

The total amount of the working capital needed by the end of the plan for holding stocks of materials and meeting other requirements is estimated to be about Rs. 65 crores, which includes Rs. 30 crores, for Khadi and village industries, Rs. 17 crores for hand-loom and Rs. 10 crores for small-scale industries. These are very rough estimates. The Reserve Bank of India is now able and willing to assist in providing short-term and even medium-term finance for cottage and small-scale industries through the appropriate cooperative agencies. As early as possible the bulk of the working capital needed should come from cooperative and other banking agencies and it is important that organisationally in the field of operations of each Board action should be directed towards this objective. During the intervening period of course, it will be necessary for Government to meet the needs of working capital especially for production organised through cooperatives and registered public institutions.

9. While a great deal of initiative and guidance have to come from the Ministries and the Boards, it is necessary to emphasise that the development of village and small industries is a task to be undertaken by the States in the main at the district and area level and in the closest integration with other development programmes. The Village and Small Scale Industries Committee took care to point out that the programme which they outlined was so much a part of the normal activities of planning, finance and administration that it could not for long be dissociated from the normal administrative arrangements for carrying out the plan. In the States they recommended self-contained departments looking after all the problems of village and small industries, closely linked to the State cooperative agency, and supported at the district level by at least one whole-time officer. The latter would be concerned with the administrative and organisational functions within the district for the group of programmes falling under village and small industries. At present in many States, the available organisation, technical and administrative is weak at the State level. At the district level it is scarcely equipped to undertake the responsibilities envisaged in the second five year plan. In fact the stage has reached when each state has to build for itself, in association with the national extension movement, an efficient organisation for village and small industries, which can operate directly in small towns as well as in rural areas.

10. The process of building up this ground organisation would be expedited if, by way of a first step, as recommended by the Village and Small Scale Industries Committee, an appropriate coordinating committee including the chairman of all the Boards is constituted in the near future with a view to assisting in coordination in policy, finance and administration over the entire field comprised in the

village and small industries programme. The programmes of development contemplated by the various Boards prior to the report of the Village and Small Scale Industries Committee may now be reviewed by them in the light of the Committee's recommendations, decisions taken by the Central Government on any policy questions that bear on the programmes, and the allocations by industries for the period of the second plan. This has to be done as a matter of some urgency. Schemes for the development of village and small industries included in the plans of States follow generally the priorities indicated in the past by the Boards and the pattern of assistance formulated by them. But both these aspects have to be looked at afresh by the Boards and the Ministries concerned and the Planning Commission so that clear guidance should become available to the States as to the lines on which the proposals included by them in their revised plans might need to be amended to conform to the priorities and the pattern of assistance approved for the second five year plan. Since a review may be undertaken it is unnecessary in this Draft Outline to describe in detail the programmes of the various Boards or to refer to the observations and suggestions made in respect of them by the Village and Small Scale Industries Committee. It may be useful, however, to touch briefly upon three general questions which bear at present on the implementation of programmes for village and small industries. These are:

- (1) techniques for the implementation of common production programmes for related large and small industries,
- (2) the place of cooperatives in the programme for village and small industries, and
- (3) industrial estates.

Action taken to give a measure of protection to small industries or to organise cooperatives or to establish industrial estates is intended to facilitate positive measures of assistance to artisans and small industrial units. During the past three years a considerable amount of attention has been given to this aspect in their respective fields by the various Boards. A study of the measures taken and their effectiveness in strengthening the economic position of the small unit is being undertaken with a view to formulating suggestions for the second five year plan.

TECHNIQUES IN COMMON PRODUCTION PROGRAMMES

11. The description 'common production programme' was suggested in the First Five Year Plan as a convenient way of expressing the desirability in each branch of industry, of considering together the respective contributions which large and small units should make towards the total requirements of the community and the measures

which should be taken to enable small industries to fulfil the targets proposed for them. These measures fall broadly into two groups, namely, (1) those intended to provide a degree of preference or assurance of a market for small units, and (2) those intended to provide positive assistance through supply of raw materials, technical guidance, financial assistance, training, research, organisation of marketing, etc. Both sets of measures are equally important and, indeed, from a wider standpoint it is the expectation of success over a period of the second group of measures which affords a special justification for restrictions and other similar devices.

12. In the First Five Year Plan, with reference to large units in an industry, it was suggested that one or more of three main steps might be needed:

- (1) reservation or demarcation of spheres of production,
- (2) non-expansion of the capacity of a large-scale industry, and
- (3) imposition of a cess on a large-scale industry.

While the second and the third of these proposals have their main applications on behalf of traditional village industries, reservation or demarcation of spheres of production was thought of more especially in the context of small-scale units using power and machinery. These units were classified in the First Five Year Plan into three categories, namely:

- (1) those in which small-scale production has certain advantages and is not affected by large-scale industry to any great extent,
- (2) those in which small-scale industry is concerned with the manufacture of certain parts or with certain stages of production in a manufacturing process in which the predominant role is that of large-scale industry, and
- (3) those in which small-scale industry has to meet the competition of the corresponding large-scale industry.

For building up a decentralised sector in modern industry, within the limits of technical possibilities, demarcation of spheres of production is a source of material assistance to small units which are either competitive to large units in the manufacture of particular articles or should be integrated with large units in terms of stages of production or manufacture of ancillary parts. This approach has to be adopted in appropriate fields whether the large units are in the public sector or in the private sector.

13. Proposals for non-expansion of the capacity of a large-scale industry have to be considered from two different points of view.

The first is the extent to which such a measure would enlarge the market for small units. It may sometimes be that for lack of organisation or other similar reasons advantage may not be taken of even the existing market or the additional market which the limitation of expansion of large units may provide. The second aspect to consider is that a given volume of production of a commodity may be required in the economy. In this connection the likely trends of future demand are specially relevant during a period of development involving considerable public and private outlay. Within the limits set by the need to avoid shortage of goods on the one hand, and the extent to which production in small units can be organised effectively to take advantage of a larger market, in any individual case, the balance of public advantage will determine whether and at what level the capacity of a large-scale industry should be limited. In applying the policy there is need for review from time to time in the light of changing economic conditions. Licensing of industries should therefore be extended to the field of agricultural processing, especially for rice mills, oil mills, flour mills, etc. In this connection reference may be made to two proposals for limiting expansion which bear on the field of village industry and are at present under examination.

To encourage handpounding of rice the Village and Small Scale Industries Committee has recommended that new sheller or combined sheller-huller mills or huller mills or single hullers should not be allowed to be set up and no increase in production above the present level should be permitted during the plan period, except when handpounding cannot be suitably organised, for instance, where labour is scarce or supply to a new industrial area has to be arranged. In this connection the recommendations of the Rice Milling Committee are also under consideration. In respect of the village oil industry, the conditions in this industry are being investigated by a special committee appointed by the Central Government and the committee's findings are awaited.

14. The objects in imposing a cess or an excise duty on the production of a large industry are, as the Village and Small Scale Industries Committee have pointed out, firstly, to raise funds from the consumers of a product; secondly, to take away a portion of the additional profits accruing to large units in consequence of a limit on expansion of capacity; and thirdly, to provide for a limited price differential in favour of small units. The imposition of a cess or an excise duty in appropriate situations is a well-recognised fiscal device and each case has to be considered on its merits. The question of subsidies which are sometimes proposed raises issues of a different character. The Village and Small Scale Industries Committee has

not expressed itself in favour of new measures for introducing subsidies on production or rebates on sales. The cost of schemes of protection afforded to any activity, the Committee remarks, should be readily measurable and all schemes of protection for normal economic activity should be so planned that they can ultimately be withdrawn. There are a few limited exceptions which the Committee has suggested, as, for instance, the proposal for a small subsidy for improved equipment in handpounding of rice. In the proposals of the Village and Small Scale Industries Committee, for all the village industries taken together, the total amount of production subsidy envisaged is estimated to be about Rs. 8 crores. Rebates on the sale of handloom and khadi are estimated to involve expenditure respectively of about Rs. 20 crores and Rs. 7 crores.

15. The case of the Ambar Charkha stands on a different plane, the issue here being that the use of the Ambar Charkha and the introduction of decentralised spinning on a large scale will make possible additions to full-time rural employment on such a substantial scale as to justify the expenditure which may be involved during the period of the plan. The technical and economic factors connected with this proposal are under investigation and recently a scheme for research and training has also been sanctioned by the Central Government at a cost of Rs. 30 lakhs. As recommended by the Village and Small Scale Industries Committee, the results of the investigations now in progress are being awaited and the targets for the output of cloth and yarn in the organised textile industry will be determined in a few months after a clearer assessment becomes possible.

16. The various devices for giving effect to the idea of common production programmes which have been discussed above represent only a part and, indeed, a diminishing part of the totality of action to be taken for the development of village and small industries. They are intended to be in the nature of inescapable holding operations to enable the sector of village and small industries to gain the necessary strength to develop on its own. They have to be supplemented, wherever feasible, by common marketing arrangements through co-operative organisations in which the State may participate. A great deal of attention must be given to ensuring that the positive measures of organisation and assistance succeed and succeed without loss of time.

INDUSTRIAL COOPERATIVES

17. It is common ground that in village and small industries co-operatives have to be developed to the greatest extent possible. The record of the Handloom Board in encouraging the formation of weavers' co-operatives illustrates some of the conditions needed for

the growth of cooperation in small industry. The number of handlooms included in the cooperative fold increased from 626,119 in 1950-51 to 788,664 in 1953-54 and 878,984 in 1954-55 and is expected to reach a million by the end of the first plan. For the formation of cooperatives the Handloom Board has provided assistance to weavers in share capital and in working capital. From 75 to 85½ per cent of the share value is contributed as loan by the Government and the balance is provided by the weaver. As regards working capital, the Government provides Rs. 200 per cotton loom and Rs. 500 per silk loom. Weavers' cooperative organisations at different levels are federated so that there are central agencies available for supplying raw materials, offering technical advice, arranging for credit through cooperative agencies and providing better marketing facilities. In the coir industry, where the middleman has to be eliminated, 119 primary coir marketing societies, 24 husk cooperative societies and 2 central coir marketing cooperative societies have been recently formed. In some States, progress has been made among particular classes of artisans, as among tanners and leather workers in Bombay, Uttar Pradesh and Punjab, and among palm gur manufacturers in Madras. On the whole, however, the progress achieved has been slow.

18. A combination of factors is required, first for establishing industrial cooperatives and secondly, for maintaining and developing them. In almost all branches of small industry there is scope for supply and marketing cooperatives. Producer cooperatives however, have greater possibilities in some fields than in others. In the sector of small industry using power and machines, at the present stage of development, there is considerable room for persons who combine enterprise with craftsmanship and also for educated persons who may set up as small entrepreneurs. Supply and marketing cooperatives are in themselves an important means for aiding small units and securing steady improvement in techniques, including quality control, holding of stocks against future demand and credit. Where supply and marketing cooperatives exist it is possible also for the Government to undertake a measure of financial responsibility, as envisaged by the Village and Small Scale Industries Committee, to provide a limited State guarantee with a view to maintaining continuity of production.

19. Both for organising supply and marketing cooperatives and producer cooperatives, it is essential that industries departments in the States should build up efficient extension organisations which can reach artisans in the main urban centres and in groups of villages. An extension organisation is particularly needed in rural areas where, because of the intimate relationship, between community production and community demand, favourable conditions

exist for forming artisans' cooperatives. A small beginning in this direction is being made in 25 pilot areas selected under the national extension and community development programme. The setting up of cooperatives of either type will enable small industry to utilise in increasing measure financial assistance from the Government and from institutions and also guidance from technical service institutes, training centres and mobile technical services. Special attention should, therefore, be devoted by the staffs of industries departments and those working on behalf of the various Boards to contact artisans and bring them together into whatever form of cooperatives may, in given conditions, be found feasible. Cooperation in this, as in other activities, is less a stage than a process of development and, given sound economic and organisational foundations, one successful step in cooperation leads rapidly to another.

INDUSTRIAL ESTATES

20. The conditions in which the bulk of small industry, whether in towns or villages, is undertaken under conditions which are inimical to working efficiency, maintenance of uniform standards in production and economic utilisation of materials and equipment. These deficiencies have to be remedied. Artisans and small entrepreneurs can be given assistance and facilities of various kinds through the establishment of industrial estates in urban areas and of community workshops in large and centrally located villages. The primary object of the various positive measures for developing village and small industries is to eliminate as far as possible the handicaps of small units in such matters as credit, supply of electricity at reasonable rates, repair facilities, training of workers, availability of technical assistance and guidance and of the results of research. With these handicaps removed, the natural advantages of small units by way of initiative, low labour cost and adaptability should improve their competitive position so that, with State policy being in favour of the growth of a decentralised sector, village and small industries could develop into an integral and well-organised sector of the industrial economy.

21. In their plans State Governments have included a number of schemes for industrial estates, for which a preliminary scheme was prepared by the Small Scale Industries Board. A few estates are proposed near large cities such as Bombay, Delhi and Kanpur; some estates are intended to be located at medium-sized towns such as Agra, Nagpur, Jaipur, Vijayawada, Baroda, Indore and Gwalior. The rest of the estates are proposed to be established at relatively small centres such as Kalyani in West Bengal. An industrial estate is at present under construction at Rajkot in Saurashtra. It is suggested that before finally determining the location of industrial

estates proposed under the plan State Governments may take into consideration the observations on the subject of the Village and Small Scale Industries Committee, to which reference has been made earlier.

22. To a large extent the advantages of industrial estates will accrue to small industries using power and machinery which fall within the province of the Small Scale Industries Board. The line between industries which are the special concern of one or the other of the Boards is not always easy to draw. It would therefore be useful if the coordinating committee of the chairmen of the various Boards were to consider the present proposals and make recommendations, so that industrial estates succeed in rendering the maximum assistance to small units. The experience of industrial estates in the United Kingdom has been encouraging specially since the war, but successful Indian experience does not yet exist to any great extent. Financial provision exists in the plan, but since the outlay involved is likely to be considerable, from the start the programme should be placed on a sound basis.

CHAPTER XII

TRANSPORT AND COMMUNICATIONS

THE transport sector of the economy includes railways, roads, road transport, ports and harbours, inland water transport, shipping and civil air transport. Communication services, which it is customary to consider along with transport, include posts and telegraphs, overseas communications, broadcasting and meteorology. In the development of transport and communications in the past the dominant considerations were trade and administration. Since the second world war the transport system has been increasingly oriented to serve the needs of industrial development. The second plan will carry this process much further. It is common experience that when an economy develops rapidly, the pressure on transport increases to an even greater extent. During a period of rapid development an efficient system of transport can yield high dividends if it is coordinated effectively with programmes for increasing production. Yet, this is the period when it is most difficult to meet the large claims which both transport and industry make on the available resources. Keeping in view the many pressing claims on limited financial resources available including foreign exchange, in the second plan it is proposed to allot for transport and communications a sum of Rs. 1384 crores which will amount to 29 per cent. of the total outlay under the plan. Of this, Rs. 900 crores have been provided for railways, Rs. 268 crores for roads, road transport and tourism, Rs. 97 crores for shipping, ports and harbours, light houses and inland water transport, Rs. 44 crores for civil air transport and Rs. 75 crores for communications and broadcasting.

RAILWAYS

2. All forms of transport have to be expanded, but the greatest burden falls on the railways which have been rightly described as the nation's life-line. With a capital of about Rs. 960 crores and a total mileage of about 35,000 Indian Railways are the largest national undertaking, and will always be one of the principal foundations on which the national economy rests. They were subjected to a great deal of strain during the decade which preceded the first five-year plan. The past few years have therefore been devoted more to rehabilitation and modernisation of the rolling stock and to meeting new needs as they arose than to the extension of the railway network.

3. The success of the railways in fulfilling the targets set for the first plan has placed them in a position to organise themselves to cope with the requirements of the second five-year plan. At the beginning of the first plan, the rolling stock of the railways consisted of 8209 locomotives, 19,225 coaches and 222,441* wagons. The railways expect to procure during the plan period 1609 locomotives, 4837 coaches, and 61,773 wagons. These will be used partly for replacement of over-aged stock which can no longer be put to service. Among the principal projects completed during the first plan are the construction of 380 miles of new lines, the restoration of 430 miles of dismantled lines, the conversion of 46 miles of narrow gauge lines into broad gauge, the Chittaranjan Locomotive Works which have already produced 332 locomotives and the Integral Coach Factory which went into production in October, 1955. Among projects in progress are the electrification of the Calcutta suburban lines and the main line upto Burdwan, the Ganga-Bridge, the construction or restoration of 427 miles of lines and the conversion of 52 miles of metre gauge into broad gauge lines.

4. The principal task for the railways in the second plan is to meet the increasing demands for both goods and passenger traffic. Having regard to the production targets in various fields, the volume of goods traffic is expected to increase by about 51 per cent, from 120 million tons at the end of the first plan to about 181 million tons in 1960-61. The railways expect to make a big contribution towards meeting the increasing demands by large-scale procurements of rolling stock, increases in line capacity and improvement in operational efficiency. But it is at present surmised that with the funds allotted to them, they may not be in a position to carry all the additional traffic expected to be generated during the plan period and the facilities provided by them may fall short of requirements by about 10 per cent. in respect of rolling stock and by about 5 per cent. in respect of line capacity. In regard to passenger traffic, the plan provides for an increase of 15 per cent in passenger train services over the five-year period. This will enable the railways to meet the anticipated increase in passenger traffic but will not afford relief needed in overcrowding. Relief, however, may be expected in respect both of goods and passenger traffic by the retention of replaced over-aged stock which is found in serviceable condition. The position will be kept under review and necessary adjustments in the railway plan will be made in line with developments in other sectors.

5. The second important task of the railways during the second plan is to construct new lines. The programme provides mainly for new lines required in connection with major industrial projects like steel plants, coal mines, etc. In all, about 850 miles of lines

* in terms of 4 wheelers.

will be constructed during the plan period. If additional funds become available later it may be possible to extend this programme and take up some more lines for opening up backward areas.

6. In the second plan, the railways expect to achieve further progress in the rehabilitation of over-aged, obsolete assets, which was the main objective of the railways during the first plan. The railways expect to have on line, at the end of the first plan, 9,262 locomotives, 2,66,049 wagons and 23,779 coaches. Of these about 32 per cent. locomotives, about 19 per cent. wagons and about 26 per cent. coaches will be overaged and due for replacement. During the second plan, 2,258 locomotives 1,07,247 wagons and 11,364 coaches will be obtained, of which 1,352 locomotives, 23,852 wagons and 6,447 coaches will be for the purpose of rehabilitation of over-aged stock. The percentage of overaged stock to total stock on line will thus be reduced to 18.3 in case of locomotives, 8.5 in wagons and 10.5 in coaches.

7. The plan provides for a large programme for the renewal of obsolete track. Speed restrictions have to be imposed on lengths of line laid with obsolete track and these result in slowing down movements and reducing line capacity. The arrears of track renewals from the first plan, together with the renewals which become due in the second plan period will aggregate to about 13,000 miles. The plan provides for the renewal of 1600 miles of track each year or a total of 8,000 miles over the five year period. This will enable the railways to reduce considerably the mileage over which speed restrictions have to be maintained

8. The railway plan lays special emphasis on line capacity works and programmes relating to electrification and improved signalling. The plan provides for the doubling of 1600 miles and the conversion of 265 miles of metre gauge lines into broad gauge. Additional crossing stations, loop lines, extensions of loops at a number of stations and extensive remodelling of a number of yards will also be undertaken. In sections of the railway system where line capacities have reached saturation point, plans for electrification will be carried out. These envisage the electrification of about 800 miles. It is proposed to provide diesel motive power on 1293 miles of railway lines. With a view to ensuring safety of operation and improving line capacities, provision has also been made for installation of improved signalling including automatic signalling.

9. Attention has been given during the first plan to the need to make travel, especially for passengers using the third class, more comfortable by providing additional amenities. Within the resources

available this programme will be pursued during the second plan. Adequate provision is also being made for staff welfare schemes. As the largest single employer in the country the railways have to give due priority to this programme. The total number of railway personnel is expected to increase from about 10·5 lakhs at the end of the first plan to over 12 lakhs at the end of the second plan. About 60,000 quarters, including those at the townships required in connection with new workshops are expected to be built during the second plan. About 6,000 houses are expected to be added at the new crossing stations and on newly built lines. As part of the welfare programme, 13 hospitals and 65 dispensaries with about 1600 beds will be added during the second plan period.

10. A railway development plan of the dimensions indicated above will make heavy demands on trained personnel and much administrative strengthening and reorganisation will be needed. The plan will also call for careful coordination with other forms of transport as well as with industrial and other projects in the plan. Even though the railways will use the internal production capacity of the country to the maximum extent, foreign exchange of the order of about Rs. 425 crores will be needed and imports of steel will be a material factor in the actual fulfilment of the plan.

ROADS AND ROAD TRANSPORT

11. The development of roads and road transport is of considerable importance for the growth of the rural economy and the breaking down of barriers between States and regions. The Nagpur plan proposed in 1943 that over a period of 20 years no village in a well-developed agricultural area should remain more than 5 miles from a main road. Since the political integration of the country was completed, it has been possible to take a more comprehensive view of road development. Special attention has been given to the provision of missing links and bridges and to the improvement of existing roads. Progress in this field during recent years has been rapid and for the construction of village roads much local enthusiasm and cooperation have been enlisted.

12. At the beginning of the first plan India had 97,000 miles of metalled roads and about 147,000 miles of unmetalled roads. During the first plan about 6,000 miles of new surfaced roads and about 20,000 miles of low-type roads are expected to be added. In the national highways programme of the Central Government 640 miles of missing links and 40 major bridges have been constructed and 2,500 miles of existing roads improved. Considerable progress has also been made on a number of important roads outside the national highways system and in the execution of the programme of inter-State roads and roads of economic importance which was

taken up two years ago. By the end of the first plan about one-third of the target set in the Nagpur plan may be said to have been achieved.

13. Substantially larger resources have been provided for the road programme in the second five-year plan. In the national highways programme works begun during the first plan will be completed, and in addition work will be undertaken on 600 miles of missing links and 60 major bridges and improvement of 1700 miles of existing roads and widening of 3750 miles of carriageway. In the programme of roads other than national highways, 1,150 miles of roads will be constructed and over 500 miles upgraded. Programmes in the States provide for construction of about 8,000 to 9,000 miles of surfaced roads. In national extension and community project areas as well as through the local development works programme, with the support of the people, large additions to the village road system will be made. At the end of the second plan about two-thirds of the target set in the Nagpur plan is expected to be realised.

14. During recent years many rural areas have come to be connected with towns and with one another through developments in road transport that have taken place through the initiative of private operators. Most State Governments are anxious to expand the passenger services operated by them. The Planning Commission has recommended that programmes for taking over existing road transport services should be suitably phased. To the extent a State Government does not itself propose to operate road transport services, the terms on which licences are granted to private operators should be liberalised. Government road transport should be managed by corporations in which the railways and private operators participate along with the State Governments. During the second plan the development of goods transport is to be left to private operators and nationalisation of these services is not contemplated. Measures for developing both passenger and goods transport services and augmenting their employment potential have been recently reviewed. Decisions have been taken with regard to liberalisation of restrictions under the Code of Principles and Practice and avoidance of double taxation of vehicles operating on inter-State routes. The Central Government proposes to take permissive powers for the regulation of inter-State road transport under the Motor Vehicles Act. Programmes of road transport development to be undertaken by States as part of their plans will add about 5,000 vehicles to their existing fleets. They also envisage the construction of several workshops.

PORTS AND HARBOURS

15. At the time of Partition India had five major ports with a total capacity for handling cargo of 20 million tons per annum.

During the first plan the construction of a sixth major port at Kandla has been completed and the total capacity has been raised to 26 million tons. Modernisation and rehabilitation programmes have been undertaken at all the major ports. During the second plan the capacity of the major ports is to be increased by about 30 per cent. In addition, development programmes for a number of minor ports in the maritime States are to be carried out. The plan also includes an extensive programme for the development of light-houses, all of which are to be gradually taken over by the Central Government.

SHIPPING

16. The progress of Indian shipping has been slower than had been hoped for immediately after the war. Since 1950 coastal trade has been reserved for Indian tonnage, but the shipping available is not sufficient to carry the traffic. At the beginning of the first plan, India had a tonnage of 3,90,707 G. R. T. The target laid down for the first plan was 6,00,000 G. R. T. This is likely to be achieved, but some of the ships will be put into commission during the second plan period. In the second plan, after allowing for the obsolescence of 90,000 G.R.T., the total tonnage is expected to reach about 9,00,000 G.R.T. At the end of the second plan, the proportion of the overseas trade to be carried by Indian tonnage will rise to about 15 per cent.

17. The Hindustan Shipyard is to be expanded so as to increase the rate of construction to four ships per annum of the modern type. A dry dock is to be constructed at Visakhapatnam. It is also proposed to take preparatory steps for the construction of a second shipyard.

INLAND WATER TRANSPORT

18. Inland waterways had an important role in the transport system of India up to the middle of the nineteenth century. With the development of railways and the withdrawal of large amounts of water for irrigation at the upper reaches of rivers, the contribution of water transport has been steadily declining. In the north-eastern regions of the country, however, water transport continues to play a significant part. It is estimated that about 5,000 miles of river routes in India are navigable by modern power craft. At present, 1,557 miles of rivers are navigable by mechanically propelled vessels and 3,587 miles of river stretches are navigable by large country boats and have the possibility of power development. Navigation can be developed on shallow stretches by either deepening the channels, by regulation works, canalisation and dredgings or by using craft especially designed to negotiate shallow stretches. The first set of measures entails heavy capital outlay and maintenance

of dredgings. Attention has, therefore, been focussed mainly on the use of specially designed craft. The Ganga-Brahmputra Board which was set up in the first plan period, has already taken up three experimental projects. Two of these projects are on the Upper Ganga and the feeder rivers of Assam and the third is a project in Assam for a passenger and vehicular ferry vessel on the Brahmputra. The craft for the Upper Ganga project will be brought into use early in the second plan period. The specifications of the craft for the other two projects are being worked out. During the second plan period, it is proposed to execute development works in the Ganga-Brahmputra region. These will include dredging of important waterways, provision of aids to navigation, such as radio-telephone, automatic beacons and the development of inland port facilities at selected places. The plan also provides for the development of the Buckingham Canal as well as its linking with the Madras harbour and the development of West Coast canals.

CIVIL AIR TRANSPORT

19. Air transport was nationalised in 1953. All parts of the country are linked by services operated by the Indian Airlines Corporation whose air routes account for a total mileage of 15,209. The services provided by the Air India International reach out to 15 countries and cover a total route mileage of 16,673. Both Corporations have sizeable programmes for purchase of additional aircraft and for improving their operational facilities.

20. A large number of civil aviation works were undertaken during the first plan. These included the construction of 9 new aerodromes and considerable improvements at a number of existing aerodromes. During the second plan, 8 new aerodromes are to be constructed and tele-communication and other equipment is to be provided at several aerodromes. Special programmes for aeronautical training form part of the plan.

POSTS AND TELEGRAPHS AND OTHER COMMUNICATIONS

21. During the first five year plan, the various communication services registered a notable advance. The number of post offices increased from 36,000 to 53,000, telephone connections from 168,000 to 260,000 and public call offices from 338 to 1,200. In the field of overseas communication services, radio telegraph circuits have been established with 12 countries, radio telephone circuits with 16 and radio photo service with 5 countries. At the Indian Telephone Industries, annual production capacity for 30,000 exchange lines and 50,000 telephone instruments has been developed.

22. These and other communication programmes are to be further expanded during the second five-year plan. The number of post offices is expected to increase to 73,000 and the number of telephone connections to about 4,50,000. Public call offices are to be provided in all important tehsils and police stations and in towns with a population of 20,000 or more. The network of open wire trunks and carriers is to be extended and considerable progress is envisaged in respect of trunk cables and carrier cables. The number of telegraph offices which rose from 3,592 to nearly 5,000 during the first plan is to be increased further so as to serve, amongst others, all places with a population of 5,000 or more. In respect of overseas communication services direct telegraph, telephone and radio photo services are expected to be established with 25 more countries.

23. The Meteorological Department will also develop its activities in a number of directions, including modernisation of equipment at important aerodrome observatories, setting up of departmental workshops, development of medium range forecasting methods and the establishment of an astronomical observatory and a naval observatory.

BROADCASTING

24. The broadcasting network of the All India Radio includes 26 radio stations. The expansion which has taken place during the first plan ensures that each language has been provided with at least one transmitting station and that fairly effective coverage is available to almost all the regions. The aim during the second plan is to extend the services now available for all the languages to as wide an area as it is at present possible to reach. For areas in which terrain conditions are difficult short-wave transmitters are to be established. To meet the growing demands of national programmes and for ensuring countrywide listening of national broadcasts, a 100 kW short-wave transmitter as well as a 100 kW medium-wave transmitter will be set up at Delhi and 50 kW short-wave transmitters will be provided at Calcutta, Bombay and Madras. External services will also be expanded. Finally, to promote rural listening, community receivers are to be located in villages with a population of 1,000 and above. About 72,000 sets of this type are expected to be installed during the period of the second plan.

CHAPTER XIII
SOCIAL SERVICES

INTRODUCTION

THE outlay on social services during the second plan will be about twice the provision made in the first plan. Despite the large increase in the magnitude of the plan the proportion which expenditure on social services (apart from rehabilitation of displaced persons) bears to the total outlay on development in the public sector will be maintained. The role of social services in bringing about greater equality of opportunity and in imparting strength at the roots to the social and economic structure is widely recognised. As programmes for social services under the first plan have gone forward, the importance of voluntary service and organised community effort and of non-official leadership has become increasingly clear. The development of social services is a responsibility to be undertaken in the main by urban and rural communities in terms of their own priorities and resources. Public authorities at various levels have indeed a vital share in providing the basic services in health, education and housing and in aiding sections of the population which have been at disadvantage in the past. Their true role, however, is to supplement and stimulate the effort which each community should put forth as part of the scheme of national planning.

2. During the second plan about Rs. 946 crores have been provided for social services, the distribution being as follows:—

	(Rs. crores)
Education	320
Health—including urban water supply	267
Housing	120
Labour	26
Welfare of backward classes	90
Social welfare	28
Rehabilitation	90
Social schemes relating to educated unemployment.	5

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I

HEALTH

The objective of health programmes is to improve the general level of health by expanding the basic health services and bringing them within the reach of the people. More specifically, the aims which the second five year plan emphasises are:-

- (1) control of communicable diseases which affect large sections of the community,
- (2) improvement of environmental hygiene,
- (3) provision of adequate institutional facilities to serve as a base for organising health services,
- (4) provision of facilities for the training of medical and health personnel, and
- (5) family planning.

As against Rs. 131 crores provided in the first plan for health programmes, the second plan provides Rs. 267 crores. The programmes which have been drawn up are comprehensive and far-reaching in their scope.

2. During the second five year plan it is intended to provide for larger hospital accommodation and to improve the services in hospitals, including staff, accommodation, equipment and supplies. For this purpose the plan provides about Rs. 40 crores. It is estimated that in 1951 there were 8600 medical institutions in the country with about 113,000 beds; in 1955-56 the number of institutions is estimated to be about 10,000 with about 1,25,000 beds. These figures represent an increase during the first plan, of 16 per cent in institutions and of 10 per cent in beds. At the end of the second plan the number of institutions is likely to be about 12,600 and the number of beds about 155,000 so that the increase expected is about 26 per cent in institutions and about 24 per cent in hospital beds.

3. The provision of rural medical and health care is the central problem in health planning. This object is to be achieved through the setting up of 'health units' in national extension and community projects. These units perform a variety of services and in their work curative and preventive aspects are integrated. During the first

plan, in all 725 health units are expected to be set up. According to the tentative plans which have been drawn up and are now under consideration, it is proposed to establish over 3,000 health units in community project, national extension and other areas. State Governments also propose to convert 131 of the existing dispensaries into primary health units and to set up a number of secondary health units.

TRAINING PROGRAMMES

4. The key to the extension of health services and their efficient operation is the availability of trained personnel in all categories. Training programmes have, however, to be linked with employment opportunities which are likely to become available. At the end of 1950 there were about 59,300 registered medical practitioners. The number had increased by the end of 1954 to about 67,000. It is estimated that by the end of the first plan there will be about 70,000 registered medical practitioners. At the rate of one doctor for every 5,000 population at the end of the second plan about 80,000 doctors will be needed. Allowing for supervisory posts, the number of doctors needed will be about 90,000. That is to say, each year 4,000 more doctors are required. The number of medical colleges has increased from 30 in 1950-51 to 40 in 1955-56 and the number of annual admissions from 2,500 to about 3,500 providing at present, for a net annual out-turn of about 2,000 doctors. State plans provide for the expansion of about 28 medical colleges and attached hospitals. The Central Government will assist the setting up of 6 new medical colleges and the establishment of full-time teaching units and of Preventive Medicine and Psychiatric Departments in medical colleges. Provision has also been made for completing the All India Institute of Medical Sciences and upgrading certain departments of medical colleges for post-graduate training and research.

5. Shortages in personnel other than doctors have been more marked and are likely to persist longer than in the case of doctors. At the end of 1954 the numbers registered in different categories in the States were 20,793 nurses, 24,290 midwives, 756 health visitors, 4,468 dais and 946 nurse-dais. As norms to aim at there should be one hospital bed for 1,000 population, one nurse and one midwife for every 5,000 population and one health visitor and one sanitary inspector for 20,000 population. For ancillary categories of personnel, figures in the last column in the table below are still somewhat distant. They illustrate, however, the character of the present shortages and the need for accelerated and sustained action

if even elementary services are to reach the mass of the people in any adequate degree.

	1950-51	1955-56	1960-61	Number needed
Doctors	59,000	70,000	80,000	90,000
Nurses (including auxiliary nurse midwives)	17,000	22,000	31,000	80,000
Midwives	18,000	26,000	32,000	80,000
Health visitors	600	800	2,500	20,000
Nurse-dais and dais	4,000	6,000	41,000	80,000
Health assistants and sanitary inspectors	3,500	4,000	7,000	20,000

During the second plan, an attempt is being made to achieve substantial advance in the provision of training facilities for different classes of personnel. Arrangements are being made for the training of nurses, midwives, pharmacists, sanitary inspectors and other technicians at medical colleges and at the larger hospitals which are not in use as teaching hospitals. There are at present 6 dental colleges in the country and they need to be more adequately staffed, equipped and housed. It is proposed to establish 4 new dental colleges and expand two existing colleges. The plan provides about Rs. 40 crores for various training programmes.

CONTROL OF COMMUNICABLE DISEASES

6. During the first five year plan an effective beginning was made in the attack on communicable diseases. The principal diseases in this group are malaria, filariasis, tuberculosis, leprosy and venereal diseases. As compared to Rs. 22 crores allotted in the first plan for the control of communicable diseases, the second plan provides about Rs. 55 crores.

7. The malaria control programme envisages the institution of 200 units, each protecting a million persons through indoor spraying with DDT and treatment of malaria cases with anti-malarials. At the end of the first plan 162 units will be in operation. The second plan provides about Rs. 27 crores for malaria control operations. For filariasis control, 65 control units are to be set up in addition to the 13 control units and 22 survey units established during the first plan. The control programme consists of residual spraying with insecticides and larvicides and oral administration of Hetrazon tablets to the people residing in the affected areas. The plan has allocated nearly Rs. 9 crores for the control of filariasis.

8. In tuberculosis control, the primary emphasis is on prevention. This is to be achieved by extensive B.C.G. vaccination carried out

by 130 B.C.G. teams, establishment of clinics, organisation of domiciliary treatment, demonstration and training centres and, to a limited extent, provision for isolation and rehabilitation. During the first plan 166 clinics have been set up; their number is proposed to be raised to about 340 in the second plan. Five demonstration and training centres have been provided during the first plan; 10 more centres are proposed to be established in the second plan. The plan provides about Rs. 14 crores for tuberculosis control.

9. The programme of leprosy control is to set up field control units which would survey and determine the extent of incidence of the disease and also provide domiciliary treatment to the cases as well as to contacts. During the first plan period 35 centres would have been set up; in the second plan it is proposed to provide 100 additional control units in areas where there is a fairly high incidence of leprosy. The plans of States also provide for additional beds for leprosy patients and for the improvement and opening of leprosy homes, sanatoria and colonies. The Central Government has set up a Central Leprosy Teaching and Research Institute. The total provision in the plan for leprosy control exceeds Rs. 4 crores.

10. In some parts of the country venereal diseases are a large and urgent problem. With the recent advances in diagnosis and cure of this group of diseases, it is possible to reduce the incidence of infection if certain public health techniques are integrated in the programme of venereal diseases control. Proposals in the plans of States for the control of venereal diseases need to be reviewed from this aspect.

ENVIRONMENTAL HYGIENE

11. Water supply and sanitation programmes have a high priority in the development of health services. The first plan provided for these programmes—Rs. 26 crores for urban areas and Rs. 22 crores for rural areas. In rural areas many villages have improved their water supply through local development works and through the national extension and community development programme. In urban areas water supply schemes have been hampered to some extent by insufficiency of materials and by lack of adequate organisation in a number of States. The plans of States included 168 urban water supply schemes and the Central Government approved or took preliminary action in respect of about 150 urban water supply schemes. For the second plan, State plans have provided about Rs. 27 crores for rural water supply schemes and Rs. 23 crores for urban water supply. At the Centre an amount of Rs. 25 crores is being provided for urban water supply and sanitation schemes, and provision is being made to the extent of about Rs. 10 crores for assistance to Corporations mainly towards their water supply and sanitation programmes.

INDIGENOUS SYSTEMS OF MEDICINE

12. Plans of States have provided over Rs. 5 crores in support of indigenous systems of medicine, which continue to cater to the needs of large numbers of persons in urban and rural areas. During the second plan improvements will be effected in 13 Ayurvedic colleges and 255 dispensaries and 5 new colleges and about 1100 dispensaries will be set up. The Central Government has provided for research and higher education in indigenous systems.

NUTRITION

13. The most important single factor in the maintenance of health is nutrition. With the improvement in the production of cereals in the first plan, there will be greater stress now on increasing the production of protective foods such as milk, eggs, fish, meat, fruits and green vegetables. Priority in improving nutrition is to be given to vulnerable groups such as expectant and nursing mothers, infants, toddlers, pre-school children and children of school-going age. The resources available for development are still too limited to permit more than a small beginning in these directions. Health programmes provide to some extent for the distribution of milk powder and food supplements like codliver oil and vitamin tablets, especially to expectant and nursing mothers, infants and toddlers.

14. The Indian Council of Medical Research is giving special attention to problems of research in nutrition. The plan provides resources for this purpose. The Council has selected the following projects as deserving of high priority for implementation during the second plan:-

- (1) survey and prevention of protein malnutrition;
- (2) growth and physical development of Indian children;
- (3) control of dietary and nutritional diseases like lathyrism, endemic fluorosis, etc;
- (4) clinical nutrition research;
- (5) food technology (par-boiling of rice);
- (6) mid-day meals for school children;
- (7) studies on the evaluation of nutritional status and studies into certain aspects of energy metabolism and protein, vitamin and mineral metabolism;
- (8) expansion of nutrition research laboratories.

The Ministry of Health has a programme for the control of goitre in certain parts of the sub-Himalayan belt.

MATERNAL AND CHILD HEALTH

15. Maternal and child health programmes are proposed to be integrated with the primary health unit services. The plans of States

provide for the setting up of about 2100 maternity and child health centres. At present pediatrics is the weakest link in the maternal and child health services. It is therefore proposed to start four regional training centres in pediatrics to give adequate training for medical as well as associated personnel in preventive and curative pediatrics. These centres will be associated with a number of properly staffed and equipped maternal and child health centres and will offer pediatric care in an area around the training centre.

FAMILY PLANNING

16. The programme of family planning which was started during the first plan will be continued on a substantially increased scale. The programme includes:-

- (1) grants to State Governments, local authorities and voluntary organisations for opening family planning clinics,
- (2) training of personnel,
- (3) public education on family planning and population problems,
- (4) research in human fertility and in the means of regulating it, and
- (5) demographic research, including the study of inter-relationships between social, economic and population changes, reproductive patterns and attitudes and motivations affecting the size of the family and suitable procedures for the rapid education of the people.

Nearly Rs. 4 crores have been provided for the family planning programme. It is expected that about 300 urban and 2,000 rural clinics will be set up during the second plan. With the object of carrying forward the programme of family planning, two committees were set up at the Centre, one concerned with population policy and the second for research and programmes relating to family planning.

HEALTH EDUCATION

17. The provision of medical and public health facilities will achieve the objective of promotion of positive health in the measure in which the people take full advantage of these facilities and change their health practices and attitudes. This calls for a special effort towards general health education. The Health Education Bureau at the Centre will provide technical guidance, services and training facilities, and will produce health education materials. About Rs. 75 lakhs has been provided for health education programmes in the second five year plan.

II

HOUSING

Clean housing conditions have far-reaching effects on public health, on community life and on levels of productivity. The problem of providing adequate resources for bringing about improvements in urban and rural housing conditions presents enormous difficulties in a period of intensive economic development. There are two main aspects to be considered: (1) size and scope of housing programmes to be undertaken during the plan period by the Central and State Governments and other public authorities and (2) determination of policies designed to provide houses to persons in low-income groups at rents they can afford and enabling persons of small means to build houses for themselves. Through the provision of cheap plots of land, credit facilities, guidance in the use and choice of building materials and the production of standardized parts much can be done to stimulate housing activity without impinging too heavily on the limited resources available to the State for expenditure on development.

2. Both in urban and in rural areas housing is a problem of vast dimensions. There are 54 million houses in rural areas, of which a large number need reconditioning or rebuilding. In the villages, relief and assistance in the provision of sites are especially urgent in the case of scheduled castes and other backward classes. In national extension and community project areas, 18,000 rural houses have been built and 95,000 houses have been reconditioned. Work in these areas has shown that, with a little guidance and some measure of assistance, village communities can provide themselves with better sanitation, drainage and lighting and introduce improvements in rural housing conditions in a relatively short period. Much can be done in rural areas through cooperative self-help, demonstration of improved housing and use of local materials and skills and of improved techniques.

3. In urban areas complex problems had to be faced. Without systematic town planning, control over the use of land and over building operations has become increasingly expensive for public authorities as well as for private individuals to build houses. The result is that with increase in population the shortage of houses,

already acute, is further accentuated. The housing problem in towns is part of the wider problem of urban development in relation to economic planning. Town planning and the preparation of master plans for all urban areas are essential if the dangers of haphazard and unplanned growth are to be met. In areas served by large river valley projects and for metropolitan areas and major centres of industry, regional plans have to be prepared. A pilot study in the preparation of regional plans is to be shortly undertaken in the Damodar Valley.

4. In urban areas especially the housing problem has grown steadily from year to year over the past two decades. The population of towns increased by 10.6 millions between 1931 and 1941 and by 16.3 millions between 1941 and 1951. During these decades the number of occupied houses in urban areas increased respectively by 1.8 and 1.7 millions. Even apart from the question of the quality of housing, the quantitative shortage increased considerably during the decade 1941-51. Alongside war-time developments and Partition there has been accelerated urban growth. Between 1951 and 1961 the total urban population is expected to increase by about 33 per cent so that, in the absence of effective measures the housing situation may become more difficult.

5. The precise extent of the housing shortage in urban areas has not been determined. This is because systematic housing statistics do not exist and there are few reliable surveys of housing conditions. Information in respect of the progress of private construction is also lacking. Special efforts should now be made to organise the flow of accurate statistics so that co-ordination in policy and assessment of progress are effectively ensured. For an urban population of 62 million there were in 1951 about 10 million houses. The shortage of houses in that year is roughly estimated to be about 2.5 million.

6. In recent years in private construction there has been greater emphasis on houses for middle income and higher income groups, so that the shortage has become even more marked than before in respect of the needs of those in the lower income brackets. Initial steps have, however, been taken during the first plan for providing housing for these groups. The two principal programmes of housing taken up by the Central Government are the subsidised industrial housing scheme and the low income group housing scheme. Under the former scheme, the construction of 77,000 units was approved up to the end of November 1955, of which 34,000 units have been so far completed. Under the low income group housing scheme, loans to the extent of Rs. 21 crores have been sanctioned and Rs. 5 crores have been disbursed, the programme so far undertaken being estimated to provide about 40,000 units. These are small but important

beginnings. A useful start has also been made with the training of masons and other building industry personnel. It is proposed to expand these training facilities. The National Building Organisation which was set up in 1954 is engaged in pooling the results of building research and studying methods of achieving economies in construction.

7. The Central and State Governments have also constructed houses for their employees in administrative services as well as in industrial and commercial undertakings. The Ministry of Rehabilitation have also undertaken the construction of houses on a large scale for refugees from West and East Pakistan. The following table gives rough figures of the total number of houses constructed during the first plan period in the public and the private sectors:—

<i>Public construction</i>	<i>Number of houses/tenements</i>	
Industrial Housing	...	77,000
Low Income Group Housing	...	40,000
Refugee Housing	...	323,000
Housing by Central and State Governments	...	300,000
	TOTAL	...
		740,000
Estimated private construction	...	750,000
	TOTAL	...
		1,490,000

8. For the decade 1951-1961 the number of houses required in urban areas is estimated to be about 8.9 million. This takes into account the shortage estimated for 1951, estimated increase in population at 33 per cent, depreciation on existing houses at the rate of 1 per cent per annum and replacement of 11 per cent of existing houses. During the period 1951-56 about 1.5 million houses are estimated to have been constructed. During the second five year plan 2.1 million dwelling units are expected to be constructed by public authorities and private individuals and organisations in urban areas. Thus, so far as can be estimated at present, in 1961 the shortage of houses in urban areas may be about 5.3 millions. In other words, speaking roughly, in 1961 the shortage may be about twice as much as it was in 1951.

9. Details of housing programmes for the second plan are being worked out at present. The plan has allotted Rs. 120 crores for housing programme to be carried out in the States and under the auspices of the Ministry of Works, Housing and Supply. There are, in addition, housing programmes of the Ministries of Rehabilitation, Railways, Defence and Labour and the construction programmes of

the Central Public Works Department. It is estimated that within the period of the second plan about 1.2 million dwelling units will be constructed by the public authorities and private construction is expected to provide about a million dwelling units, thus making a total of 2.2 million units. A tentative break-up is given below:

	<i>Number of units (in thousands)</i>
Subsidised industrial housing.	142
Low income group housing.	68
Slum clearance and sweepers' housing.	110
Plantation housing.	11
Rural housing.	120
Middle income group housing.	5
Central and State Governments and local bodies.	400
Central Ministries (other than Works, Housing and Supply Ministry).	176
Plantations and Mines.	177
Estimated private construction.	1000
TOTAL	2209

The provisional allocation of Rs. 120 crores allotted for housing in the second plan is as follows:

	<i>(Rs. crores)</i>
Subsidised industrial housing	50
Low income group housing	40
Slum clearance and sweepers' housing	20
Rural housing	5
Middle income group housing	3
Plantation housing	2

10. The working of the subsidised industrial housing scheme is at present being reviewed. Attention has been drawn to the fact that although according to the scheme the Central Government provides a subsidy to the extent of 25 per cent. of the cost of construction, including the cost of land, and loans to employers to the extent of 37½ per cent, the interest and initiative evinced by employers has been much less than is due from them. For co-operative societies loans are allowed to the extent of 50 per cent of the cost, but few

workers' co-operatives have taken advantage of this concession. Steps to secure a greater response from employers and co-operatives are under consideration.

11. During the second plan it is proposed to undertake a programme for slum clearance and provision of houses for sweepers. For this programme, to the extent of 50 per cent. of the cost, the Central Government will provide loans repayable in 20 to 30 years at 4½ per cent. interest. The balance of the cost is proposed to be found as subsidy to be shared equally between the Central Government and the State Governments or the local authorities concerned. In carrying out this programme, besides clearing existing slum areas, it will be necessary to provide additional houses for persons removed from slums.

III

WELFARE OF BACKWARD CLASSES

In an under-developed country like India, it is not easy to define rigidly the sections of the population for whom special measures of protection and assistance should be undertaken over and above the general programmes of economic and social development. Some sections of the population can, however, be distinguished from the rest for special treatment. These are :

- (1) *Scheduled tribes*, numbering about 19·1 millions. In addition to the provision of such amenities as improved communications, hospital and public health facilities, and education, they require assistance towards the improvement of their economic conditions;
- (2) *Scheduled castes*, numbering 52·1 millions, have for centuries suffered from disabilities and need special assistance in the amelioration of their social and economic conditions;
- (3) *Other backward classes*, among whom are communities formerly known as "criminal tribes", numbering 4·2 millions, may be specially mentioned. Conditions have to be created which would enable members of these communities to become citizens pursuing their vocations in the normal way. Some groups or sections, whose members are educationally backward have been recognised already for the grant of stipends, scholarships and other similar concessions. There may be other groups who can be considered to be socially and educationally backward. The determination of such classes is at present engaging the attention of the Central Government in the light of recommendations made by the Backward Classes Commission.

PROGRESS IN THE FIRST PLAN

2. In the programmes included in the first five year plan, efforts were made to provide for the special needs of the sections of the population mentioned above and in all a provision of Rs. 39 crores was made in the plan. Of this, a sum of Rs. 20 crores was provided

in the plans of States and the balance consisted of Central grants amounting to Rs. 15 crores for the welfare of scheduled tribes and Rs. 4 crores for the removal of untouchability and allied scheme for scheduled castes, and for the rehabilitation and welfare of communities formerly known as "criminal" and of other backward classes. The welfare of scheduled tribes and the development of scheduled areas is the special responsibility of the Union under the Constitution. For this purpose since 1951-52 the Central Government has given grants-in-aid to States. Progress, however, was somewhat slow in the beginning, as some time was inevitably taken up in working out appropriate welfare schemes and in setting up the necessary administrative machinery in the States. As special departments have come into existence in the States to look after the implementation of the programme, their ability to utilise the funds provided has steadily increased.

3. Of the total estimated expenditure a sum of over Rs. 11 crores was spent by the State Governments on the provision of educational facilities to backward classes, in addition to a further amount of about Rs. 3.4 crores disbursed during the same period by the Ministry of Education on the grant of scholarships to members of such classes for post-matriculation studies. Beginning with the grant of less than 3,000 scholarships per annum, the Central Government now makes available over 26,000 scholarships each year at an annual cost of more than Rs. 1 crore. In the case of the tribal people, special emphasis has been laid on the provision of free residential accommodation in Ashram Schools and on the teaching of crafts. Attempts are being made to impart education to the tribal people in their own regional languages and primers have been prepared in Hyderabad, Bihar, Assam and NEFA in the tribal dialects. More than one thousand Ashram Schools, Seva Ashrams, etc. were opened in the States of Bombay, Bihar, Orissa and Madhya Pradesh, and about 650 Sanskar Kendras (Balwaris, community centres etc.) have been established in the States of Bombay, Bihar, Madhya Bharat and Rajasthan. In NEFA training institutes have been opened to train tribal teachers in Hindi and allied subjects so that they can take over the teaching of tribal boys and girls. Special emphasis is laid on a simplified type of basic education adapted to local needs and conditions.

4. Similarly, in the field of economic uplift, a sum of approximately Rs. 3.6 crores was spent during the period of the first plan on the provision of vocational training and setting up cottage industry centres and on the grant of loans and subsidies to individuals and co-operative societies for starting or developing small trades. A large number of persons belonging to the backward classes were trained in cottage and subsidiary industries such as basket making,

tanning, carpentry, poultry, bee-keeping, etc. In a number of States, tribal people were organised into co-operatives with a view to enabling them to exploit and utilize minor forest produce to their best advantage, and more than 350 grain golas were set up in the States of Bihar and Orissa. Mention may also be made of dairy societies which were organised and successfully run in West Bengal. Co-operative societies have also been set up to assist in the marketing of agricultural produce on co-operative lines. A scheme has been launched in NEFA to encourage tribal villagers to start co-operative stores and run Government managed shops.

5. Attention has been given to the improvement of means of communication in tribal and scheduled areas. In addition to their other road development programmes, a sum of about Rs. 6.5 crores has been spent by the State Governments on the construction of small approach roads, hill-paths and bridges in areas inhabited by the tribal people. The Government of Assam were given a special grant of Rs. 2.6 crores for improvement of communications in the tribal areas of that State. In all, 2,346 miles of bridle roads or hill paths were constructed in the States of Andhra, Assam, Bihar, Orissa, Madhya Bharat and Vindhya Pradesh. In NEFA the scheme of building roads and mule tracks on a self-help and cooperative basis with the contribution of the tribal people has proved a great success and has been much more economical than the contract system. About 200 miles of such roads have been built at less than half the usual cost.

6. Steps have also been taken to augment medical and public health facilities in scheduled areas. One of the principal difficulties experienced by tribals as well as members of the scheduled castes concerns the supply of clean drinking water. During the period of the first plan, more than 10,000 wells were provided. In addition to the opening of 133 hospitals and dispensaries in the tribal and other areas, medical aid was given to these classes in the shape of free distribution of medicine, reservation of beds, etc.

7. The housing conditions in which members of scheduled castes and scheduled tribes generally live are extremely unsatisfactory. To meet this problem, a sum of about Rs. 3 crores was spent during the period of the first plan on the provision of free house sites and the grant of subsidies, loans or building materials for the construction of houses.

8. Special attention has been paid to the problem of shifting cultivation practised by tribals in certain parts of the country. Experimental schemes were tried out in many States, notably in Assam, Andhra, Orissa and Hyderabad, with a view to encouraging tribals

practising shifting cultivation to take to settled methods of agriculture. One of the major obstacles in the way of implementation of the schemes for the welfare of the Scheduled Tribes has been the lack of trained welfare workers and technical personnel. The position in this respect has improved with the setting up during the last three years of institutes in Bihar, Orissa, Madhya Pradesh and Saurashtra and NEFA for the training of field workers and for tribal research.

9. For dealing with the problem of untouchability, besides the enactment of the Untouchability Offences Act, feature films were prepared and displayed through publicity units; posters were published and hand-bills distributed; and social melas were organised and intercaste dinners held. Mention may also be made of the financial aid given to non-official agencies which played an important part in the implementation of the programme particularly in the field of propaganda and publicity.

SCHEDULED TRIBES AND AREAS

10. The problems reviewed above are proposed to be tackled on a considerably expanded scale during the period of the second plan, in which a total provision of Rs. 90 crores has been made for the welfare of backward classes. Of this, nearly two-thirds will be devoted to programmes for the welfare of scheduled tribes and the development of scheduled areas. Among the programmes on which the greatest emphasis is being placed is the settlement of tribals practising shifting cultivation in agricultural colonies. These colonies will be in the nature of multi-purpose projects where, in addition to land, plough animals, agricultural implements, seeds, manure, etc., programmes such as minor irrigation, demonstration farms, seed stores, terracing of fields, housing, village and hill roads, primary schools, supply of clean drinking water, medical and public health facilities, adult education, welfare and community centres, veterinary facilities, co-operative societies, etc. will be implemented. Experience gained in working a pilot project in Assam for soil conservation and prevention of shifting cultivation will be utilised for dealing with these problems elsewhere.

11. Other programmes to which considerable attention is being given are:

- (i) schemes for eradicating diseases the incidence of which is particularly high, such as malaria, tuberculosis, leprosy and yaws, for making available medical and public health facilities and for supply of pure drinking water;

- (ii) development of communications in inaccessible areas especially the provision of improved village roads, hill and forest paths, minor bridges, etc.; and
- (iii) other schemes which will secure speedy improvement in economic conditions.

Forest cooperatives, grain golas and training and production centres for cottage industry are also being promoted. Welfare workers to be trained will be selected as far as possible from amongst tribals themselves. The training of a sufficient number of midwives, nurses, *dais*, etc., is of special importance at this stage of development. A technical institute is proposed to be started at Imphal, where tribal students will receive training for diploma and certificate courses in civil and mechanical engineering. In addition, scholarships will be provided for enabling tribal students to pursue higher courses in professional or technical subjects.

SCHEDULED CASTES

12. As regards the removal of untouchability, besides providing drinking water wells, mixed dwellings, common community centres, and measures for publicity and propaganda, special emphasis will be laid on the economic uplift of members of scheduled castes. They are to be assisted with allotments of land, training in remunerative arts and crafts, and extension of educational facilities by the grant of scholarships and stipends. The problems of scheduled castes are an integral part of the general social and economic situation of the country, especially in the rural areas. Their social disabilities are in the process of disappearance, but obviously there is need for providing much larger opportunities for work. This is one of the major considerations in the second five year plan. In the removal of untouchability, the growth of public opinion and education in values and attitudes both for the general community and for those who fall within the scheduled castes play an important part. High priority will continue to be given to this aspect of the programme for removing untouchability.

EX-CRIMINAL TRIBES

13. A great deal of attention has to be given to the rehabilitation of members of tribes formerly known as "criminal", in order to provide them with gainful employment and to enable them to become good citizens.

HOUSING

14. One of the major problem which will receive attention during the second plan is the improvement of housing conditions in which

tribal people as well as members of scheduled castes and backward classes generally live. For this purpose, it is proposed to introduce a special programme. Plans of States aim at the construction of 86,000 houses for these classes during next five years.

TARGETS IN STATE PLANS

15. Some of the targets which State Governments have provided in their plans may be briefly mentioned. In the field of education it is proposed to open over 7,500 schools and hostels and to grant 24 lakhs scholarships and stipends in addition to concessions such as grants for the purchase of books, clothing, etc. Grants will be given towards boarding and lodging expenses of students drawn from amongst backward classes who reside in hostels. The programme for communications includes the construction of about 9,000 miles of roads, hill paths, etc. More than 14,000 families are to be rehabilitated on land and about 17,000 persons will be given loans and subsidies for trade and cottage industries. It is proposed to train about 18,000 persons in various arts and crafts such as tailoring, smithy, tanning, weaving, basket-making, beekeeping, poultry, etc. Cooperative societies of various types will also be promoted, for instance, multi-purpose cooperatives, forest cooperatives, agricultural credit societies, etc. The housing programme has already been mentioned earlier. It is proposed to open about 145 hospitals and dispensaries and to construct about 23,000 drinking water wells. Centres for treating certain specific diseases will also be established.

ADMINISTRATIVE PERSONNEL

16. One of the main problems in implementing the second plan in scheduled areas is that of finding suitable trained personnel at different levels. To meet this problem the Government of India have approved the formation of a new cadre called the Indian Frontier Administrative Service (IFAS) to attract the most suitable material from the Indian Administrative Service, the Indian Foreign Service, the Defence services and other Central and State services as well as Universities to fill Grade I and Grade II administrative posts in NEFA, Manipur and Tripura. The cadre is a small one at present, consisting of 43 Class I posts—23 in Grade I and 20 in Grade II—and may well have to be expanded in order to provide officers for other backward and border areas.

17. For subordinate services in these areas it is proposed to form a special cadre details of which are being worked out. What is needed is a band of permanent workers who will serve the tribal people and tribal areas by living among them and sharing their life. Special emphasis is laid on getting as many tribal officers as possible

and training them to work in their own areas. Thus, for example in NEFA about one-third of the total strength of officers in Class I, about 40 per cent in Class II and over 50 per cent in Classes III and IV are tribal people.

18. The working of the first plan has emphasised the need for strengthening the existing administrative arrangements for implementing programmes relating to the welfare of backward classes. Steps to this end have been proposed in the plans of States. The Central Government proposes to give special attention to the assessment and evaluation of the progress of implementation of schemes included in the plan and to the problem of finding the required number of administrative and technical personnel.

IV

SOCIAL WELFARE

The growth of social services in any country is necessarily a slow process. Its principal limitations relate to the magnitude of the community's resources and the lack of trained personnel and of organisations devoted to social welfare. In the field of social welfare, personnel provided by the Government or by public authorities generally represent only a nucleus for drawing into the service of the community the voluntary labours of large numbers of private individuals. In the past voluntary agencies depended entirely on donations from private persons. It is felt that, in the larger interests of the community, these voluntary agencies should be encouraged to extend the scope of their activities and that the Central and State Governments should supplement private efforts in this direction.

2. It was in response to this situation that as part of the first five-year plan the Central Government set up a Central Social Welfare Board with the object especially of assisting voluntary agencies in organising welfare programmes for women and children and handicapped groups. The Central Social Welfare Board has, in turn, in collaboration with State Governments, organised State Social Welfare Boards throughout the country. The building up of this organisational network makes it possible to embark upon larger programmes of social welfare in the second five year plan. Already, during the past three years the foundations for these programmes have been laid. The Central Social Welfare Board has hitherto assisted 781 women welfare institutions, 689 child welfare institutions, 201 institutions serving handicapped persons and delinquents and 811 institutions engaged in general welfare work. The Board also took up welfare extension projects, one in each district in the country, each project serving a group of about 25 villages. The Board has undertaken an extensive training programme for women village level workers (gramsevikas) and for midwives. It has also made a beginning in Delhi, Poona, Hyderabad and Vijayawada in tackling the difficult task of providing work for women in their homes. During the second five year plan the Board has a programme for taking up three more welfare extension projects in each district, bringing the total number at the end of the plan to 1,320.

3. Problems relating to the welfare of women and children and handicapped and delinquents have been studied by special groups

SOCIAL WELFARE

or committees set up by the Board and detailed programmes are being drawn up for the second five year plan. Other programmes under the second five year plan, details of which are now under consideration, concern juvenile delinquency, moral and social hygiene, problems relating to beggary and the establishment of probation services.

4. In all fields of social welfare each local community has to assume the main responsibility for providing relief and assistance to the needy and the handicapped. The role of the State and agencies set up by it is necessarily of a limited character. However, the experience of the first plan shows that resources provided by public authorities in money and personnel can go a long way in stimulating community effort and invoking much voluntary service. The Bharat Sevak Samaj, as a national organisation set up at the suggestion of the Planning Commission, and several other voluntary organisations have in this manner succeeded in making a significant contribution to community welfare. Their work is expected to develop further during the second five year plan, which provides Rs. 28 crores for schemes of social welfare, Rs. 15 crores for local development works and Rs. 5 crores for special schemes connected with public cooperation in construction programmes.

LABOUR POLICY AND PROGRAMMES

In the labour policy proposed for the period of the first plan the greater emphasis was placed on the effective administration of labour laws than on enacting fresh legislation. For the settlement of disputes joint consultation at different levels was proposed. The plan envisaged improvement in the real wages of the working class. The implementation of social security schemes like Employees' State Insurance and Employees' Provident Fund Act, and the subsidised industrial housing programme was envisaged. Working conditions in factories, plantations and mines were also to be improved. In order to study systematically problems of production in relation to the health and safety of workers, it was decided to establish a Central Labour Institute and to organise productivity studies in some industries. Labour welfare centres were also to be established in a number of States.

2. Over the course of the first plan industrial relations have recorded an improvement. The various proposals contemplated in the plan were carried out in cooperation between Government, industry and labour. Employers have shown increasing awareness of the need to improve working conditions and labour as a whole has been prepared to play its part in increasing national production.

3. In its essentials the labour policy and the approach to industrial relations outlined in the first five year plan will also hold for the period of the second plan, although necessarily some changes and adaptations will be needed in view of the determination to achieve a socialistic pattern of society. Increase in the scope of public sector will place a heavy responsibility on workers in that sector. Also if conditions of work in public undertakings are expected to act as an example for the private sector, administrators in charge of these undertakings have to be especially watchful of the interests of workers. A labour policy which secures this objective and receives general support from the interests concerned is being evolved through the work of a representative Panel on labour which was constituted by the Planning Commission about the

middle of 1955. The suggestions which are briefly explained below are in the main the result of deliberations in this Panel.

4. The present trade union legislation needs to be revised with the object of (1) restricting the number of outsiders in the trade unions, (2) giving unions statutory recognition under certain conditions, (3) protecting office-bearers against victimisation, and (4) improving the financial base for the trade union movement from within its own resources. Such legislation is considered necessary for strengthening the trade union movement. There is need also for voluntary efforts towards the unification of the trade union movement.

5. Considerable emphasis should be placed on mutual negotiations for the settlement of disputes and on voluntary arbitration. Government intervention should be resorted to only in intractable cases. The proposed amendment of the Industrial Disputes Act is therefore a move in the right direction.

6. The present provision in the Industrial Disputes Act for enforcing compliance with the terms of awards does not go far enough. Responsibility for enforcing specific performance of an award should be placed on a Standing Industrial Tribunal which it should be possible for parties concerned to approach directly.

7. The Joint Consultative machinery has not yet reached the lower levels and the works committees are functioning indifferently. Their working needs to be improved in order to make them more effective, as vehicles of goodwill which is evident at the top.

8. For the successful implementation of the plan increased association of labour with management is essential. This will improve industrial relations and will also promote increase in productivity. It is therefore recommended that in each undertaking there should be a Council of Management consisting of an equal number of representatives of management and workers. It should be the responsibility of the management to supply full information on all subjects to councils of management, which should be entitled to discuss all matters pertaining to the establishment other than financial. Matters which fall within the purview of collective bargaining should, however, be excluded from the scope of their discussions. Labour welfare problems might be discussed in work committees in the first instance and later brought up, if necessary, before the Council of Management.

9. In view of the fact that the public sector will grow rapidly; in its capacity as employer the State should set appropriate standards

The management of a public undertaking should not seek exemption from laws or ask for concessions not available to the private sector.

10. A developing economy calls for a wage policy which ensures rising real wages for workers. Such a policy can only be based on increase in productivity, accompanied by a firm assurance to labour that an equitable share will accrue to it. It is necessary to examine whether the existing system of determining wages so as not to affect marginal units should not be changed so as to take into account the working of average units as a basis for wage fixation. Payment by results should be encouraged and extended to areas where it does not at present prevail subject to a minimum (Fallback) wage. This should be done in consultation with workers.

11. Steps need to be taken to organise a wage census and also to place the various working class cost of living indices on an uniform basis. While it is important to evolve principles of wage determination consistent with the pattern of society envisaged, tripartite wage boards are required to be set up immediately in all industries for settling wages disputes.

12. The Employees' Provident Scheme is proposed to be extended to cover industries and commercial establishments not yet included within its scope. The proposal is that industries having a complement of 10,000 workers in the country as a whole and commercial establishments should be covered during the plan period. The rate of contribution is proposed to be enhanced from 6-1/4 to 8-1/3 per cent. The financial aspects of these proposals are under consideration.

13. For the improvement of working conditions special stress should be laid on the implementation of the existing legislation. In addition, legislation should be undertaken to regulate conditions of work in the construction industry, in transport services, and in shops and commercial establishments. The problem of contract labour should be investigated with a view to affording such protection as may be found feasible.

14. The Agricultural Labour Enquiry which was carried out five years ago and the reports of which are now available, has revealed the magnitude of the problem of unemployment and underemployment among agricultural labourers. Under existing conditions the fixation of minimum wages cannot provide effective assistance to this section of the population. The subject has been considered in an earlier chapter in relation to problems of village development. Here it is sufficient to draw attention to it and to suggest that measures to improve the conditions of living of agricultural workers and the

employment opportunities open to them are a matter which should receive systematic and continuous attention on the part of Central and State Governments and that there should be periodical evaluation of the progress achieved in implementing them.

15. A welfare fund similar to the welfare funds now provided for coal mines and mica mines should be instituted for the manganese industry. The possibilities of unified administration of such funds should be considered.

16. In the field of workers' education, works schools for workers' children and a scheme for training trade union workers should be organised.

17. The Central Labour Institute, which is now being set up in Bombay, will be expanded under the second plan. Wings for the study of industrial psychology and industrial physiology are being added and a number of new investigations will be undertaken. Industrial health safety and welfare museums are to be established at Calcutta, Madras, and Kanpur.

18. The second plan has allocated about Rs. 26 crores for implementing schemes relating to labour. In their plans several States have provided for Welfare Centres for workers which will be financed and operated mainly by employers and workers' organisations with the State Government making a limited contribution.

19. For the second five year plan, with its emphasis on the development of industry, minerals, and transport and the increasing demand for skilled services, considerable emphasis is being placed on the provision of training facilities. The existing training centres administered by the Ministry of Labour, which are now to be transferred to the States, provide training facilities for 10,000 persons. During the second plan facilities for additional 20,000 persons per annum will be organised. To meet the requirements of skilled personnel, arrangements for training apprentices in the first year of the plan are being made and it is proposed to expand these progressively so that by the end of the plan period 5,000 apprentices are trained each year in industrial establishments. As the expansion of training facilities depends largely on trained instructors being available, two institutes for this purpose are being set up.

20. The large industrial programme in the second plan will also make a heavy demand on the services of employment exchanges. These will now be placed under the administration of State Governments with the Central Government exercising coordinating functions. The scope of employment exchanges is being enlarged, so

that they also become agencies for collecting employment market information, thereby rendering valuable assistance in the implementation of plans for increased employment. The number, of employment exchanges is to be increased from 131 to 256 during the second plan.

VI

REHABILITATION OF DISPLACED PERSONS

After partition the relief and rehabilitation of displaced persons from West and East Pakistan was a major national task. The first five year plan accorded a high priority to the rehabilitation of 8.53 million displaced persons and provided for a total outlay of Rs. 136 crores.

DISPLACED PERSONS FROM WEST PAKISTAN

2. At the end of the first plan nearly 2.3 million displaced persons from West Pakistan have been settled on land and their rehabilitation has been assisted with loans and grants. In urban areas, 1.2 million persons have been accommodated in evacuee houses and another million persons in 200,000 newly constructed tenements. In order to enable displaced persons in urban areas to settle down in small-scale business, industry or profession, loans upto Rs. 5,000 per family have been advanced by State Governments. Loans for larger undertakings have been advanced by the Rehabilitation Finance Administration. Vocational training centres have been established and about 75,000 persons have so far been trained in various occupations and 6,000 are at present receiving training. Financial assistance has been provided to private educational institutions catering to the educational needs of displaced students. Stipends, freeships, grants and scholarships have been given to displaced students. Fourteen townships have been built to assist displaced persons in finding shelter and employment. In these, provision has been made for developing civic amenities like water-supply, drainage and electricity. In order to expand employment opportunities in the townships, recently schemes have been approved for encouraging the establishment of industries with a measure of Government assistance. The industries so far started are estimated to give employment to 11,000 displaced persons both from East and West Pakistan. The compensation scheme for displaced persons from West Pakistan is now being implemented. Until this scheme has been carried out fully, the rehabilitation of these displaced persons will continue to require attention.

DISPLACED PERSONS FROM EAST PAKISTAN

3. There has been a continuous influx of displaced persons from East Pakistan into West Bengal and neighbouring States. Out of 3.83 million persons who have so far migrated, about 388,000 families have been settled on land and other ancillary occupations. About 350,000 residential units have been constructed in rural and urban areas mainly by displaced persons with loans from the Government. About 22,000 displaced persons have been given vocational and technical training and 8,000 are now under training. Business loans have been advanced to about 88,000 families. The continuing influx of displaced persons has made the problem of rehabilitation in the eastern States particularly difficult. At present it is estimated that about 170,000 families require to be rehabilitated.

REHABILITATION PROGRAMMES IN THE SECOND PLAN

4. Schemes of rehabilitation under the second plan fall under the following groups: (1) Urban loans, (2) Rural loans, (3) Development of Agricultural land, (4) Housing, (5) Development of medium, small and cottage industries, (6) Education, (7) Vocational and technical training and (8) Medical facilities. Loans will also be given by the Rehabilitation Finance Administration. A sum of Rs. 90 crores has been provided under the second plan for executing these programmes. A major portion of this outlay will naturally be on programmes for the rehabilitation of displaced persons from East Pakistan. However, as explained earlier, on account of the time needed to complete the compensation scheme, some provision has also been made for displaced persons from West Pakistan.

5. Under the scheme for rural loans, approximately 80,000 displaced persons from East Pakistan are proposed to be given assistance for settlement on land and in ancillary occupations in rural areas. The acquisition and development of agricultural land in States other than West Bengal for the resettlement of displaced agriculturists from East Pakistan, is a matter requiring urgent attention. The National Development Council has called upon States to make special efforts to provide land for East Pakistan displaced persons. Efforts are being made to locate suitable blocks of land in several parts of the country, especially in Orissa, Vindhya Pradesh, Mysore, Andhra, Hyderabad.

6. Under the scheme for urban loans, about 20,000 displaced families from East Pakistan are expected to receive assistance. Provision on a tapering basis has also been made for a small proportion of displaced persons from West Pakistan, especially those who will have no claims under the compensation scheme or whose claims are

very small. Of the loans to be advanced by the Rehabilitation Finance Administration the greater part will go to applicants from the eastern States. The housing programme for displaced persons from West Pakistan aims mainly at completing the construction work now under way and for the development of townships and colonies which have been already established. Under the housing programme for displaced persons from East Pakistan it is proposed to advance loans to about 13,000 families at an average rate of Rs. 2,500 per family, and to undertake the construction of about 12,000 units at an average cost of Rs. 5,000 per unit. Schemes have also been drawn up for developing existing colonies and for granting assistance to municipalities and local bodies for providing civic amenities to colonies of displaced persons.

7. A substantial provision has been made under the second plan for promoting medium, small and cottage industries in refugee townships and colonies both in the eastern and western regions and at other places having large numbers of displaced persons. Arrangements are being made for the proper coordination of these industrial schemes with the general programmes of industrial development under the plan.

8. The programme for assisting displaced students and private educational institutions will be continued on a limited scale in the western region. In the eastern States, provision is being made for the establishment of some new colleges in the suburbs of Calcutta and a large number of primary and secondary schools. The programme for imparting training to displaced persons in different vocations, with a view to enabling them to become skilled workers and technicians will be continued, and 70,000 displaced persons are proposed to be trained during the period of the second plan.

9. The influx of displaced persons from East Pakistan which has taken place during the past year has made it necessary to provide for special medical facilities in different townships and colonies in the eastern zone. New hospitals in urban areas and dispensaries-cum-maternity centres in rural areas, are proposed to be opened as the available facilities are not adequate. Provision will also be made for additional beds for displaced persons in T.B. hospitals and sanatoria.

10. The lines which rehabilitation programmes will follow during the second plan have been explained above. Increasingly, rehabilitation programmes are being coordinated with general programmes of economic and social development. Problems of rehabilitation of

displaced persons from West Pakistan have become to a large extent part of the overall problems of economic development in States in which they have been resettled in large numbers. The situation in respect of displaced persons from East Pakistan requires that the various programmes should be reviewed from time to time so that they can be modified or strengthened as circumstances may demand.

VII PROHIBITION

For many years a considerable section of public opinion has urged that prohibition of consumption of intoxicating drinks and of drugs injurious to health should be carried out as an essential item of social policy. In Article 47 of the Constitution this has been already accepted as a directive principle. Since progress in this respect had been on the whole meagre, the Planning Commission set up a special committee to examine the experience gained regarding measures adopted by State Governments and to make recommendations for a programme of prohibition on a national basis, indicating the manner and stages in which and the machinery through which this programme should be carried out. The report of the committee which has been recently received is under consideration in consultation with State Governments and the Central Ministries. Here it will be sufficient to indicate the general approach to the subject.

2. In the consideration of any basic social policy, financial considerations, although of great practical importance, are not to be treated as decisive in character. What is important is that the programmes should be so formulated that they can be implemented successfully over a period. For the country as a whole there is need for a common approach towards prohibition, but detailed programmes have to be drawn up by States. Some States will be able to proceed ahead of others and to the extent they do so, they will show the way and provide experience on which other States can base their detailed programmes.

3. A national policy like prohibition has to be approached from different directions such as enforcement measures, growth of the sanction of public opinion, voluntary work of social service agencies and of social workers and the provision of alternative interests and recreations. While the direction will be common, there is room for a degree of variation in the steps to be taken in different parts of the country according to local conditions and circumstances. Each State could formulate a series of specific tasks to be undertaken by it in the various directions mentioned above. The Prohibition Enquiry Committee has suggested April, 1958 as the target date for the enforcement of prohibition uniformly throughout the country.

We consider that there is practical advantage in each State Government approaching the problem in terms of phased programmes setting out specific targets to be achieved over the whole field of social and administrative action. While there should be general agreement on the main directions of the programme to be pursued, with provision for constant review and assessment, it would not be necessary to insist upon identical steps or identical dates for all the States in the Union. On balance this appears to us to be the best way of advancing towards the objective of prohibition.

4. The Prohibition Enquiry Committee has recommended the setting up of a Central Committee to review the progress of prohibition programmes and to coordinate activities in different States and to keep in touch with their practical difficulties. The Central Committee should, it has been suggested, make a report to the National Development Council once a year. We are in agreement with these recommendations. We also think that it will be useful, as the Committee has proposed, that Prohibition Boards and district prohibition committees, should be set up in the States and there should be Administrators of Prohibition to implement the programme.

5. Several of the proposals made by the Committee will need detailed examination by Ministries and States. We suggest that as a first step State Governments may take action in the following general directions:

- (1) discontinuance of advertisements and public inducements relating to drink;
- (2) stoppage of drinking in public premises (hotels, hostels, restaurants, clubs) and at public receptions.

In applying rules to this effect, care must of course be taken to ensure that the rights of foreign missions are not affected and foreign visitors and tourists are not put to inconvenience or harassment;

- (3) setting up of technical committees to draw up phased programmes with the object of
 - (a) reducing progressively the number of liquor shops both in rural and urban areas;
 - (b) closing liquor shops for an increasing number of days during the week;
 - (c) reducing quantities supplied to liquor shops;
 - (d) progressively reducing the strength of distilled liquor produced by distilleries in India;

(e) closing of shops in and near specified industrial and other development projects areas;

(f) removal of shops to places away from main streets and living quarters in towns and villages;

(4) taking active steps to encourage and promote the production of cheap and healthy soft drinks;

(5) assisting voluntary agencies in organising recreation centres, and

(6) including prohibition as an item of constructive work in national extension and community project areas and social welfare extension projects.

6. This approach has been generally approved by the National Development Council.

CHAPTER XIV
EDUCATION AND SCIENTIFIC RESEARCH

I

EDUCATION

THE nature of the system of education in a country has a determining influence on the rate at which economic progress is achieved and the benefits which can be derived from it. Economic development naturally makes growing demands on human resources and in a democratic set-up it calls for values and attitudes, in the building up of which the quality of education enters as an important factor. The socialistic pattern of society assumes widespread participation of the people in all activities and constructive leadership at various levels. In a period of intensive development, however, the resources to be allocated for education and the targets to be achieved are among the difficult issues which have to be faced in drawing up a plan of economic and social development. In recent years, there has been a great deal of re-examination of the pattern of education, and on several issues the opinion of educationists has crystallised into fairly specific proposals for change, as indicated in the recommendations of the University Commission, the Secondary Education Commission and a number of committees which have inquired into educational problems during the past few years. For want of resources adequate progress has not been possible in implementing some of these proposals. A careful examination of educational programmes to be carried out during the period of the second plan is at present in progress. In this chapter attention is drawn to some aspects of the problem in the context of the second plan and a number of suggestions which merit consideration are offered.

2. One of the directive principles in the Constitution is that the State shall endeavour to provide within a period of ten years free and compulsory primary education for all children until they complete the age of fourteen years. Before the first plan was initiated the facilities available at the primary stage could provide for 42 per cent of the children of the age-group 6-11 years. Of this, the percentage for boys was 59 and for girls only 25. At the end of the first plan additional facilities are expected to be available for 50

per cent. of the children in this age-group, the number of boys and girls at school being 68 and 32 per cent. respectively. In the age-group 11-14 years, the proportion of children for whom facilities are available has risen from 14 to 17 per cent., but only 20 per cent. of the children at school are girls. For children in the age-group 14-17 years, over the period of the first plan, the number of pupils has risen from 6.4 per cent. to 9 per cent., but girls account for about one-sixth of the numbers at school. Large numbers of children, especially in rural areas, leave school after attending for two or three years. This is a form of wastage which has to be eliminated.

3. These figures suggest certain basic questions about the rate at which advance in education can be achieved *pari-passu* with economic development programmes which claim inevitably a large share of the available resources. For the second five year plan the total outlay proposed for education is Rs. 320 crores, in addition to the existing committed annual expenditure on schemes completed during the first plan period and the funds allotted for education in the programme of national extension and community projects. Of this Rs. 225 crores have been provided in the plans of States and Rs. 95 crores in the plan of the Central Ministry of Education. The tentative distribution of the amount provided for education is as follows:

			(Rs. crores)
Administration	...	...	7.4
Primary (Junior Basic) Education	...	...	82.6
Middle School Education	...	...	24.2
Secondary Education	...	...	42.5
University Education	...	...	66.9
Technical Education	...	...	49.3
Social Education	...	...	5.0
Miscellaneous	...	...	42.1
			320.0

The different stages included in this programme are reviewed in the paragraphs which follow.

ELEMENTARY EDUCATION

4. If the programmes which have been worked out are implemented, it is expected that at the end of the second plan education will be available for 60 per cent. of the children in the age-group 6-11 years and for 19 per cent. of the children in the group 11-14 years. The number of pupils will increase by 6.6 million at the primary stage and by 800,000 at the middle stage. These targets

will require the establishment of 60,000 new primary schools and 5,000 middle schools. The number of basic schools is expected to be 12,000 and along with those converted from existing institutions the basic schools would account for about 13 per cent. of the total number of primary and middle schools. It is clear that in view of the magnitude of the problem a much higher rate of progress must be secured. In the implementation of this programme, special attention will need to be given to the training of teachers. The proportion of trained teachers in primary schools was 59 per cent in 1950-51 and is estimated to be about 64 by the end of the first plan. During the second plan it is expected to increase to about 75 per cent.

5. It is essential that despite limitations of resources every effort should be made to implement in the course of the next 10 years the directive of the Constitution relating to free and compulsory education upto the age of 14 years. A great deal of joint planning and action on the part of the Central and State Governments will be needed and many special measures will have to be adopted if this aim is to be achieved even by the end of the third five year plan. In particular, it would be necessary to examine any possible economies and eliminate wastage and thus ensure that the available resources go further than they would in the ordinary course. Steps have also to be taken to augment these resources through local community effort. For the promotion of girls' education, too, special measures will have to be taken urgently. If the existing trends continue, it is possible that by the end of the second plan about 80 per cent. of the boys in the age-group 6-11 years may be at school, but the proportion of girls will still be less than 40 per cent. This disparity is to be found not only amongst boys and girls but also as between different regions because in some parts of the country progress in education continues to be much below the national average.

6. The suggestion that means should be found for securing greater economy in public expenditure on elementary education sometimes invites the criticism that this will adversely affect the quality of education. There is no question that a good system of education has to provide for quality as well as quantity and that neither aspect can be ignored. For attaining better standards, practical experiments and continuous emphasis on improved methods are of great importance. Training facilities for teachers, adequate provision of books, teaching aids and equipment and organisation of the teaching profession so as to attract able personnel are some of the conditions necessary for raising standards. Naturally, in the present phase of development, adequate provision in terms of numbers is an immediate necessity. The school has a vital role in village reconstruction and it is essential that by the end of the second plan, no

village with a population of, say, 500 or more should be without its own schools. Once a school is established, its improvement generally on the lines of basic education would have a high priority. The programme for developing basic education and for bringing about other improvements should be ~~simultaneously~~ pursued and fully supported by carefully planned experiments.

7. For securing a rapid increase of facilities at the primary level steps should be taken to reduce the cost of education. Economies could be sought in several directions and, more especially, (1) by way of reducing public expenditure on buildings, (2) by organising schools on the shift system and (3) so far as may be feasible, by educating together boys and girls of the age-groups 6-11 years. Under village conditions the establishment of new primary schools need not be contingent on the provision in advance of buildings conforming to prescribed standards. For the greater part children can study in the open and under the shade of trees, buildings serving a subordinate purpose. Common buildings like village temples and *panchayat ghars* where they exist, can also be used for schools and for purpose of social education. Once a school is actively functioning, the provision of a building can be taken in hand as soon as circumstances are favourable and local co-operation is forthcoming. In a number of States ways have been devised for reducing the immediate incidence of the cost of providing buildings, and in this respect there is much scope for exchange of information and experience in different States. In one State, for instance, loans for the construction of primary school buildings are advanced to district school boards from the provident fund collections of primary school teachers. A proposal commending action along these lines was made by a committee appointed in 1951 by the Central Advisory Board of Education to advise on the relationship between State Governments and local bodies in the administration of primary education. Some States have provided for the construction of quarters for teachers. While special assistance may be required for quarters for women teachers, for men teachers the responsibility could ordinarily be cast on village communities.

8. There is a volume of opinion among educationists in favour of devising a suitable shift system as a temporary measure for achieving expansion in education. A shift system will enable a teacher to take a larger number of pupils than is possible in the ordinary way, thus reducing the cost of expansion, both in respect of the number of teachers and the additional buildings needed. It can also be used for providing separate facilities, where necessary, for the education of boys and girls. The idea of shifts can be adapted to urban as well as rural conditions. Experience in Travancore-Cochin, Bombay and elsewhere indicates that the system is not too

difficult to work. A committee of the Central Advisory Board of Education has recently recommended that the shift system may be introduced wherever necessary after a careful survey of the prevailing school situation. It should be tried in the first two classes for basic as well as non-basic schools, and for new as well as existing schools. In the first two classes, the reduction of the total time for each child will not present any special difficulties. The adoption of a shift system has necessarily to be accompanied by a drive for increasing enrolment with a view to introducing compulsion in due course. This is a matter of special importance in the case of education for girls.

9. As an immediate step towards the implementation of the programme mentioned above, the Ministry of Education are arranging in collaboration with State Governments to carry out a detailed educational survey to determine the scope and nature of the expansion needed in each area.

10. The need to supplement resources made available for education from general revenues, whether Central or State, is being increasingly appreciated. In many countries the principal responsibility for providing elementary education rests with the local community. The State authorities encourage local effort by providing adequate grants-in-aid. For fulfilling the directive of the Constitution in 10 years it is essential that Government resources should be augmented in increasing measure through local community action. In recent years local communities have come forward to make generous contributions in land, labour and money for the provision of school buildings. What is now required is, in addition, a contribution towards the cost of maintenance of schools, which will be steady and recurring, not merely sporadic or occasional. To enable local communities to shoulder in some measure the continuing responsibility which this implies, it is recommended that each State should consider enacting legislation to enable local authorities, urban and rural (including village panchayats), to levy a cess for education. The advantage of bringing in this cess as a local measure would be that the responsibility and initiative of local communities would be specially stressed and the people will know that whatever they contribute will be used for their benefit. A degree of flexibility in detail could be provided in the legislation, so that the example of local communities which are progressive and forward-looking can stimulate others to similar action. The education cess could be related to appropriate State and local taxes such as land revenue, property taxes, etc. so as to enable different sections of the community to make their contribution.

11. It has been generally recognised that the low salaries of teachers in many parts of the country come in the way of improvements in the system of elementary education. This is an important consideration when plans for the expansion of education are being formulated. The provision of satisfactory salaries for teachers should be accepted as a measure essential for the effective reorganisation of the system of education. In general, it would be agreed that teachers' salaries should be fixed at levels, consistent with the local pay structure at which suitably qualified persons could be attracted and retained in the profession. The problem in different States is, however, by no means identical. It is at present under examination in consultation with State Governments. Apart from the general question of ensuring reasonable salary levels for teachers, additional remuneration for teachers could also be related to specific circumstances such as the possession of training qualifications, extent of teaching experience and additions to normal work on account of the introduction of a second shift or responsibility for running part-time continuation classes or social education classes.

12. The fact that teachers are now employed by various authorities—State Governments, Municipalities, District Boards and private bodies—is an important element in the variations in salaries, standards, working conditions and prospects of teachers which exist within the same State. A suggestion has been made that all elementary school teachers in a State should be brought into the service of the State Government in appropriate grades. When the services of teachers are placed at the disposal of local or other bodies, according to the cadres to which they belong, their terms of appointment can be maintained. This will enable State Governments to extend to teachers adequate benefits of security, pension, provident fund contributions, promotion, the opportunities to qualify for higher grades and the other appropriate amenities.

SECONDARY EDUCATION

13. Steps to implement the pattern of re-organisation for secondary education recommended by the Secondary Education Commission have been initiated during the past two years. With the provision of Rs. 43 crores in the second plan as against Rs. 22 crores in the first, it is hoped that the reorientation of secondary education will be carried a step further. Among other programmes, a proportion of the existing high schools will be converted into higher secondary schools and multipurpose schools. In the first plan, about 250 multipurpose schools have been established. During the second plan the number of multipurpose schools is to be increased to 875. The number of high and higher secondary schools (which generally include

middle classes) will increase from 10,800 to 11,300 at the end of the second plan. During the next plan the numbers at schools in the age-group 14-17 years will increase from 2.2 million to 2.6 million or 10 per cent of the population in the age group.

14. Programmes in the second five year plan require for their implementation large numbers of skilled workers, technicians and specialists with a background of elementary or secondary education followed by basic training for specific vocations. Thus, the requirements of teachers, workers in national extension and community projects areas, cooperative personnel, revenue administration, technical and supervisory personnel in industry, agriculture and other fields of development have to be met mainly from the age group of 14-17 years. In this group there is at present a great deal of wastage, and misdirection, as may be seen from the fact that 50 per cent or more of students who take matriculation or equivalent examinations fail to qualify. It is common ground that, at the secondary stage of education, there should be increasing diversification of courses, so that students can be trained in different vocations according to their interests and capabilities. This object is proposed to be attained through the introduction of craft courses, better facilities for science teaching, establishment of multi-purpose schools and junior technical schools. Junior technical schools will provide three-year courses in technical and vocational subjects to be taken up by students after completing their middle (or senior basic) education. As a beginning 50 Junior technical schools are to be established but, naturally, they will be needed in much larger numbers as the re-orientation of the system of education proceeds. In this connection the training programmes of the Ministry of Labour and apprenticeship schemes proposed in the plan are also of great importance.

15. At the end of the first plan, about 60 per cent of the staff in secondary schools consists of trained teachers. According to the plans of States, the proportion of trained teachers will now increase to 65 per cent. The training of secondary teachers for vocational courses in multipurpose and junior technical and other schools will need a great deal of attention. The teaching of crafts in elementary and secondary schools is one of the essential features in the reconstruction of the system of education but progress in providing such courses is held back by lack of suitable teachers. The State plans provide for the training of 500 degree teachers and 1,000 diploma teachers. These proposals are being reviewed as larger numbers are likely to be needed.

UNIVERSITY EDUCATION

16. During recent years there has been a large increase in the number of students in universities and colleges. At the end of the

first plan the number estimated is 720,000 as compared to 420,000 five years ago. The number of students qualifying in degree and higher examinations in arts, commerce and science has arisen during this period from 41,000 to 58,000. These figures indicate the volume of wastage that occurs in this field. For improving the quality of university and college education and for reducing the wastage a number of measures are being taken by the University Grants Commission. The introduction of diversified courses at the secondary levels may succeed to some extent in checking the rush of students to colleges. The question of whether and to what extent possession of degrees can be dispensed with for the purpose of recruitment to public services is also at present being examined by a committee appointed by the Central Government. Affiliated colleges, in many of which the prevailing standards are unsatisfactory constitute another important problem, which is now receiving the attention of the Central Government. It is of the utmost importance that by action at the secondary as well as at the university levels and through appropriate changes in the conditions and methods of recruitment to public services university education acquires greater purpose and direction and thereby makes an increasingly significant contribution to national development.

SOCIAL EDUCATION

17. The census in 1951 showed that only 16.6 per cent of the population was literate and if children below 10 years are excluded, the proportion only rises to 20 per cent. Apart from the low percentage of literacy, there is serious disparity in literacy between men (24.9%) and women (7.9 per cent) and between the urban population (34.6 per cent.) and the rural population (12.1 per cent.). Considerable importance therefore, attaches to the programme of social education which is now being implemented mainly through the community development and national extension programme and through the work of non-official agencies. As essential reforms proposed in the system of education are carried out, it should become possible to develop facilities for continuation classes and social education classes in increasing proportion in elementary and secondary schools. The second plan envisages increase in training facilities for social education organisers, setting up of Janata colleges, opening of village and district libraries, provision of audio-visual aids and production of literature for children and adults. It is proposed shortly to establish a Fundamental Education Centre for training social education organisers and continuing study and research in problems relating to social and basic education.

SCHOLARSHIPS

18. With a view to providing greater equality of opportunity in

the field of education and making available educational facilities to deserving students, a number of scholarship schemes were introduced during the first plan. About Rs. 12 crores are being provided in the plan for scholarships, in addition to continuing general schemes introduced during the first plan. Scholarships are provided, amongst others, for students from scheduled tribes, scheduled castes and other backward classes. The programme also includes post-matriculation scholarships, research scholarships, overseas scholarships and cultural scholarships for Asian, African and other foreign students for study in India. As a result of the implementation of these scholarship schemes, it is estimated that during the second plan period assistance will be given to about 250 scholars for study abroad, 74,500 students from scheduled tribes and scheduled castes and other backward classes, 4,000 post-matriculation scholars, 340 fellows and 3,725 research scholars for research training and 2,060 foreign students for study in India. Most of the States have also provided for scholarships, fellowships and schemes of free books etc., at the primary and secondary school level and for special scholarships for technical education. Stipends for vocational and industrial education have been included in schemes sponsored by the Labour and Industries Departments in the States and by the Ministry of Labour at the Centre. Stipends for higher scientific and technological research are given by the Ministry of Natural Resources and Scientific Research, for agricultural research by the Ministry of Agriculture, and for medical research by the Ministry of Health. It would be fair to say that, under the second plan, a good proportion of students, with ability and aptitude, who wish to undertake higher studies and research will be able to do so with practical support from the State.

TECHNICAL EDUCATION

19. In each sector of development technical personnel are needed in rapidly increasing numbers. Steps which are proposed to be taken to augment the existing training facilities for doctors, agricultural and veterinary specialists and others have been explained in the appropriate chapters. Despite the advance made in the first plan, the requirements of engineering and technological personnel will be on a scale exceeding the capacity of existing institutions. This is the main problem in the development of technical education in the second plan.

20. Among the main schemes included in the first plan were the establishment of the Indian Institute of Technology at Kharagpur, development of the Indian Institute of Science, Bangalore, improvement and strengthening of selected non-Government engineering

and technological institutions on the lines proposed by the All-India Council for Technical Education, and grant of stipends for practical training and scholarships for research training. At the end of the first plan, there are 45 engineering institutions of graduate and post-graduate level and 83 institutions of the diploma level compared to 41 and 64 respectively in 1950. The annual outturn of engineering graduates has increased from 1652 in 1950 to about 3600 in 1955 and of diploma holders from 1864 to 4900. In technological courses the out-turn has increased from 521 to 685 in degree courses and from 354 to 460 in diploma courses.

21. During the second plan about Rs. 50 crores have been allocated to technical education for expansion of training facilities with a view to meeting requirements of engineers, supervisors, overseers and other categories of personnel. A number of schemes taken up during the first plan will be completed in the second, such as, improvement of existing institutions at the degree and diploma level and provision of post-graduate courses and research facilities in selected institutions. Among the new courses of study established or expanded during the first plan mention may be made especially of printing technology, town planning and regional planning, architecture and management studies. These will be further developed. Stipends to enable fresh graduates to receive practical training in industry will be continued and about 7000 students are expected to benefit during the plan period.

22. A number of existing institutions which have students from all parts of the country are to be developed further, notably, Delhi Polytechnic, Institute of Technology at Kharagpur, where additional subjects for study and research will be introduced. When fully developed, the Kharagpur Institute will have 1,000 graduate and 800 post-graduate students. In addition to the Kharagpur Institute of Technology, it is proposed to establish three higher technological institutions, one each in the northern, western and southern regions. These institutions will provide post-graduate facilities for all subjects in engineering and technology. The western institute is proposed to be established in 1956-57, the southern institute in 1958-59 and the northern in 1960-61. Each institute will have 800 under-graduate and 600 post-graduate students. The Indian School of Mines and Applied Geology at Dhanbad will also be expanded. Other programmes to be carried out during the second plan are the organisation of refresher courses for technical teachers at four different centres and the training of about 500 teachers in degree institutions and 1,000 in other institutions. A programme for constructing hostels for 4,000 degree students, 5,000 diploma students,

1,800 apprentices, 16,800 junior technical students and 500 teachers will also be implemented. During the plan, it is proposed to establish the Administrative Staff College and the Institute of Management. A Central Institute of Printing is also expected to be established. Finally, provision made for the training of foremen in industries is another feature of the plan.

23. At the end of the second plan, there will be 51 institutions imparting instruction at graduate and post-graduate level, and 104 at the diploma level. The out-turn of graduates in engineering is expected to increase from 3600 in 1955 to 6000 in 1960 and of engineering diplomates from 4900 to about 8000 during the same period.

24. Whether the increase in training facilities proposed above will prove sufficient has been examined by the Engineering Personnel Committee set up by the Planning Commission, whose interim recommendations have been received. The conclusion reached by the Committee is that even with the expansion of facilities for engineering education proposed in the second plan, it would be necessary to provide for additional training facilities for 1,690 additional engineering graduates for service in the fields of civil, mechanical, electrical, tele-communication, metallurgical and mining engineering and 5,750 diploma-holders in civil, mechanical and electrical engineering. Unless these measures are taken, the shortage is likely to be intensified in the later years of the second plan and in the third plan. The committee has recommended that the capacity of existing institutions should be increased by 20 per cent. in graduate training and by 25 per cent. for the training of diploma holders. It has also suggested that steps should be taken to establish 15 more engineering colleges and 62 more engineering schools in different parts of the country. These suggestions which will involve a total outlay of about Rs. 15 crores, are at present under consideration.

25. Increasing demands for skilled workers and foremen and other supervisory personnel will need to be met during the second plan. The Ministry of Labour has a programme for increasing the output of craftsmen by about 20,000 per annum and two institutions are being set up for training craft instructors. Apprenticeship training facilities have to be developed on a larger scale and in this field an important duty is cast upon the management of the better organized enterprises in the private sector. The Ministry of Iron and Steel has set up a directorate of training to coordinate the personnel requirements of steel plants and to ensure the necessary arrangements. In view of the large programme which it has to undertake, the Ministry of Railways proposes to establish a number of new technical schools.

SCIENTIFIC RESEARCH

The first five year plan was devoted to the building up of National Laboratories and other research institutes. The primary object in the second plan is to develop the existing facilities and to bring the work of scientists in the National Laboratories and research workers in the universities to bear upon problems in different fields of national development which press for urgent solution.

2. During the first five year plan National Laboratories for Physics, Chemistry, Metallurgy, Fuel, Glass and Ceramics, Food Technology, Drugs, Electro-chemistry, Road Research, Leather and Building Research were fully organised. Research institutes for Electronics at Pilani and for Salt at Bhavnagar were set up and the National Botanical Gardens scheme at Lucknow was also taken up.

3. The National Laboratories and the various institutes have been engaged both in fundamental and applied research and every effort is being made to link up their work with the needs of industries. In all 188 patents were taken for processes evolved in these laboratories.

4. The research programmes undertaken in the National Laboratories under the direction of the Council of Scientific and Industrial Research and in universities and other centres with assistance from the Board of Scientific and Industrial Research have been recently reviewed in reports published by the Council. The Central Government's outlay on buildings and equipment of the National Laboratories during the first plan is expected to be about Rs. 5 crores; during the same period the total expenditure on the activities of the Council of Scientific and Industrial Research amounted to more than Rs. 7 crores. The reorganisation and development of long-established organisations like the Botanical Survey and the Zoological Survey of India were taken up during the first plan. An important scheme which was initiated at the end of 1953 was the setting up of the National Research Development Corporation for the purpose of developing and exploiting in public interest inventions of various Government research departments and organisations. So far 177 inventions have been reported for development and the necessary factory trials have been arranged for a number

of them. An important field which is now receiving greater attention is that of irrigation and power engineering.

5. The Department of Atomic Energy has made large strides in the programme of research and in training scientific personnel. In connection with research, a Swimming Pool Reactor is under construction. It will help production of isotopes for biological, medical and industrial research, in addition to training reactor engineers. A high power high flux reactor has been received under the Colombo Plan from the Government of Canada and is expected to go into operation by end of 1957. This will facilitate research connected with advanced power reactors.

6. In regard to thorium and uranium, the Atomic Energy Department has carried out geological surveys and has launched upon drilling, mining and extraction activities. A Thorium/Uranium Plant has been put up at Trombay. The department has planned a uranium metal plant and a fuel processing plant.

7. The Atomic Energy Department is handling projects for heavy water production in conjunction with fertilizers at Nangal and at other suitable places.

8. The Universities Grants Commission has given special attention to the strengthening of scientific teaching and research and since its inception 28 universities have received grants to the extent of Rs. 3.5 crores. These grants have helped universities in expanding facilities for research and post-graduate training. Departments for engineering and technology have also been assisted by the Commission to the extent of Rs. 1.7 crores and a few centres for post-graduate research work in technical subjects have been helped.

9. Towards the end of 1954, a committee was set up by the Council of Scientific and Industrial Research for the purpose of planning the work of National Laboratories so as to coordinate it closely with the needs of national development. It is intended to organise research work as far as possible in terms of carefully integrated projects. Substantial funds will be made available for new schemes of scientific and industrial research, the provisional allotment being about Rs. 20 crores. It is proposed to establish certain new institutes, such as the Mining Institute at Dhanbad and the Central Mechanical Engineering Institute and the Scientific and Industrial Museum at Calcutta. It is also proposed that the Council of Scientific and Industrial Research should take over the Central Laboratories, Hyderabad, and the Indian Institute of Medical Research, Calcutta. Other institutes which are expected to be established are a National Biological Research Laboratory, a Desert Research Institute and a Central Institute of

Geophysics. The establishment of a Power Engineering Research Institute is contemplated and special provision is being made for aeronautical research, gas turbine research, investigations into wind power, production of iron without coking coal, investigation of the ionosphere and microphysics of the cloud, and research on essential oils, medicinal plants and biological products. Regional laboratories for the Botanical and the Zoological Surveys are to be established. Among the expansion schemes to be undertaken are the setting up of a Central Herbarium, a Marine Biological Station, a Fresh Water Biological Station and a unit for Animal Population Studies. Provision has also been made for the establishment of small rural scientific laboratories known as *vigyan mandirs*. The *vigyan mandir* scheme has large possibilities of disseminating the scientific approach to local problems.

10. The plan provides for the establishment of a Physical Oceanographic Research Unit at Cochin for bathymetric work, measurement of temperature, sampling of water at surface and at depth, and study of ocean floor deposits. As mentioned earlier provision has also been made for the development of the Indian School of Mines and Applied Geology. Work on the preparation of a National Atlas will be organised during the plan period.

11. The University Grants Commission has drawn up proposals for assisting scientific and industrial research and higher technological education. Schemes for the improvement of libraries and laboratories in universities will also be assisted.

12. It is agreed on all hands that special efforts have to be made to bring about rapid development in scientific education and to ensure that the talents of scientific workers find full scope and are utilised in the solution of problems which are closely related to the needs of national progress. In the last analysis the progress of science will determine the rate of economic and social advance. The outstanding work of scientific workers in the country supports the belief that Indian science will make an ever growing contribution to national development.