responsibility for the workers' maintenance. As far as possible, surplus labour should be utilised in the various Government projects. Lastly, incentives should be provided for sharing the gains of rationalisation through higher wages and a better standard of living.

#### PRODUCTIVITY

21. According to the employers in this country, the productivity of labour is steadily going down. The workers, however, do not accept this as a fact. The International Labour Office has agreed to send experts to undertake an analysis of the existing organisation and methods of work, job classification and wage scales with a view to suggesting improvements to increase efficiency and productivity. Closely allied with this subject is the training-within-industry programme. The scheme is intended to improve supervisory skill by three separate measures, namely, job instruction, to develop skill in workers in their particular operations ; job relations, to develop skill in the management of personnel ; and job methods, to develop skill in improving working technique. Experts should be invited under the Technical Assistance Programme to organise training in the above methods. At the same time a sufficient number of officers from the Labour Ministry, employers' organisations and trade unions should be trained in the methods of productivity studies. Productivity, payment by results and training-within-industry schemes should be organised.

## CHAPTER XXXV

### HOUSING

Houses have so far been built through private initiative, but for a long time now private enterprise has not been able to keep pace with the ever-growing demand. For this several factors have been responsible. One of these is rent control and the requisitioning of premises which has discouraged private enterprise. But it is mainly an after-effect of the last war which resulted in a scarcity of labour and materials and a decline in building activity, while the population, particularly that of the towns, continued to increase. During the war labour migrated to the towns to work in the factories for producing munitions and other supplies. When hostilities came to an end, not all those who had left their villages returned home. In 1947 the housing situation was further aggravated by the influx of displaced persons, who, by and large, have wanted to settle in the urban areas. All this has led to the overcrowding of industrial centres and large sections of their population have had to live in slums, huddled together in jerry-built houses or mud-huts, without water and electricity.

#### HOUSING BY GOVERNMENTS AND PUBLIC BODIES

2. Both the Central and State Governments have long recognised the need to provide accommodation for their employees, especially in the smaller towns and out-of-the-way places. Recently, they have also come to feel the responsibility for building houses in the bigger cities for low-income groups even though they are not necessarily employed by the Government. Thus in 1949 the Government of Bombay set up a Housing Board to construct houses for industrial labour and other low-income groups as well as to develop land and assist in the production and distribution of building materials. Already 7000 tenements have been built by the Board for industrial workers and more than 9000 tenements for displaced persons. In Uttar Pradesh a Housing Board is building houses for workers in the sugar factories. Similar boards have also been set up in Madhya Pradesh and Hyderabad. Improvement trusts and municipalities, too, have undertaken housing schemes. Altogether 16,771 houses have been built by local authorities.

3. When the Central Government was faced with the colossal problem of housing the displaced persons from Pakistan, they had for the first time to embark on a large scale housing programme to assist people other than their own employees. Colonies and townships sprang up in various parts of the country and great numbers of houses and tenements were built.

### PRIVATE ENTERPRISE

4. With the large profits made during and after the war, several business concerns tried to improve the housing conditions of their workers ; but, on the whole, the accommodation provided by them has not proved satisfactory. In 1950, the Industrial Committee of Plantations decided that the planters in north India should build two-roomed houses to house at least eight per cent of their staff every year. Accordingly, 25,000 houses were built during 1950-51. The Coal-mines Welfare Board has also built houses of a standard type at Bhuli near Dhanbad. The jute industry has perhaps provided more houses for the workers than any other.

Co-operative housing societies, on the other hand, have tried to relieve the scarcity of accommodation among the middle and low-income groups, particularly in the States of Madras and Bombay.

### ESTIMATE OF HOUSING SHORTAGE

5. The Planning Commission has attempted to assess the housing shortage in the chief industrial towns. Of 17,14,560 workers employed in large-scale industries in 31 towns, 4,54,000 are in urgent need of accommodation. The census figures for 1951 indicate that the population of 74 towns inhabited by one lakh or more persons had increased by about 74 lakh during the decade ending 1950 and the population of towns with 5000 to one lakh had increased by 140 lakhs. Assuming that five persons occupy a house, at least 43 lakh houses will be needed to accommodate this additional population.

### HOUSING POLICY

6. The division of powers between the Centre and the States in regard to housing has not been clearly defined in the Constitution, but both have considerable responsibility in the matter. Since private enterprise cannot generally provide houses for low-income groups at rents, which they can afford, the State has to grant extensive subsidies and loans. But in view of the financial difficulties of the State Governments, the Central Government are expected to meet the bulk of the expenditure on housing, especially in urban areas. The Planning Commission has, accordingly, recommended that a subsidy up to 50 per cent of the total cost of construction, including the cost of land, should be paid to the State Governments, who will allocate it to the statutory housing boards and co-operative societies of industrial workers. Private employers should be given up to 25 per cent of the total cost of construction including the cost of land. Loans, repayable in 25 years, should also be given to the States for disbursement through statutory housing boards, and co-operative housing societies of industrial workers. Private employers may obtain loans up to 37 per cent of the total cost, repayable in 15 years, direct from the Central Government. The Commission feels that co-operative societies of the middle classes and other low-income groups, though they may not be eligible for subsidies, should receive loans from the Government at concessional rates.

7. The Commission, however, realises that for years to come the major share of the building programme will have to be undertaken by private enterprise. This should be encouraged through (1) the provision of suitable building sites, (2) assistance in obtaining loans, (3) a more equitable distribution of essential building materials, (4) exemption of newly-built premises from the operation of the rent fixation law for a given time. While private builders should be encouraged, speculation in land should be prevented.

#### HOUSING STANDARDS AND ESTIMATES OF COST

8. As there is an acute shortage of houses, it will be impracticable to lay down standards which are more ambitious than those required for the purposes of privacy and a reasonable standard of living. Houses should, therefore, be of two types (a) single-storied tenements with a carpet area of 220 sq. ft., and a courtyard in the smaller towns, and (b) multi-storied buildings in the larger cities, each tenement having a carpet area of 240 sq. ft. It is estimated that the cost of a single-storied tenement in the smaller towns would be about Rs. 2700, whereas a unit in a multi-storied building in the bigger cities would cost about Rs. 4500. The rents of these tenements would work out at about Rs. 10 and Rs. 17/8 per mensem. The Planning Commission has recommended that where employers receive subsidies for housing their workers, the management of these houses should be the charge of a committee consisting of representatives of the employers and employees and a chairman nominated by the State.

#### HOUSING FINANCE

9. With the enactment of the Employees Provident Fund Act, a source of capital for investment has become available for housing finance. The Commission has proposed that a sum of Rs. 38.5 crore should be invested by the Central Government in subsidies and loans for housing during the period of the Plan. The State plans have, in addition, a provision of Rs. 10.19 crore for housing.

#### TOWN AND COUNTRY PLANNING

10. To ensure a uniform policy on town planning, there should be a National Town and Country Planning Act. The need for regional planning has become all the more urgent because of the number of river valley projects that are now being executed. The population of the region, industrial and agricultural conditions and communications are important factors in regional planning. Besides integrating agriculture and industry in the villages, the regional plans should aim at a balanced distribution of the population between the villages, market towns and industrial areas. They should also provide for the dispersal of industries, the development of small-scale and cottage industries and medical, educational and recreational facilities.

#### SLUM CLEARANCE

11. Slum clearance should be considered an essential part of the housing policy and should proceed apace. In certain cities im-

provement trusts and local authorities have tried to clear the slums, but they have been handicapped for want of adequate resources. The Commission has, therefore, recommended that from the proposed outlay of Rs. 38.5 crore on housing schemes during the five years covered by the Plan, the Central Government should grant loans for slum clearance to the improvement trusts and local authorities through the State Governments.

#### RURAL HOUSING

12. The villager has been accustomed to build his own house. The Government can help to improve the standard of rural housing by building model houses. The villagers should also be encouraged to help themselves and build their houses under expert supervision. Recent reforms in the land tenure system and the establishment of the Community Development Projects have made it possible for improved methods and designs in building houses to be demonstrated in the rural areas. In the villages, the emphasis should be on building cheap houses which are well ventilated and not too near the cattle sheds. Sanitary latrines and the other amenities of hygienic living are factors to be taken into account. For instance, chimneys for kitchens, weather-resisting walls and roofs of improved design can be built with more durable materials without additional cost. "Aided self-help" implies the utilisation of local materials, such as timber, bamboo, clay, sand, grass, etc. To make the most of these the Government should launch pilot projects in selected villages. Since the burden of urban housing is borne by the Central Government, the State Governments might be expected to concentrate their activities on the improvement of housing standards in the rural areas. For example, they can provide interest-free or long-term loans, and popularise new methods that have proved successful in other parts of the country.

#### RESEARCH AND A NATIONAL BUILDING ORGANISATION

13. Research has manifold functions, such as the standardisation of building components, discovery of new materials or synthetic substitutes, a study of the nature and properties of clay, minerals and soils, etc. Facilities for research and advanced study are at present provided by the universities, specialised institutions and recognised institutes of engineers, architects, town planners and the association of builders. The factories which manufacture building materials also provide facilities for research. The scope of work in these institutions can, however, be considerably enlarged. Research should also be undertaken on the following.—

- (a) the basic building materials, such as bricks, tiles and other indigenous materials ;
- (b) the use of timber and bamboo to replace steel and other building materials ;
- (c) the revision of building codes ;
- (d) the standardisation and methods of mass production of building components and materials.

The training of masons and other artisans should be considerably improved and the results of research should be made available to Governments and private bodies. To ensure the maximum use of such research, the work done by the various institutions should be properly co-ordinated and publicised. With this end in view a national building organisation may be set up, and the recommendations made by this organization may be implemented by the States and the Central Government.

#### HOUSING BOARDS

14. Statutory autonomous housing boards should be appointed to implement the housing programme. Such boards should have regional branches affiliated to a central or a federal body. These boards should seek to :

- (a) administer the regional housing fund ;
- (b) vitalise the State building programme ;
- (c) collect information on the housing requirements of different classes of people ;
- (d) build houses according to specified plans in selected areas ;
- (e) allot tenements to workers and other low-income groups ;
- (f) plan and build new townships ;
- (g) clear the slums and improve housing conditions among the poorer classes ;
- (h) maintain and realise the rent for houses belonging to the Board ;
- (i) encourage individuals and co-operative societies to build houses ;
- (j) provide vocational training for building labour and organise building trades ; and
- (k) guarantee loans taken by private builders against adequate securities.

#### LEGISLATION

15. The need for a Town and Country Planning Act has already been indicated. Besides new legislation, certain amendments are also desirable in the existing legislation. At present, the cost of land in the slum areas is prohibitive, for in addition to its market value compensation at the rate of 15 per cent has to be paid. The Commission has suggested that the Land Acquisition Act of 1894 should be modified, and compensation regulated according to the use to which the land had been put on the date on which the notification of acquisition was issued. Additional compensation should not be paid for slum areas

and other lands required to implement the housing schemes for industrial workers and low-income groups. The Act should also provide for a quicker method of taking possession of acquired property.

16. Another recommendation is that legislation on rent control should be uniform in the various States, but, as already stated, in order to encourage private enterprise, newly built houses may be exempted from such legislation for a certain period. The civil courts may fix the rent for such houses on the basis of a reasonable return on the cost of construction and services. Houses should be requisitioned only in exceptional circumstances.

## CHAPTER XXXVI

### SOCIAL WELFARE

Though the Constitution assures all citizens social justice in the abstract, it can only be realised fully in practice if people supplement the efforts of the State by willing co-operation. A good standard of life implies something more than the satisfaction of basic needs. It implies responsibility on the part of the State for creating a social environment in which its citizens enjoy mental and physical health and derive pleasure from social and family life. With the awakening of political consciousness and the enthusiasm of workers and organisations to improve social conditions, there is a possibility of consolidating economic gains by well-conceived social welfare programmes spread over the whole country. The principal social welfare problems relate to women, children, youth, the family and under-privileged groups. In this chapter we briefly consider some of the more important problems of social welfare which need the special attention both of the State and of private welfare agencies.

#### AGENCIES

2. It is envisaged that, within the limitations of their resources, the Central and State Governments and the local authorities will strive to undertake more direct responsibility in respect of social welfare than hitherto. But the voluntary agencies will have to share the major burden in this field and their role in social welfare is emphasised in the Plan. A sum of Rs. 4 crore has been provided for strengthening, improving and expanding the nature and scope of their welfare activities. In order to administer this fund it is proposed to set up a social welfare board enjoying a great deal of administrative authority and composed largely of non-officials having actual experience in the field of voluntary welfare work.

3. There is a great need for co-ordination between the various voluntary agencies so as to ensure effective use of personnel and success in the collection of funds. Co-ordination has to be secured on a functional basis between different national organisations engaged on the same specific tasks and also between different agencies operating within the same area or community.

#### TRAINING AND RESEARCH

4. The efficiency of the social services will depend a good deal upon the personnel employed and the leadership they can provide. There are several schools for the training of social workers in India and some of the States are thinking of opening new training institutions. During the next five years, it should be possible to establish rural schools for social work. These will train workers and draw up



programmes especially suited to the needs of the village. Since the scope for welfare activities in rural and urban areas is so extensive, a large number of voluntary workers should be recruited and given training in the rudiments of social work.

5. The existing knowledge of many basic social problems is far from adequate. The Plan provides a sum of Rs. 50 lakh for research and investigations relating to social, economic and administrative problems of national development.

#### RESOURCES

6. While the State may assist deserving agencies, the habit of self-help should be fostered widely and, as far as possible, social welfare should be financed by the community itself. Funds available with endowments and trusts may be an important method of supplementing the resources which the State and private agencies can supply and it is suggested that an enquiry be undertaken with a view to suggesting suitable legislation for use of these funds for social welfare programmes.

#### SOCIAL LEGISLATION

7. One of the important methods of bringing about progressive social change is social legislation. Since independence, a good deal of social legislation of basic importance has been enacted, but existing legislation requires to be scrutinised with a view to ascertaining its adequacy and the modifications that may be necessary. Adequate measures for enforcement, backed by enlightened public opinion, are essential for any piece of social legislation to be effective.

#### WOMEN'S WELFARE

8. The Madras and Uttar Pradesh Governments have set an example by creating special departments to promote the welfare of women. The major burden of organising welfare activities, however, has so far been borne by private agencies. Some of them have done valuable work. For instance, the All India Women's Conference has 37 branches and about 300 sub-branches all over the country. The National Council of Women in India, the Girl Guide Association, the National Y.M.C.A., the Association for Moral and Social Hygiene and the Trained Nurses Association of India are affiliated to it. The Kasturba Gandhi National Memorial Trust is doing welfare work among the rural population in 18 States. Many other organisations, too, run dispensaries, maternity centres and homes for women and destitute children. The core of the problem, however, still remains untouched. What is needed are large numbers of voluntary workers ready to execute simple, well thought-out programmes in every village and locality.

#### CHILD WELFARE

9. Social welfare agencies have a vital part to play in dealing with the problems of the health, growth and care of children. Among the aspects which need special attention are:

- (1) the need to supplement the diet of children, especially in the case of under-nourished children, in schools and other institutions ;
- (2) pilot projects for dealing with the problem of feeble-minded children ;
- (3) child guidance clinics;
- (4) organisation of creches to look after the children of working mothers ;
- (5) maintenance and management of playgrounds ;
- (6) organisation of children's centres, each with a well-equipped playground, library of juvenile literature, a stage and facilities for developing child arts and crafts ;
- (7) organisation of institutions for the welfare of orphaned, deserted and destitute children. It is suggested that the orphanages and other similar institutions should be registered and supervised.

There is also the special problem of juvenile delinquency. To deal with it the Ministry of Education has drafted a model Act. In certain States the rehabilitation of delinquents is being attempted through the organisation of children's villages, boys' towns and other institutions. It would be useful to set up juvenile aid committees in cities consisting of specially trained police officials, to examine the cases of delinquents and to deal with minor delinquencies without reference to the Courts.

#### YOUTH WELFARE

10. The main object of the youth welfare movement should be to develop character and a will to work for the good of the community. Encouragement should be given to the scout movement and the National Cadet Corps. A sum of Rs. 1 crore has been provided for mobilising the services of youth for constructive nation-building activities.

#### FAMILY WELFARE

11. The Governments of Bombay and Madras have already set up a few family welfare agencies. For the benefit of young parents, the State should initiate a more broadbased programme for furnishing useful information on the problems of sex, family planning, marital hygiene, domestic economy, mothercraft and homecraft.

#### WELFARE OF THE PHYSICALLY HANDICAPPED

12. It is customary for the family or the community to take care of physically handicapped persons. Where such protection is not forthcoming, they usually take to begging. The total number of such afflicted persons in India has never been ascertained, but it is known that the problem is a very considerable one. To obtain better estimates, sample surveys should be undertaken in selected

urban and rural areas. While some provision exists in some States for this class of person, the best course for the present is to assist and encourage voluntary organisations already working in this field.

#### NATIONAL PHYSICAL FITNESS

13. Physical fitness is an essential aspect of the programme for social welfare. It is envisaged that an expert committee should evolve national standards of physical fitness for various age groups and for different regions. Educational authorities and organisations devoted to the promotion of physical fitness could provide facilities to bring these standards within the reach of the young. It is also desirable that one of the existing physical education institutions should be converted into a national institute. Playgrounds are, of course, a vital need and some kind of playground should be available for every community centre, school, and youth organisation. India has yet to make much headway in the field of sport and steady support and encouragement are needed.

#### COMMUNITY APPROACH IN SOCIAL WELFARE

14. The field of social welfare will expand in the measure in which local communities accept responsibility for solving their own problems. Community welfare programmes embody four inter-linked ideas, namely, (1) self-help and mutual service, (2) maximum use and development of local resources through organised community life, (3) economic betterment and cultural development through social participation in co-operative effort, and (4) achievement of community objectives with minimum assistance from the State. These ideas are applied in different fields of social welfare. Community programmes hold high promise both in rural and urban areas. The rural community programme has been described earlier. Its aim is to transform not only the technical environment in the villages but also social and economic relations and attitudes within the village community. There is no section of the rural community which stands outside the influence of this programme. Urban life tends to shift the emphasis from the community to the individual with all the consequences that this implies. There is, therefore, a considerable need to establish community centres through which local urban groups can survey their own urgent social and economic needs and seek solution through co-operative effort. The work of such groups can make a vital contribution towards raising the level and enriching the content of urban life.

## CHAPTER XXXVII

### WELFARE OF BACKWARD CLASSES

The term "backward class" is applied to groups which from a variety of causes have lacked adequate opportunities for economic and educational development. It includes the Harijans, i.e., the 799 scheduled castes, the scheduled tribes, the groups which were hitherto known as criminal tribes, and certain other groups known as "other backward classes", but not yet precisely defined. A Commission is shortly to be appointed to draw up a schedule of these "other backward classes" who are believed to number about 546 lakhs.

#### SCHEDULE CASTES

2. The present population of the scheduled castes is about 500 lakhs. For a long time education has been recognised as their most pressing need, and a good deal has already been done by opening primary schools in areas where they live in large numbers and by assisting scheduled caste students by the grant of free tuition, stipends, etc., even up to the university stage. Special emphasis has been laid on vocational and technical training and loans are in many instances advanced to the trainees to enable them to settle down in their respective trades. The State Governments have provided altogether about Rs. 10 crore for the benefit of scheduled castes during the period of the Plan and the Central Government have provided a further sum of Rs. 4 crore. A considerable portion of this will be spent on education.

3. Untouchability has been abolished and its practice forbidden by the Constitution. But legal abolition cannot eradicate immediately an institution which has its roots deep in the past and in the psychology of certain communities. To complete the work, persuasion, example and social education are necessary. The practice of democratic behaviour in social life and opportunities furnished by the State and by private agencies for self-development and the betterment of economic life and living conditions can play a useful part.

#### SCHEDULED TRIBES

4. Belonging to the oldest section of the country's population, the scheduled tribes live in forests and hilly regions in a central belt beginning from the Aravalli Hills in the west and extending into parts of Bombay State, Madhya Pradesh, Bihar, Orissa, West Bengal and Assam. In the north, they are found in the southern ranges of the Himalayas, and in the south in the eastern and western ghats and the Vindhya and Satpura mountains. In 1950, there were 245 scheduled tribes with a population of nearly 179 lakhs.

5. In the past one influential school of thought held the view that these tribes should be allowed to live their lives in isolation from other more organised groups and undisturbed by modernising influences. Whatever may have been the justification for such a policy, it is now no longer practicable. With the growth of communications, the tribal areas have come nearer to the outside world and their social life bears the impress of extraneous influences. There now has to be a positive policy of assisting the tribal people to develop the natural resources of the areas which they inhabit and to evolve a more productive economic life without exposing themselves to exploitation at the hands of more organised economic interests. As regards their religious and social life, changes should come at the initiative of the tribal people themselves. There are many features of their social life which should not only be retained but developed.

6. Article 275 of the Constitution requires that grants should be made for promoting the welfare of scheduled tribes. Under this Article, the Central Government have provided Rs. 12 crore for the period of the Plan, but the detailed schemes have not yet been finalised. The various States have provided another Rs. 11 crore for the development of tribal areas. A provision of Rs. 3 crore has also been made for the development of the North East Frontier Agency in which a large section of the tribal population resides.

#### DEVELOPMENT PROGRAMME

7. Roads can play an important part in developing the economy of the tribal areas and this has now been recognised. In the State plans for the tribal areas, a sum of over Rs. 2 crore is provided for roads. Water supply is also an important problem in most tribal areas and special efforts have to be made to improve wells and local irrigation facilities. The tribes living in the forest areas should be entrusted with the care of the forests and their exploitation. The young tribals should be brought up to love the forests in which they live and given opportunities for training in forestry.

8. The tribal communities in mountainous regions have long been accustomed to the system of shifting cultivation. Some of them, however, have adopted more settled methods of agriculture and have become skilled in terrace cultivation with the use of the normal village implements. Attempts have to be made to introduce the others gradually to settled and improved methods of agriculture after a proper study of local conditions. A number of areas inhabited by tribal communities have been selected in Assam, Bihar, Orissa, Madhya Pradesh and Tripura for Community Development Projects and these will serve to accelerate the rate of agricultural development.

9. Notwithstanding the illiteracy of the tribal population, tribal co-operatives organised by social workers are functioning satisfactorily in a number of States. There are also other organisations such as the Grain Banks or *Beej Kosh* of Bombay, and the Grain Golas

in Bihar which help the tribals with seeds and in the storage of crops and give them guidance in the improvement of agriculture. Co-operative organisation requires to be extended to other fields also. To meet the basic needs of their life, the tribals have devised some admirable handicrafts, but they are not always aware of the value of their products. Their crafts can in some cases become a subsidiary source of income if the sale of these products in other parts of the country is organised through co-operative societies.

10. The diseases most common in the tribal areas are malaria, yaws, scabies and other skin diseases, venereal diseases, leprosy, small-pox, tuberculosis, trachoma, glaucoma and elephantiasis. Lack of environmental hygiene, malnutrition and impure water supply are among the causes of the heavy incidence of disease. Owing to the poor communications and the wide dispersal of tribal habitations, it has so far been difficult to provide them with medical relief and health services. Any health programme for the tribals should make provision for mobile dispensaries and include comprehensive health surveys of selected areas covering diet, beliefs, and health practices, the causation and incidence of various diseases, herbal medicines and other tribal methods of healing.

11. The usual formal system of education in vogue in other parts of the country may not be suitable to the tribals. For some time at least, tribal education should be the special concern of the Commissioner of Scheduled Castes and Scheduled Tribes and the Department of Scheduled Castes and Tribes in the various States. During the next five years they will concentrate on basic education and its correlation to the needs of these pastoral and agricultural communities. The medium of instruction in basic schools will be the mother tongue of the child and the regional language will be taught from the upper primary stage. In their programmes for the education of the tribal population, the State Governments have included vocational and technical training schools, residential *ashrams* and hostels.

#### THE " CRIMINAL TRIBES "

12. The criminal tribes are made up of some 198 nomadic tribes who have not been able to adjust themselves to the proprietary conventions of a settled economy. Though many of the members of these tribes have been associated with anti-social activities, not all of them can be labelled as criminals. Some of them have shown a disposition to settle down as small traders and shop-keepers and they possess skills which can be used to develop various crafts.

13. According to the Constitution, no man can be deemed guilty unless he is proved to be so in a court of law. The Criminal Tribes Acts were therefore repealed from August 20, 1952. A new policy has now to be evolved for meeting the problems presented by these communities. They will in future be treated as backward classes and special efforts will be made to achieve their economic rehabilitation. A well thought out scheme of education will be applied to the children so as to wean them from anti-social practices. Individual acts of criminality will be dealt with under the ordinary law.

## CHAPTER XXXVIII

### REHABILITATION OF DISPLACED PERSONS

Nearly five million Hindus and Sikhs living in West Pakistan had to leave their homes within a few months of partition in August 1947. Under somewhat different conditions and at a steadier pace, 1.5 million Hindus migrated from East Pakistan, followed by another million or so early in 1950. The influx from East Pakistan still continues; at times it slows down and at others it assumes serious proportions. At present, there are over 2.1 million displaced persons in West Bengal concentrated round Calcutta and the two neighbouring districts and the economy of the State has consequently been subjected to serious strain.

#### RURAL REHABILITATION

2. In some States, such as the Punjab, Pepsu, Rajasthan and Delhi, large areas of agricultural land were left behind by the Muslim evacuees. The Government of India have utilised this land and adopted other measures for rural rehabilitation of displaced persons from West Pakistan. Three distinct policies were followed, viz: (1) quasi-permanent allotment of evacuee agricultural land in the Punjab and Pepsu; (2) allotment of evacuee agricultural land on a temporary basis in other parts of India, especially in the States of Delhi and Rajasthan; and (3) allotment of culturable waste land reclaimed by the State Governments or the Central Tractor Organisation.

3. The first policy constituted the single largest measure of rehabilitation and was confined to displaced landowners from the West Punjab and those of Punjabi extraction from other parts of West Pakistan. These people had left behind 6.7 million acres, whereas the area left by the Muslim evacuees in the Punjab and Pepsu was only 4.7 million acres, or in terms of 'standard acres' 3.9 and 2.4 million acres respectively. This gap of nearly 1.5 million 'standard acres' was made up by applying graded cuts according to a slab system. A cut of 25 per cent was imposed on holdings up to 10 acres and higher cuts were applied to larger holdings, the highest being at the rate of 95 per cent in the case of holdings over 1,000 acres. The allotment was on a quasi-permanent basis. In all 2.4 million 'standard acres' were allotted to about half a million families.

4. The above scheme involved the displacement of 76,000 agriculturist families who had either been working as tenants of the Muslim evacuees or had settled temporarily on evacuee land immediately after partition, although they had left no land of their own in West Pakistan. Over 33,000 of them have already been

settled as tenants-at-will, and the Punjab and PEPsU Governments have promised to absorb the remainder also.

5. The second and third policies were designed primarily to accommodate non-Punjabi displaced agriculturists from West Pakistan. The area allotted to a family depended on its size and the quality of the land. In all, 57,500 families have been settled, the majority of them in Rajasthan. Early in 1951, allotments of land were offered to 12,645 non-Punjabi agriculturist families who were believed to be still unaccommodated. Only 4000 accepted the offer. It appears that most of the families had started earning some kind of a living and were unwilling to settle on unirrigated land.

6. The vast majority of displaced agriculturists from West Pakistan may, therefore, be regarded as having been resettled. Up to the end of 1951-52, nearly Rs. 8 crore had been given as loans for the purchase of bullocks, fodder, seeds and other agricultural equipment and for the repair and construction of houses and wells, etc., and for the maintenance of families for the first six months after the allotment of the land.

7. As regards displaced persons from East Pakistan, about 330,000 out of 470,000 rural families have already been settled on land in the eastern States and in occupations ancillary to agriculture and have been given financial assistance exceeding Rs. 8 crore. It is proposed to settle another 50,000 families during 1952-53 and 25,000 during 1953-54 at a further expenditure of about Rs. 10 crore. But for the recent influx, the resettlement of displaced persons from East Pakistan in the rural areas would have been practically completed by the end of 1953-54.

#### URBAN RESETTLEMENT

8. The problem of urban resettlement has been one of great complexity chiefly because of the difference in the occupational pattern between the incoming and outgoing population. This was especially marked in the case of displaced persons from West Pakistan. While the Muslim migrant from the Punjab, PEPsU, Delhi and elsewhere was generally a labourer or an artisan with a comparatively low standard of life, the incoming non-Muslim was often an industrialist, or a business or professional man, or a petty shopkeeper or one engaged in some kind of clerical work and used to much better conditions of living.

9. About 2.5 million displaced persons from West Pakistan required accommodation in urban areas. The Government, therefore, embarked upon an extensive building programme and up to March 1952, 150,000 houses and tenements had been built at a cost of Rs. 38 crore. Another 50,000 houses are proposed to be constructed at a cost of Rs. 21 crore during the next two years. This programme, when completed, will have provided accommodation for about one million displaced persons. Meanwhile about 1.5 million persons



have already found accommodation in evacuee houses. Thus, allowing for those families who have been able to make their own arrangements or who may do so in future, the housing problem of displaced persons from West Pakistan will have been substantially solved by the end of 1953-54.

9. While building activity on private account was promoted by granting sites and loans to displaced persons and co-operative societies, the bulk of the work in the western zone has been undertaken by the Government either departmentally or through special agencies, such as the Faridabad, Rajpura and Hastinapur Development Boards and the Sindhu Resettlement Corporation. Most of the new housing colonies are in the form of suburban extensions of existing cities and towns and are provided with urban amenities.

10. In addition, ten new townships have been planned and much progress has been made in their development. They are Faridabad, Nilokheri and Chandigarh in the Punjab, Rajpura and Tripuri in Pepsu, Sardarnagar and Ulhasnagar in Bombay, Gandhi Dham in Kutch and Gobindpuri and Hastinapur in Uttar Pradesh. It is expected that they will be completed by 1953-54 and will provide accommodation and gainful occupation for over four lakh people. The experiments at Nilokheri and Faridabad, which are based on the principle of self-help on a co-operative basis, are significant in themselves and, if successful, will be a stepping stone to further planning and development on a national scale.

11. Thus, no additional construction is likely to be necessary for displaced persons from West Pakistan after 1953-54. A sum of Rs. 4 crore will, however, be required to complete the development schemes in hand and to pay compensation for lands and barracks acquired for housing colonies or new townships.

12. In the eastern States emphasis was laid on private initiative. Displaced persons were, therefore, given developed plots and urban loans on a fairly large scale and the Government undertook only a limited building programme. About 9000 houses and tenements have been built by the Governments of West Bengal, Assam, Bihar and Orissa, and two new townships have been established at Fulia and Habra Baigachi. As conditions in the eastern States are still fluid, it is difficult to estimate the total number of persons for whom houses will have to be provided eventually. In the next two years it is proposed to build 95,000 units, 25 per cent of which will be built by the Government and the rest by displaced persons with Government aid. Up to the end of March 1952, the total expenditure incurred by the Government was Rs. 8.8 crore.

13. Employment has been found for displaced persons by providing service under the Government, by the allotment of business premises and industrial establishments, by the grant of loans for starting business and by imparting technical and vocational training. Financial assistance has also been granted for school and college education.

14. Up to the middle of 1952, the Employment Exchanges had found employment for 163,000 displaced persons from West Pakistan and 31,000 from East Pakistan. In addition, the Ministry of Home Affairs set up a special Transfer Bureau for the same purpose. The Ministry of Railways also reserved 15,000 vacancies for displaced persons. It is estimated that over 80,000 persons thus found employment.

15. A large proportion of the displaced persons from towns were employed in distributive trades before migration. It was felt that the younger generation among them should be trained for productive work. By the end of March 1952, about 52,000 persons from West Pakistan had completed their training in suitable vocations and crafts and 12,000 more are expected to be trained during the current financial year. Similarly, up to March 1952, 8,000 displaced persons from East Pakistan had been trained and 12,000 more will be trained during 1952-53.

16. Steps have been taken to extend educational facilities in the country by opening new schools and colleges and by increasing the capacity of the existing institutions. Since July 1951, freeship concessions have been extended up to the high school standard. Stipends and cash grants for books and stationery are also being given to deserving students.

17. A sum of Rs. 7.39 crore had been spent up to the end of March 1952 on the education and vocational and technical training of displaced persons from West Pakistan. It is proposed to spend Rs. 2.55 crore during 1952-53 and Rs. 1.9 crore during 1953-54. The corresponding figures for displaced persons from East Pakistan are Rs. 4.05, Rs. 0.98 and Rs. 1.56 crore.

18. The Government have also assisted displaced artisans, business and professional men by granting them small loans up to Rs. 5,000 each. The table below shows the amounts already advanced and to be advanced in the next two years :

<i>Rs. crores</i>				
		Up to March 1952	1952-53	1953-54
Displaced persons from West Pakistan	..	10.38	0.50	0.50
Displaced persons from East Pakistan	..	4.24	2.86	2.86

\*Up to March 1952, 158,000 displaced persons from West Pakistan and 44,000 from East Pakistan had received loans.

19. For large-scale business or industry, loans are advanced by the Rehabilitation Finance Administration. Up to March 1952, the Administration had sanctioned Rs. 8.25 crore in favour of 9,621 persons, of which Rs. 4.17 crore had been actually paid. During 1952-53, it proposes to disburse Rs. 2.05 crore and during 1953-54 Rs. 3 crore.

20. Financial assistance on this scale has helped to bring back to activity about 27,000 evacuee shops and 2,000 industrial establishments which have been allotted to displaced persons. In addition, 28,000 new shops and several markets have been built in various towns. In the new townships industries are being developed to provide employment and opportunities for individual enterprise.

#### OTHER REHABILITATION MEASURES

21. There are 74,000 destitute, old and infirm persons and unattached women and children who are being looked after by the Government in homes and infirmaries specially built for them. A number of non-official organisations, such as the Kasturba Gandhi National Memorial Trust, are helping the Government in this field.

22. Maintenance allowances up to a maximum of Rs. 100 a month are being given to nearly 16,000 displaced persons, who were formerly dependent on their incomes from immovable property in West Pakistan. So far Rs. 50 lakh have been spent on such allowances. The scheme is likely to continue until such time as compensation is awarded for immovable property left behind in West Pakistan.

23. A special board has also been set up for the rehabilitation of displaced Harijans. So far 8,800 Harijans have been found employment and accommodation in urban areas, in addition to 16,259 families who have been allotted land and granted rural loans.

#### EXPENDITURE

24. Up to March 1952, the Government had spent altogether Rs. 90.54 crore on displaced persons. It is proposed to spend Rs. 27.81 crore and Rs. 29.14 crore during 1952-53 and 1953-54 respectively. It is expected that the rehabilitation of displaced persons from West Pakistan will have been nearly completed by the end of 1953-54, and that, besides meeting commitments already accepted, only a few outstanding matters will need attention. For this Rs. 6.20 crore will be required. The situation in the eastern States is still unstable. It is not, therefore, possible to forecast the probable expenditure. If conditions remain normal, the present scale of annual expenditure, namely, about Rs. 11 crore is expected to suffice.

#### REHABILITATION AND DEVELOPMENT

25. The rehabilitation of 7.5 million displaced persons presents many special problems, but, viewed broadly, it has to be regarded as an essential aspect of the development of the economy of the country as a whole. The rehabilitation programme is an integral part of the Five Year Plan, but it has to be kept under constant review to meet, particularly, the changing situation in respect of displaced persons from East Pakistan.

## CHAPTER XXXIX

### EMPLOYMENT

The problem of finding employment for all able-bodied persons willing to work is common to all countries, though the causes and the extent of unemployment may differ. In India, as in other under-developed countries, unemployment arises mainly as a result of shortage of land, capital equipment and other resources. Though it may seem paradoxical, there is, on the one hand, a shortage of goods and services and, on the other, insufficient opportunities for employment and consequently a surplus labour force. The problem of employment in India is thus one of utilising surplus man-power for productive purposes, so as to increase the volume of goods and services in the country and to raise the standard of living all round.

2. To assess the magnitude of the problem in quantitative terms is not at present possible. The only published figures available are the registrations and placements at the employment exchanges ; but these exchanges are confined to the industrial towns and, even for industrial labour, registration is not compulsory. The figures derived from these exchanges are, therefore, inadequate even in regard to industrial unemployment and give no indication at all of unemployment in rural areas and of the disguised unemployment which is known to exist in most parts of the country. In spite of these serious limitations, the figures published by the employment exchange organisations confirm to some extent the general belief that unemployment has recently increased, particularly among the unskilled and clerical categories. The problem of unemployment is, of course, not a new one in India, though during the two world wars it had abated for a time. Its main causes have been the rapid growth of population, the disappearance of rural industries, and the inadequate development of non-agricultural occupations. Lately, the large displacement of population by partition has aggravated the situation.

#### UNEMPLOYMENT IN RURAL AREAS

3. One of the main objects of the Plan is to increase employment opportunities and to raise the standard of living of the masses. Foremost consideration is given to the rural sector on account of the magnitude of the problem there. Among the measures proposed to be taken in the Plan to reduce the incidence of rural unemployment, mention may be made of the major and minor irrigation works, large scale land reclamation schemes and the revival and development of village industries and handicrafts, all of which have found a central place in the rural development programmes because of the scope they offer for employing a large number of people. Two other measures, viz., the extension of mixed farming and the undertaking of public

works programmes in slack agricultural seasons require to be studied in relation to employment opportunities.

#### UNEMPLOYMENT IN URBAN AREAS

4. The problem of unemployment and under-employment in urban areas is equally acute. Owing to increasing pressure on the land, a large number of people move to the towns and cities to seek employment. There is thus a keen competition for unskilled jobs in the factories and in domestic service. Most of these occupations are generally overstaffed and wages are consequently extremely low. The difficulties faced by a number of smaller industries since the end of the war have aggravated the position. The solution of this unemployment problem lies to some extent in the extension of existing large-scale industries and the starting of new ones. Proposals have also been made in the Plan for assisting the existing small-scale industries and for starting new ones, especially such small industries as can be complementary to large-scale industries.

#### EFFECT OF THE PLAN ON EMPLOYMENT

5. The question has frequently been raised as to what would be the quantitative effect of the Plan on employment. To answer this question a large mass of statistical data would be necessary which at present simply do not exist. However, an attempt has been made to work out the effect of the Plan on employment in certain sectors of the economy and the resulting estimates, which are admittedly rough approximations and may prove wide of the mark, are given below for what they are worth.

	Additional employment per annum
1. Industry including small-scale industries .. .. .	4 lakhs
2. Major irrigation and power projects	2.5 "
3. Agriculture: Owing to additional area irrigated ..	14 "
Due to repairs to tanks	1.5 "
Due to land reclamation schemes ..	7.5 "
4. Building and construction ..	1 "
5. Roads .. .. .	2 "
6. Cottage industries .. .. .	20 lakhs plus 36 lakhs who will be provided with fuller employment
7. Tertiary sector (i.e., transport, banking and other services) and local works	There will be more employment here, but it is not possible to estimate it.

## EMPLOYMENT AMONG THE EDUCATED

6. Between the two wars, the problem of unemployment among the educated classes assumed serious proportions. The war temporarily relieved this unemployment by affording opportunities for service in the armed forces and in industries serving defence needs. But the end of the war brought the problem to the forefront again and partition aggravated it. The position as revealed by the employment exchange figures (the limitations of which have already been explained) shows a gradual deterioration over the last five years, especially among clerical personnel. This is confirmed by an *ad hoc* enquiry conducted last year by the Directorate General of Resettlement and Employment. It shows that of every 100 unemployed technical persons, 12 could be found employment, while for clerical jobs the vacancies were only four for every 100 persons who registered. Thus, while unemployment among technical personnel is serious enough, in the clerical grades it is at least thrice as bad.

7. The Plan lays emphasis on agricultural production and on creating at the same time a base for future industrial expansion. This limits the immediate prospect of employment opportunities for the unemployed among the educated. It is only when more rapid expansion of the industrial sector takes place that there will be a big increase in the avenues of employment for the educated classes. Nevertheless such short-term remedies as are possible must be adopted. The following measures are suggested:—

- (i) the pay offered to technical personnel, e.g., engineers and doctors, should be consistent with the cost of training. Inducements, such as subsidising of private dispensaries in villages, should be offered ;
- (ii) the usefulness to employers of certain degrees, e.g., in commerce, can be increased if the present theoretical knowledge imparted in colleges is supplemented by practical training ;
- (iii) educated persons should be persuaded to rid themselves of prejudice against manual employment and should be encouraged to receive sufficient training for manual jobs ;
- (iv) young persons without experience may be enabled to receive apprenticeship training. On the other hand, older people may find it difficult to get employment both in public and private service. Some reservation for such persons should be made in public service, while persuasion should be used with private employers to engage such people, especially those with families ;
- (v) vocational counselling and guidance services should be developed to advise young persons to choose vocations according to employment possibilities.

8. In addition to the above, the number of job seekers should be reduced. For bringing this about the following recommendations are made :—

- (1) educated people should be encouraged to set up independently in business. A list will be prepared of small-scale industries which can be started with various amounts of capital ranging from Rs. 500 to Rs. 5,000 and the Government should help them by advancing initial capital as well as by giving them facilities for vocational training. They should also be given facilities for obtaining raw materials and for disposing of their finished goods.
- (2) factory sites or built-up premises with necessary facilities, such as transport, supply of electricity, water, etc., should be provided on a rental basis for inexperienced small-scale manufacturers. This will promote the establishment of small and medium-sized factories in selected areas. Furthermore, private capital should be encouraged to help in building up "trading estates" with a view to reducing unemployment and bringing about a better distribution of industries.

## APPENDIX

### DEVELOPMENT EXPENDITURE UNDER THE PLAN

*Statement I—Development Expenditure of the Centre and the States.*

				<i>Rs. lakhs</i>				
Head	Total	Central Govern- ment	Part 'A' States	Part* 'B' States	Jammu and Kashmir	Part 'C' States		
<b>I. Agriculture and community development—</b>								
Agriculture .. .. .	18,422.2	5,922.2	9,108.2	2,771.0	22.1	598.7		
Veterinary and animal husbandry including dairying .. .. .	2,228.5	412.0	1,524.6	197.9	15.0	79.0		
Forests .. .. .	1,169.5	200.0	599.8	224.7	10.0	135.0		
Co-operation .. .. .	711.2	50.0	491.7	125.2	..	44.3		
Fisheries .. .. .	464.1	50.5	332.5	72.9	..	8.2		
Rural development .. .. .	1,047.1	..	674.4	372.2	..	0.5		
Community Projects .. .. .	9,000.0	9,000.0	..	..	..	..		
Local works .. .. .	1,500.0	1,500.0	..	..	..	..		
Programme for scarcity affected areas .. .. .	1,500.0	1,500.0	..	..	..	..		
Total .. .. .	36,042.6	18,634.7	12,731.2	3,763.9	47.1	865.7		
<b>II. Irrigation and power—</b>								
Multi-purpose projects .. .. .	26,590.0	26,590.0	..	..	..	..		
Irrigation projects .. .. .	16,796.5	..	11,234.3	5,013.2	366.7	182.3		
Power projects .. .. .	12,754.0	..	9,374.7	3,135.5	74.9	168.9		
Total .. .. .	56,140.5	26,590.0	20,609.0	8,148.7	441.6	351.2		

\*Other than Jammu & Kashmir.



Statement I—Development Expenditure of the Centre and the States—Continued.

Rs. crores.

Head	Total	Central Government	Part 'A' States	Part 'B' States	Jammu and Kashmir	Part 'C' States
<b>III. Transport and communications—</b>						
Railways*	25,000.0	25,000.0	..	..	..	..
Roads .. .. .	10,887.8	3,124.0	5,059.2	1,582.8	494.4	627.4
Road transport .. .. .	896.9	..	562.4	96.0	..	238.5
Shipping .. .. .	1,805.8	1,805.8	..	..	..	..
Civil Aviation .. .. .	2,287.0	2,287.0	..	..	..	..
Ports and harbours .. .. .	3,308.8	3,206.4	26.0	63.0	..	13.4
Inland water transport .. .. .	10.0	10.0	..	..	..	..
Posts and Telegraphs .. .. .	5,000.0	5,000.0	..	..	..	..
Broadcasting .. .. .	352.0	352.0	..	..	..	..
Overseas communications .. .. .	100.0	100.0	..	..	..	..
Meteorological department .. .. .	62.0	62.0	..	..	..	..
<b>Total .. .. .</b>	<b>49,710.3</b>	<b>40,947.2</b>	<b>5,647.6</b>	<b>1,741.8</b>	<b>494.4</b>	<b>879.3</b>
<b>IV. Industry—</b>						
Large-scale industries .. .. .	14,033.2	12,604.3**	1,025.8	352.5	50.6	..
Cottage and small-scale industries .. .. .	2,704.1	1,500.0	764.9	356.9	31.2	51.1
Scientific and industrial research .. .. .	461.0	461.0	..	..	..	..
Mineral development .. .. .	106.1	106.1	..	..	..	..
<b>Total .. .. .</b>	<b>17,304.4</b>	<b>14,671.4</b>	<b>1,790.7</b>	<b>709.4</b>	<b>81.8</b>	<b>51.1</b>

\*The outlay of Rs. 250 crore is exclusive of the estimated expenditure of Rs. 150 crore to cover the depreciation of assets during the period of the Plan.

\*\*Includes lump-sum provision of Rs. 50 crore for basic industries and ancillary transport a programme for organising mineral exports is also to be financed from this provision.

Statement I—Development Expenditure of the Centre and the States—Continued

Rs. crores

Head	Total	Central Government	Part 'A' States	Part 'B' States	Jammu and Kashmir	Part 'C' States
<b>V. Social Services—</b>						
Education .. .. .	15,545.2	3,901.6	9,860.1	1,227.4	46.0	510.1
Health .. .. .	9,954.6	1,787.4	6,350.3	1,238.1	128.2	450.6
Housing .. .. .	4,881.6	3,850.0	877.1	87.5	12.0	55.0
Labour and labour welfare .. .. .	712.6	397.3	294.0	20.3	..	1.0
Welfare of backward classes and scheduled castes and tribes.	2,887.2*	700.0	1,848.1	316.6	..	22.5
<b>Total .. .. .</b>	<b>33,981.2</b>	<b>10,636.3</b>	<b>19,229.6</b>	<b>2,889.9</b>	<b>186.2</b>	<b>1,039.2</b>
<b>VI. Rehabilitation .. .. .</b>	<b>8,500.0</b>	<b>8,500.0</b>	<b>..</b>	<b>..</b>	<b>..</b>	<b>..</b>
<b>VII. Works and buildings .. .. .</b>	<b>1,102.3</b>	<b>1,102.3</b>	<b>..</b>	<b>..</b>	<b>..</b>	<b>..</b>
<b>VIII. Finance Ministry schemes. .. .. .</b>	<b>439.6</b>	<b>439.6</b>	<b>..</b>	<b>..</b>	<b>..</b>	<b>..</b>
<b>IX. North-east Frontier Agency .. .. .</b>	<b>300.0</b>	<b>300.0</b>	<b>..</b>	<b>..</b>	<b>..</b>	<b>..</b>
<b>X. Andamans .. .. .</b>	<b>382.8</b>	<b>382.8</b>	<b>..</b>	<b>..</b>	<b>..</b>	<b>..</b>
<b>XI. Loans to corporations. .. .. .</b>	<b>1,200.0</b>	<b>1,200.0</b>	<b>..</b>	<b>..</b>	<b>..</b>	<b>..</b>
<b>XII. Miscellaneous .. .. .</b>	<b>1,774.4</b>	<b>650.0</b>	<b>1,003.5</b>	<b>72.0</b>	<b>48.9</b>	<b>..</b>
<b>Grand Total .. .. .</b>	<b>2,06,878.1</b>	<b>1,24,054.3</b>	<b>61,011.6</b>	<b>17,325.7</b>	<b>1,300.0</b>	<b>3,186.5</b>

\*This includes Central grants amounting to Rs. 3 crore ; in addition, about Rs. 9 crore are likely to be available by way of grants by the Central Government under Article 275(1) of the Constitution.

Statement II—Development expenditure of Part 'A' States

Rs. lakhs

Head	Assam	Bihar	Bombay	Madhya Pradesh	Madras	Orissa	Punjab	Uttar Pradesh	West Bengal	Total
<b>I. Agricultural and Rural Development—</b>										
Agriculture ..	276.1	1284.3	1748.4	1005.5	1593.7	205.5	210.7	2095.9	688.1	9108.2
Animal husbandry ..	12.5	92.5	166.9	98.8	100.0	52.8	22.0	134.1	74.7	754.3
Dairying and milk supply ..	..	1.5	602.1	36.9	50.0	9.2	..	20.6	50.0	770.3
Forests ..	36.3	125.0	83.8	40.8	38.8	13.1	18.0	165.2	78.8	599.8
Co-operation ..	29.3	39.0	123.2	28.8	100.0	28.9	11.8	130.7	..	491.7
Fisheries ..	6.0	10.6	16.0	5.8	100.0	33.4	..	6.2	154.5	332.5
Rural development ..	39.3	124.7	131.5	165.9	200.0	10.0	..	..	3.0	674.4
<b>Total ..</b>	<b>399.5</b>	<b>1677.6</b>	<b>2871.9</b>	<b>1382.5</b>	<b>2182.5</b>	<b>352.9</b>	<b>262.5</b>	<b>2552.7</b>	<b>1049.1</b>	<b>12731.2</b>
<b>II. Major Irrigation and Power Projects—</b>										
Multi-purpose projects ..	..	..	..	..	..	..	..	..	..	..
Irrigation projects ..	200.0	973.3	2269.0	308.0	3408.0	300.0	326.2	1912.0	1537.8	11234.3
Power projects ..	83.0	708.7	1043.0	600.0	5024.0	391.0	38.2	1411.0	75.8	9374.7
<b>Total ..</b>	<b>283.0</b>	<b>1682.0</b>	<b>3312.0</b>	<b>908.0</b>	<b>8432.0</b>	<b>691.0</b>	<b>364.4</b>	<b>3323.0</b>	<b>1613.6</b>	<b>20609.0</b>

Statement II—Continued.

<b>III. Industry—</b>											
Cottage industries	..	25.0	59.2	103.1	9.2	116.9	27.6	48.1	301.5	74.3	764.9
Other industries	..	..	60.0	250.6	226.2	85.1	65.3	15.5	280.7	42.4	1025.8
<b>Total</b>	..	<b>25.0</b>	<b>119.2</b>	<b>353.7</b>	<b>235.4</b>	<b>202.0</b>	<b>92.9</b>	<b>63.6</b>	<b>582.2</b>	<b>116.7</b>	<b>1790.7</b>
<b>IV. Transport—</b>											
Roads	..	213.0	800.0	1163.6	200.0	500.0	200.0	75.1	522.4	1385.1	5059.2
Road transport	..	31.9	..	200.0	..	..	20.0	..	120.0	190.5	562.4
Ports and harbours	..	..	..	25.0	..	..	1.0	..	..	..	26.0
<b>Total</b>	..	<b>244.9</b>	<b>800.0</b>	<b>1388.6</b>	<b>200.0</b>	<b>500.0</b>	<b>221.0</b>	<b>75.1</b>	<b>642.4</b>	<b>1575.6</b>	<b>5647.6</b>
<b>V. Social Services—</b>											
Education	..	89.9	570.4	4611.1	1079.3	800.0	179.5	118.0	1603.8	808.1	9860.1
Medical	..	173.5	403.9	536.4	267.9	300.0	78.7	73.9	349.8	1210.2	3394.3
Public health	..	17.8	196.0	1116.7	78.2	900.0	46.4	50.1	246.1	304.7	2956.0
Housing	..	..	100.0	77.2	20.0	300.0	..	11.3	145.2	223.4	877.1
Labour and labour welfare	..	6.0	20.0	162.3	0.5	..	1.9	1.8	101.5	..	294.0
Welfare of backward classes	..	509.6	160.0	213.6	136.4	467.6	116.4	..	236.2	8.3	1848.1
<b>Total</b>	..	<b>796.8</b>	<b>1450.3</b>	<b>6717.3</b>	<b>1582.3</b>	<b>2767.6</b>	<b>422.9</b>	<b>255.1</b>	<b>2682.6</b>	<b>2554.7</b>	<b>19229.6</b>
<b>VI. Miscellaneous</b>	..	..	..	..	..	..	3.5	1000.0	..	..	1003.5
<b>Grand Total</b>	..	<b>1749.2</b>	<b>5729.1</b>	<b>14643.5</b>	<b>4308.2</b>	<b>14084.1</b>	<b>1784.2</b>	<b>2020.7</b>	<b>9782.9</b>	<b>6909.7</b>	<b>61011.6</b>

*Statement III—Development expenditure of Part 'B' States*

	<i>Rs. lakhs</i>								
Head	Hyder- abad	Madhya Bharat	Mysore	Pepsu	Rajas- than	Saurash- tra	Travan- core- Cochin	Total	Jammu and Kashmir
<i>I—Agriculture and Rural Development—</i>									
1. Agriculture ..	346.4	750.0	443.0	364.9	109.2	212.4	545.1	2771.0	22.1
2. Animal husbandry ..	49.6	50.0	53.8	10.0	18.3	10.4	2.5	194.6	15.0
3. Dairying and milk supply	1.7	..	..	..	..	1.6	..	3.3	..
4. Forests ..	21.4	50.0	8.3	43.6	21.8	19.6	60.0	244.7	10.0
5. Co-operation ..	35.3	25.0	7.1	15.0	3.0	31.8	8.0	125.2	..
6. Fisheries ..	8.6	10.0	2.2	2.4	..	34.7	15.0	72.9	..
7. Rural development ..	..	60.0	81.1	..	15.0	216.1	..	372.2	..
Total ..	483.0	945.0	595.5	435.9	167.3	526.6	630.6	3763.9	47.1
<i>II—Major Irrigation and Power Projects—</i>									
1. Multi-purpose projects ..	..	..	..	..	..	..	..	..	..
2. Irrigation projects ..	2479.0	328.0	716.0	34.0	503.6	474.6	478.0	5013.2	366.7
3. Power projects ..	320.6	228.0	1268.0	30.6	40.8	212.5	1035.0	3135.5	74.9
Total ..	2799.6	556.0	1984.0	64.6	544.4	687.1	1513.0	8148.7	441.6

*Statement III—Continued*

**III—Industry—**

1. Cottage industries	..	25.7	50.0	135.4	4.4	38.5	13.9	89.0	356.9	31.2
2. Other industries	..	268.7	5.0	34.8	27.3	..	0.9	15.8	352.5	50.6
<b>Total</b>	..	294.4	55.0	170.2	31.7	38.5	14.8	104.8	709.4	81.8

**IV—Transport—**

1. Roads	..	128.6	189.0	320.1	95.1	400.0	300.0	150.0	1582.8	494.4
2. Road transport	..	..	..	..	..	1.0	53.0	42.0	96.0	..
3. Ports and harbours	..	..	..	..	..	..	33.0	30.0	63.0	..
<b>Total</b>	..	128.6	189.0	320.1	95.1	401.0	386.0	222.0	1741.8	494.4

**V—Social Services—**

1. Education	..	263.5	200.0	225.6	89.9	263.5	164.9	20.0	1227.4	46.0
2. Medical	..	117.7	77.0	56.5	56.0	82.0	71.5	120.0	580.7	46.0
3. Public health	..	88.2	121.2	158.3	29.0	135.5	73.7	51.5	657.4	82.2
4. Housing	..	..	14.4	50.0	2.0	2.0	9.1	10.0	87.5	12.0
5. Labour and labour welfare	..	..	4.4	..	..	5.0	10.9	..	20.3	..
6. Welfare of backward classes	..	..	80.0	100.0	10.0	42.2	24.4	60.0	316.6	..
<b>Total</b>	..	469.4	497.0	590.4	186.9	530.2	354.5	261.5	2889.9	186.2

**VI.—Miscellaneous**

	..	..	..	..	..	..	72.0	..	72.0	48.9
<b>Grand Total</b>	..	4155.0	2242.0	3660.2	814.2	1681.4	2041.0	2731.9	17325.7	1300.0

Statement IV—Development expenditure of Part 'C' States

Rs. lakhs

Head	Ajmer	Bhopal	Bilaspur	Goorg	Delhi	Hima- chal Pradesh	Kutch	Mani- pur	Tripura	Vindhya Pradesh	Total
<b>I—Agriculture and Rural develop- ment—</b>											
Agriculture	48.4	173.0	7.0	..	63.6	28.0	60.6	0.8	12.6	204.7	598.7
Animal hus- bandry ..	9.6	7.0	1.1	..	9.4	22.4	3.9	2.5	2.8	12.9	71.6
Milk supply	..	..	..	1.0	4.9	..	..	..	..	1.5	7.4
Forests ..	10.6	20.0	5.0	..	2.2	59.0	1.4	3.0	11.3	22.5	135.0
Co-operation	8.4	5.0	..	2.0	6.3	15.0	3.5	..	1.1	3.0	44.3
Fisheries ..	..	2.0	..	..	2.6	1.0	1.4	..	..	1.2	8.2
Rural develop- ment ..	..	..	0.5	..	..	..	..	..	..	..	0.5
<b>Total ..</b>	<b>77.0</b>	<b>207.0</b>	<b>13.6</b>	<b>3.0</b>	<b>89.0</b>	<b>125.4</b>	<b>70.8</b>	<b>6.3</b>	<b>27.8</b>	<b>245.8</b>	<b>865.7</b>
<b>II—Major Irriga- tion and Power Projects—</b>											
Irrigation pro- jects ..	11.3	..	..	..	..	80.0	91.0	..	..	..	182.3
Power projects	..	27.9	..	35.0	..	13.5	23.0	12.0	7.0	50.5	168.9
<b>Total ..</b>	<b>11.3</b>	<b>27.9</b>	<b>..</b>	<b>35.0</b>	<b>..</b>	<b>93.5</b>	<b>114.0</b>	<b>12.0</b>	<b>7.0</b>	<b>50.5</b>	<b>351.2</b>

Statement IV—Continued

<b>III—Industry—</b>											
Cottage industries .. ..	..	5.0	0.5	..	7.3	23.0	3.5	..	5.8	6.0	51.1
Other industries .. ..	..	..	..	..	..	..	..	..	..	..	..
<b>Total .. ..</b>	<b>..</b>	<b>5.0</b>	<b>0.5</b>	<b>..</b>	<b>7.3</b>	<b>23.0</b>	<b>3.5</b>	<b>..</b>	<b>5.8</b>	<b>6.0</b>	<b>51.1</b>
<b>IV—Transport—</b>											
Roads .. ..	15.9	40.0	23.0	20.0	25.0	110.0	58.3	81.3	128.0	125.9	627.4
Road transport .. ..	..	..	2.0	..	216.0	10.0	..	10.5	..	..	238.5
Ports and harbours .. ..	..	..	..	..	..	..	13.4	..	..	..	13.4
<b>Total .. ..</b>	<b>15.9</b>	<b>40.0</b>	<b>25.0</b>	<b>20.0</b>	<b>241.0</b>	<b>120.0</b>	<b>71.7</b>	<b>91.8</b>	<b>128.0</b>	<b>125.9</b>	<b>879.3</b>
<b>V—Social Services</b>											
Education .. ..	15.0	30.0	10.0	10.0	259.8	36.8	6.8	17.7	24.0	100.0	510.1
Medical .. ..	31.9	25.0	4.0	5.0	58.9	18.1	26.0	6.0	11.7	36.0	222.6
Public health .. ..	6.1	50.0	4.0	..	36.0	37.9	10.0	21.0	3.0	60.0	228.0
Housing .. ..	..	..	..	..	55.0	..	..	..	..	..	55.0
Labour and labour welfare .. ..	..	..	..	..	1.0	..	..	..	..	..	1.0
Welfare of backward classes .. ..	..	5.0	..	..	..	..	2.5	..	..	15.0	22.5
<b>Total .. ..</b>	<b>53.0</b>	<b>110.0</b>	<b>18.0</b>	<b>15.0</b>	<b>410.7</b>	<b>92.8</b>	<b>45.3</b>	<b>44.7</b>	<b>38.7</b>	<b>211.0</b>	<b>1039.2</b>
<b>Grand Total</b>	<b>157.2</b>	<b>389.9</b>	<b>57.1</b>	<b>73.0</b>	<b>748.0</b>	<b>454.7</b>	<b>305.3</b>	<b>154.8</b>	<b>207.3</b>	<b>639.2</b>	<b>3186.5</b>

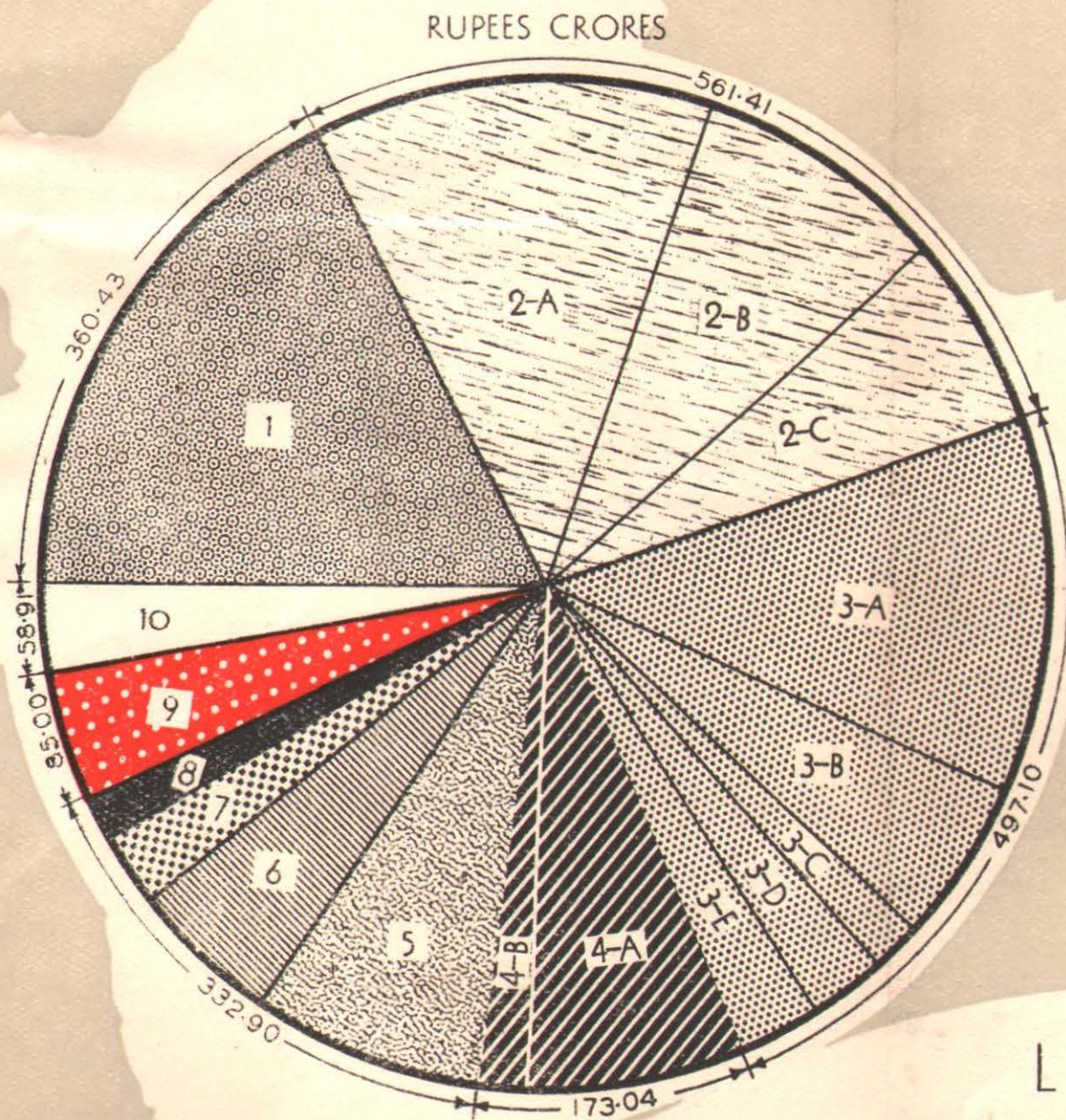


**National Printing Works, Delhi.**



# THE FIRST FIVE YEAR PLAN

## DEVELOPMENT EXPENDITURE OF CENTRAL & STATE GOVERNMENTS.



### LEGEND

1. AGRICULTURE AND RURAL DEVELOPMENT . . . . .		4. INDUSTRY	
2. IRRIGATION AND POWER		A. LARGE SCALE INDUSTRIES	
A. MULTIPURPOSE PROJECTS . . . . .		B. COTTAGE & SMALL SCALE INDUSTRIES . . . . .	
B. IRRIGATION PROJECTS . . . . .		5. EDUCATION . . . . .	
C. POWER PROJECTS . . . . .		6. HEALTH . . . . .	
3. TRANSPORT AND COMMUNICATION		7. HOUSING . . . . .	
A. RAILWAYS . . . . .		8. WELFARE OF BACKWARD CLASSES, SCHEDULED CASTES AND TRIBES . . . . .	
B. ROADS . . . . .		9. REHABILITATION . . . . .	
C. PORTS & HARBOURS . . . . .		10. OTHER EXPENDITURE . . . . .	
D. POSTS & TELEGRAPHS . . . . .			
E. OTHERS . . . . .			

TOTAL EXPENDITURE OF CENTRE & STATES 2069 CRORES.

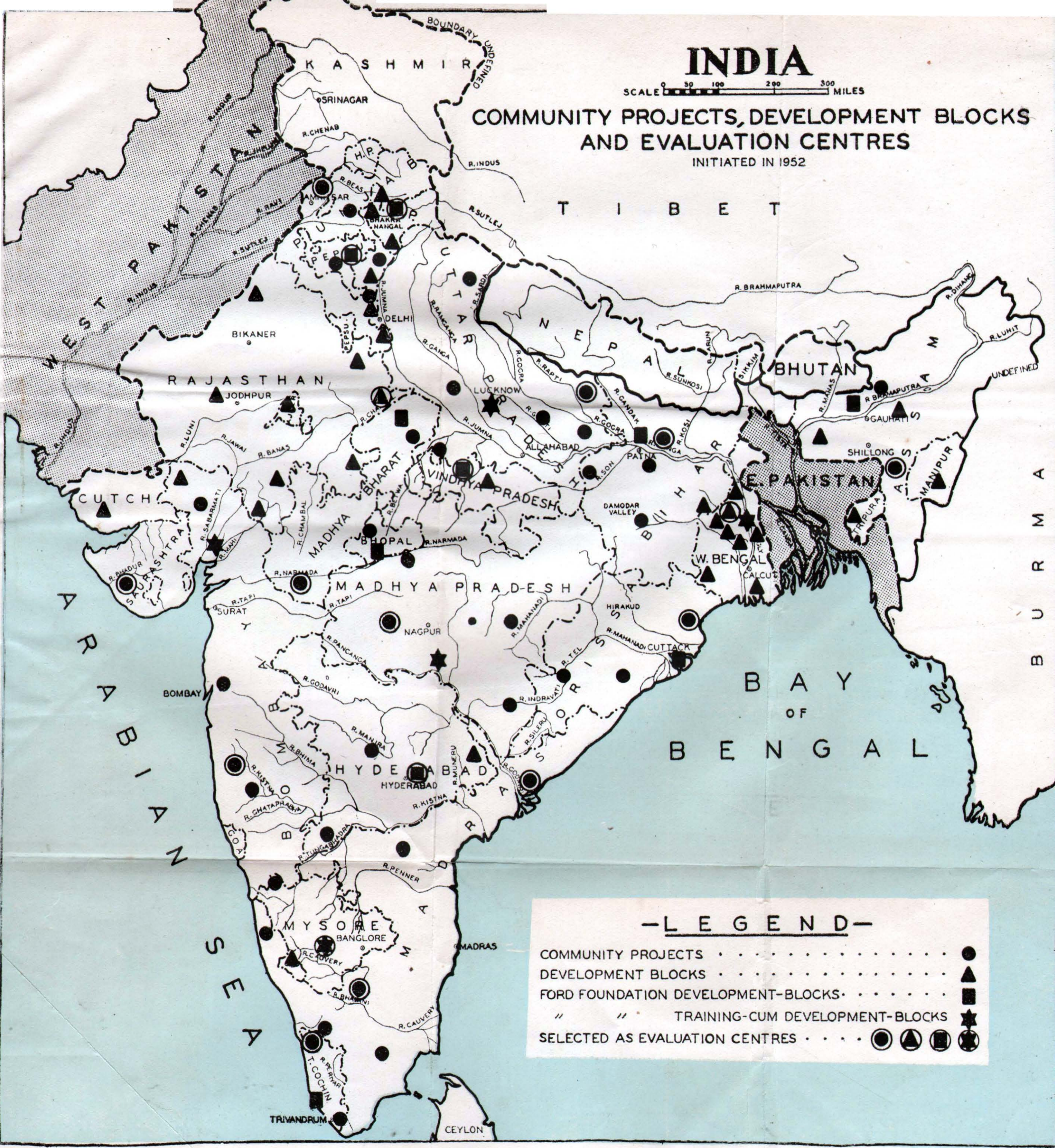


# INDIA

SCALE 0 50 100 200 300 MILES

## COMMUNITY PROJECTS, DEVELOPMENT BLOCKS AND EVALUATION CENTRES

INITIATED IN 1952



### -LEGEND-

- COMMUNITY PROJECTS . . . . . ●
- DEVELOPMENT BLOCKS . . . . . ▲
- FORD FOUNDATION DEVELOPMENT-BLOCKS . . . . . ■
- " " TRAINING-CUM DEVELOPMENT-BLOCKS . . . . . ★
- SELECTED AS EVALUATION CENTRES . . . . . ○▲■●



# INDIA

SCALE 0 50 100 200 300 MILES

## MAJOR IRRIGATION AND POWER PROJECTS



### MAJOR IRRIGATION & POWER PROJECTS INCLUDED IN THE FIVE YEAR PLAN

- CENTRAL GOVERNMENT**
1. DAMODAR VALLEY PROJECTS I.P.
  2. HIRAKUD DAM I.P.
  3. BHAKRA NANGAL I.P.
  4. HARIKE I.P.
- STATE PROJECTS**
- ASSAM**
5. UMTRU HYDRO-ELECTRIC PROJECT P
- BIHAR**
6. THERMAL POWER STATION SCHEME IN NORTH BIHAR P
- BOMBAY**
7. GANGAPUR I
  8. GHATAPRABHA LEFT BANK CANAL I
  9. MAHI LEFT BANK CANAL I
  10. LOWER TAPTI VALLEY (STAGE I) I
  11. JOG DISTRIBUTION SCHEME P
  12. CHOLA POWER STATION P
  13. RADHANAGARI HYDRO-ELECTRIC PROJECT P
- GUJARAT**
14. DUDHWA I
  15. SIX MEDIUM IRRIGATION SCHEMES I
  16. CENTRAL POWER STATION (NAGPUR) P
  17. AKHOLA POWER DISTRIBUTION P
  18. LOWER BHAVANI I
  19. MALAMPUZHA I
  20. METTUR CANAL I
  21. MANIMUTHAR I
  22. BHAIKAVANITIPPA I
  23. UPPER PENNAR I
  24. WALAYAR I
  25. TUNGABHADRA I.P.
  26. MOYAR HYDRO ELECTRIC SCHEME P
  27. PYKARA III STAGE EXTENSION P
  28. MACHKUND HYDEL SCHEME P
  29. MACHKUND TRANSMISSION LINES AND SUBSTATIONS P
  30. MADRAS PLANT EXTENSIONS P
  31. PAPANASAM II STAGE EXTENSION P
  32. NELLORE THERMAL SCHEME P
- MADHYA PRADESH**
33. EASTERN AREA POWER STATIONS P
  34. MOHAMMADPUR STATION P
  35. PATHRI POWER HOUSE P
  36. KANPUR ELECTRIC SUPPLY ADMINISTRATION P
  37. SARDA POWER HOUSE P
  38. MAYURAKSHI PROJECT I.P.
- WEST BENGAL**
38. MAYURAKSHI PROJECT I.P.
  39. GODAVARI I PHASE I
  40. RAJOLIBUNDA I
  41. RAMAGUNDAM THERMAL P
  42. NIZAMSAGAR HYDRO-ELECTRIC SCHEME P
  43. CENTRAL POWER HOUSE INDORE P
  44. LAKKAVALLI STAGE I (BHADRA PROJECT) I
  45. TUNGA ANICUT I
  46. NEGU RESERVOIR I
  47. SHIMSHA EXTENSION P
- HYDERABAD**
39. GODAVARI I PHASE I
  40. RAJOLIBUNDA I
  41. RAMAGUNDAM THERMAL P
  42. NIZAMSAGAR HYDRO-ELECTRIC SCHEME P
- MYSORE**
44. LAKKAVALLI STAGE I (BHADRA PROJECT) I
  45. TUNGA ANICUT I
  46. NEGU RESERVOIR I
  47. SHIMSHA EXTENSION P
- TRAVANCORE-COCHIN**
51. CHALAKUDY I
  52. PEECHI I
  53. NEYYAR I
  54. PALLIVASAL II STAGE P
  55. PORINGALKATHU LEFT BANK P
  56. SENGULAM HYDEL P
  57. SINDH VALLEY PROJECT I.P.
- RAJASTHAN**
48. JAWAI PROJECT I
- GUJARAT**
49. BRAHMANI I
  50. MACHHU I
- MAHARASHTRA**
51. CHALAKUDY I
  52. PEECHI I
  53. NEYYAR I
  54. PALLIVASAL II STAGE P
  55. PORINGALKATHU LEFT BANK P
  56. SENGULAM HYDEL P
  57. SINDH VALLEY PROJECT I.P.
- WEST BENGAL**
58. KOSI I.P.
  59. KOYNA I.P.
  60. KRISHNA VALLEY SCHEMES I.P.
  61. RIHAND I.P.
  61. CHAMBAL I.P.
- LEGEND**
- IRRIGATION PROJECTS · · I. ▲
  - POWER PROJECTS · · · P. ●
  - IRRIGATION & POWER · · I.P. ▲●
- PROJECTS TO BE INITIATED IN THE PERIOD OF THE PLAN**