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## CONTENTS

	PAGE
<i>Success of Planning</i> . . . . .	1
I. RURAL DEVELOPMENT . . . . .	4
II. IRRIGATION AND POWER . . . . .	8
III. INDUSTRIAL UNDERTAKINGS . . . . .	22
IV. SCIENTIFIC RESEARCH . . . . .	34
V. TRANSPORT AND COMMUNICATIONS . . . . .	37
VI. SOCIAL SERVICES . . . . .	42



## SUCCESS OF PLANNING\*

During the past years we have seen the successes that have come out of planning. These successes may not be startling, but they have been very substantial and they have been spread out all over the country, because all the great States in India have worked to that end. We are engaged in a tremendous co-operative adventure—a genuine adventure, not something on which we have merely come to a decision. I do not mean that our present planning is all-pervasive; but it certainly affects every department of national activity.

### APPROACH TO PLANNING

I wish to lay stress on our approach to planning—which is one of consultation with as large a number of people as possible. In the very nature of things planning requires that approach, much more so in the case of democratic planning. However, our approach has to be based more and more on statistical information, not on vague ideas and ideals. Hence the growing importance of statistical data, sample surveys and the calculation at every stage of the results of an action contemplated. We have to calculate our actual resources, the employment potential of the things we propose to do, the production rate, etc.; but above all, if it is to be a Plan, we have to calculate how it connects and how it affects every sector.

It is not a question of putting up a factory here or a factory there; that is not planning. Planning is an interlocking of production, consumption, employment and a large number of other things like transport, social services, education and health. They have all to be brought together. Naturally, we cannot deal with this complicated scheme of human relationships in a vast country of 370 million people in a mathematical way. Nevertheless, we are approaching the problem in a systematic way. With experience, we are adding to our knowledge and our approach is becoming more and more correct, though there is always a large element of uncertainty.

### SOCIALIST PATTERN

Parliament has laid down our objective as a socialist pattern of society. Now, it is important that while we do not wish to have a doctrinaire attitude in these matters, at the same time

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*\*Extracts from the addresses of the Prime Minister, Shri Jawaharlal Nehru, to the National Development Council*



it is necessary that our approach should not be a vague use of the word 'socialism' without any real steps in that direction. There has to be a precise goal and precise thinking about the means by which we seek to achieve it.

In the Standing Committee of the National Development Council stress has been laid, firstly, on a clearer enunciation of our objectives and methods; secondly, on the public sector being given greater importance; and thirdly, on the necessity of encouraging the heavy machine-making industry, as it is the basis of industrial growth.

One approach sometimes put forward is that we should build up our consumer goods industries, saving money thereby to build something else and in this way increase employment. This, from the point of view of planning, is a discarded theory. In fact, it may ultimately take us away from planning. If we want India to go ahead we must industrialize and not concern ourselves with little factories producing consumer goods. We must go to the roots and build up the structure of industrial growth. It is the heavy industries that count, and we should set about building them as rapidly as possible because they will only bear results four, five or six years later. If we do not do it now, we will have to wait for another five-year period.

#### FOREIGN EXCHANGE NEEDS

Unfortunately, all over the world the tendency is for inflationary effects to be produced, and this inflation affects us. If we buy things, they are more expensive. We cannot expect any rapid change; the most we can hope is that things will slowly get better.

Coming nearer home we find that, partly because of the pace of things that are happening abroad and the push we have given to our activities, we have to be on the look-out for more foreign exchange resources. In fact, we have reached a stage where we have to clamp down all kinds of brakes, even at the cost of our activities. We cannot allow inflation to run away with us. It is a situation which has to be faced with vigour and without the least hesitation.

A time has come when we have to be careful about every item, big or small, to see whether it is absolutely necessary, whether it involves the slightest degree of waste, whether we can postpone it—always bearing in mind that the main features of the Plan must go through.



Obviously, the question of inflation revolves round the production capacity of the country. We can only meet this situation by increasing production. We can only effectively meet the foreign exchange situation by more exports. We may get some external help. We welcome it; but the basic way is to have more exports to earn foreign exchange as well as to limit imports. We are going to do both. Even necessary imports will have to be limited because more necessary things have to be done.

We want to increase production all round, but in the final analysis it is agricultural production that is going to increase our capacity to meet the needs of the country. I want to lay stress on this. We will have to work with our sweat and blood to increase our agricultural production. If we do not, we will not be able to get on with the Plan.

#### LONG-TERM PLANNING

Then there is the question of long-term planning and current planning. Long-term planning means not merely five-year planning but 15-year or 20-year planning, in the sense of keeping in mind a broad picture of what we want to achieve in 20 years. It is only when we keep a broad picture in view that our current planning fits in. Otherwise we may stray in the wrong direction and difficulties will arise. For instance, there is much talk of the public sector and the private sector. We have said repeatedly that the public sector must grow. Forgetting the words 'public sector' and 'private sector', the main thing is that economic power should not be concentrated in private hands, that vested interests should not grow up in regard to any strategic or socially important matter and there should be a dispersal of economic power in order to avoid the development of monopolies.

Planning represents our moving, our thinking and our actions. The beginning of a Five Year Plan and the ending of a Plan are significant dates in the nation's history. They are vital and significant because each represents a major step forward. We are constantly thinking, and are constantly achieving and implementing. In the economic sense as well as in the philosophic sense it is a state of becoming something more, so that the nation's history begins to revolve round this concept of planning and Five Year Plans.



## I. RURAL DEVELOPMENT

The First Plan gave the topmost priority to the Development of Agriculture and to rural reconstruction in general. The reasons were, firstly, that there was an acute shortage of food and, secondly, thinking men realized that the process of development must start in the villages, where 85 per cent of the people lived.

The Plan therefore provided Rs. 356 crore out of the total outlay of Rs. 2,378 crore, for agriculture and community development, apart from a large allocation for irrigation. In the Second Plan, although greater emphasis was laid on industries and transport, the actual allotment to this sector was increased to Rs. 568 crores.

### FOODGRAINS

Largely because of favourable monsoons, but also due to better methods of farming, the use of improved seed and fertilizers and the extension of irrigation, the production of foodgrains rose to 65.8 million tons by the end of 1955-56. This was an improvement of 11.7 million tons on the base year (1949-50) and well in excess of the stipulated increase of 7.6 million tons.

In the Second Plan the effort to grow more food continues on a larger scale, the target of additional production being 15.5 million tons. Already, by 1958-59, the production had increased by 8.5 million tons.

### COMMERCIAL CROPS

These crops, which form nearly a third of the total agricultural production, provide the raw material for certain important industries. The progress they made in the First Plan, together with the increases anticipated in the next Plan, and the progress



made upto the end of the year 1958-59 can be seen from the following table showing the main crops:—

Commodity	Unit	Production in 1950-51	Targets for 1955-56	Production in 1955-56	Targets for 1960-61	Production in 1958-59
Cotton	million bales	2.9	4.2	4.0	6.5	4.7
Jute	„	3.3	5.4	4.2	5.5	5.2
Sugarcane (gur)	million tons	5.6	6.3	4.0	7.8	7.2
Oilseeds	„	5.1	5.5	5.6	7.6	6.9

#### MINOR IRRIGATION

About 10 million acres were brought under irrigation by minor works in the period 1951—56 as against 6.3 million acres from large and medium schemes. The target laid down for the Second Plan is to irrigate 21 million acres of new land altogether, of which 9 million acres will be served by the smaller works. Surveys have already been completed in some States for the location of small irrigation schemes in scarcity areas.

In 1951, there were about 2,500 tube-wells in India, of which 2,300 were in U.P. These tube-wells irrigated about 1 million acres. In the First Plan a large construction programme was undertaken, and by the end of 1955 a total of 4,422 new tube-wells had been built—2,286 under the Indo-U.S. Technical Co-operation Programme, 93 under the Grow More Food programme and 2,043 by the States of Bihar, Uttar Pradesh, Punjab and Bombay. A start was also made with a programme for drilling deep exploratory tube-wells in order to assess ground water resources which might be used for irrigation. This is being continued.

The Second Plan provides Rs. 20 crore for the construction of 3,581 tube-wells in a number of States, of which 1,500 will be in Uttar Pradesh.

#### LAND RECLAMATION

The reclamation of waste land for agricultural operations was an important factor which contributed to the rise in crop production during the First Plan. By the end of 1955-56, about 14 lakh



acres were reclaimed through the Central Tractor Organization and about an equal area through the States' tractor organizations. In addition, about 5 million acres were improved by cultivators through various aid programmes.

By the end of the Second Plan period, it is planned to reclaim 1.5 million acres and to improve a further 2 million acres through the C.T.O., the States' organizations and the manual labour of cultivators.

#### KEY VILLAGE SCHEME

This scheme, which was introduced during the First Plan, is an excellent means of livestock improvement in selected areas. A key village is a compact area of three or four villages having about 500 cows of breeding age. All unwanted bulls in key villages are castrated or removed, and only specially selected animals are used for breeding. In many areas artificial insemination centres are set up.

During the First Plan 600 key villages and 150 artificial insemination centres were set up. The programme during the Second Plan is to increase the number of key villages to 1,258 and of artificial insemination centres to 245. By the end of 1957-58, 302 additional key villages and 60 artificial insemination centres had been established.

#### COMMUNITY DEVELOPMENT

This programme, which aims at improving agriculture, health, sanitation, education, housing and all other aspects of rural life with the active co-operation of the people themselves, was started in October 1952 in 55 selected areas. The programme was extended rapidly so that, by the end of the First Plan, 2,152 Community Development and National Extension Service Blocks, covering 1,57,000 villages and a population of 88.8 million had been set up.

The Second Plan provided Rs. 200 crore for this programme with the object of covering the whole of rural India by the National Extension Service. In April 1958, however, the pattern of development was modified to do away with distinction between the Community Development and the National Extension Service Blocks. Instead, a uniform pattern of development for all blocks, comprising two stages, the intensive development stage (lasting five years) and the less intensive development stage (lasting another five years), was introduced. It was further provided that under the



revised pattern of development, the whole country would be covered, not by the end of the Second Plan, but by the end of October, 1963.

By the end of 1958-59, the number of Development Blocks had increased to 2,405. These covered 3,03,000 villages and a population of 165.1 million.

#### FISHERIES

Fishing is an important industry of India, specially for people in Bengal, Bihar, Orissa, Madras, Assam, Bombay and the coastal areas, for whom fish forms a very important item of diet. The First Plan made a provision of Rs. 4 crore for the development of fisheries, both inland and marine. Of this Rs. 2.8 crore were actually spent, the resultant increase in production being about 10 per cent, from 1 million tons to 1.1 million tons. In the Second Plan, a provision of Rs. 9 crore was made under this head. Of this, about Rs. 6.1 crore had been spent by the end of 1959-60. The most important project undertaken during the period is in Kerala State which has been started with the help of the Norwegian Government.

#### RURAL ELECTRIFICATION

As our villages are scattered, and most are situated far from developed power sources, the cost of providing them all with electricity would be enormous. For instance, it is estimated that the capital outlay on distribution lines alone would exceed Rs. 3,000 crore. Therefore, much as we would like to have electricity in every home as soon as possible, the programme has to be carried out by stages.

Almost all towns with populations of more than 20,000 had electric power supply by the end of the First Plan. In addition, about 40 per cent of the towns having populations between 5,000 and 20,000 had been electrified.

An important part of the Second Plan is to extend electrification facilities to about 90 per cent of the smaller towns so that they can serve as centres for the development of the adjoining rural areas. It is also intended to electrify 13,900 villages, with populations of less than 5,000, which lie close to the main grid lines.

By the end of 1958-59, about 2,000 towns with population between 5,000 and 10,000 and 12,000 villages having population of less than 5,000 had been provided with electricity.



## II. IRRIGATION AND POWER

Water for the fields and power for industrial development—these were two of the most urgent needs of the country at the start of the First Plan. An ambitious irrigation and power programme was therefore drawn up by the Planning Commission and a total of Rs. 585 crore was allocated for this sector. Some of the benefits of this gigantic programme are already being felt, and they will keep on increasing as each project is completed. The programme for the Second Plan, for which a total provision of Rs. 913 crore, including Rs. 60 crore for flood control, has been made, covers 217 new irrigation projects, 12 of which will cost more than Rs. 10 crore each, and 44 new hydro and steam power generation schemes, of which also only 10 will cost more than Rs. 10 crore each.

The major projects undertaken before 1951 and during the First Plan, as well as those which are now being taken up, are:

### BHAKRA-NANGAL

One of the most ambitious multi-purpose development schemes we have undertaken is the Bhakra-Nangal Project which will bring life-giving water to a vast area in north-west India where famine has been a constant threat since the bulk of the canal system was lost with Partition.

The project comprises two dams, a large number of canals, four power houses and a vast net-work of transmission lines with scores of sub-stations spread over the Punjab, Rajasthan, Himachal Pradesh and Delhi.

The special feature of this project is a straight-gravity concrete dam, 740 ft. high, across the Sutlej at the Bhakra gorge about 50 miles upstream from Rupar. The dam, a major portion of which (about 500 ft.) is already complete, is impounding the waters of the Sutlej for irrigation and the generation of power. Two power houses at Kotla and Ganguwal are already functioning and another two are to be built at the foot of the dam. Unfortunately, the hoist chamber on the right diversion tunnel of the left bank power house was damaged early in August 1959.



Prompt remedial measures were taken to repair this damage and the power house was completely de-watered by January 1960.

Due to damage to the chamber, much progress could not be made in the concreting of the dam, after August 1959. About one-fourth of the work, therefore, still remains to be completed.

Eight miles downstream from Bhakra is the 95 ft. high Nangal Dam. This Dam, which has a storage capacity of about 24,000 acre-feet of water, was completed in 1952. The Nangal Hydel Channel, which has also been completed, takes off from the left bank of the river above the Nangal Dam. Running for about 40 miles through difficult sub-montane country, its construction is a major feat of engineering. It is capable of carrying 12,500 cusecs of water, feeding the two generating stations at Ganguwal and Kotla as well as the canal system below Rupar.

The Ganguwal power house was brought into commission in January 1955 and the Kotla power house in July 1956. Together they supply power to the Bhakra Works, Delhi and to many towns in Punjab. The left bank power house at the Bhakra Dam, despite the accident, is expected to be completed by September 1960. It will have five units of 90,000 kW each. A third generating unit of 29,000 kW is being added at both the Ganguwal and Kotla power houses. In all, 604,000 kW are expected to be generated by these three power houses by 1961. The total length of the transmission lines which will carry this power to places in the Punjab and the neighbouring States will be about 2,300 miles.

The excavation of the Bhakra canals in the Punjab has been completed and the canal system was opened by the Prime Minister in July 1954. In Rajasthan the work is expected to be completed shortly. During 1955-56, the canal system served more than 1 lakh acres of non-perennial irrigation in Rajasthan, 9.6 lakh acres in the Punjab and 1.4 lakh acres in the then State of Pepsu. When completed, the 3,000 miles of canal branches and distributaries will irrigate 36 lakh acres in these States.

The project is scheduled to be completed by 1961. The main work remaining is that on the Bhakra Dam and its power houses and completion of the transmission system.

According to present estimates, the total cost will be nearly Rs. 170 crore, of which Rs. 24.8 crore was spent before the First Five Year Plan began.



## DAMODAR VALLEY PROJECT

The Damodar Valley has been called the potential Ruhr of India. In no other part of this vast country are so many types of industrial raw materials found together in such quantities. The Upper Valley possesses nearly all of India's copper reserves, all her kyanite, 98 per cent of her iron ore, more than 80 per cent of her coal and about 70 per cent of her mica and chromite resources. The lower basin of the river is flat, alluvial land and one of the most fertile tracts in the country.

The Rs. 132 crore Damodar Valley Project, which aims at providing irrigation, power and flood control for this rich region, is a joint venture of the West Bengal, Bihar and Central Governments. It was to be completed in two phases. The first phase, which began in 1948, comprised (1) four dams at Tilaiya, Konar, Maithon and Panchet Hill, with hydro-electric stations attached to all save the Konar Dam, where this has been postponed; (2) three thermal power stations at Bokaro, Durgapur and Chandrapura with an ultimate capacity of 2,25,000 kW, 1,50,000 kW and 2,50,000 kW, respectively; (3) 800 miles of transmission lines and a number of power sub-stations and receiving stations; and (4) an irrigation barrage at Durgapur, with 1,550 miles of irrigation and navigation canals and distributaries.

The second phase included hydro-electric dams at Aiyar, Bokaro and Balpahari and a hydro-electric weir at Bermo.

Most of the work envisaged in the two phases has already been completed, except for the Durgapur and Chandrapura stations. A concrete gravity-type dam, 1,200 ft. long and 99 ft. above the Barakar river-bed, was constructed at Tilaiya and completed in December 1952. The water in this reservoir irrigates 20,000 acres. The power house attached is supplying power to its full installed capacity of 4,000 kW.

The Konar Dam has also been completed. This is a 848 ft. long concrete gravity-type dam across the Konar river-bed. The water stored in the reservoir is at present utilized by the Bokaro Power Station for cooling purposes. Later it will also be available for irrigation, serving over 71,000 acres in the two crop seasons, and for the generation of 20,000 kW of power in an underground power house.

The third important item completed is the Bokaro Power House, one of the biggest plants of its kind in the East. Coming into operation in early 1953, it was meeting a demand of 1,63,000 kW at the end of September 1959.



Maithon Dam, which is across the Barakar river just above its confluence with the Damodar, has been completed. The composite dam is 12,712 ft. long and 162 ft. high. This project is mainly for flood control, but it will also irrigate 2,70,000 acres in the lower valley. The underground power house with three generating units with a capacity of 20,000 kW each has been completed and commissioned.

The Panchet Hill Dam, which comprises a 7,135 ft. long main earth dam with 1,215 ft. concrete spillway and dykes on both sides, has also been completed. This dam, together with that at Maithon, assures the lower Damodar Valley of reasonable protection against floods.

The reservoirs attached to these four big dams release water to a barrage at Durgapur, which will eventually provide perennial irrigation for an area of nearly 10,44,000 acres. The barrage, which was completed in 1956, is a concrete structure 2,271 ft. long and 38 ft. high. The irrigation system includes two canals on either side of the Damodar, the headworks of which have been completed. The left bank canal, which will be 85 miles long, will connect the Hoogly, thus providing a new transport route between the Raniganj coalfield and Calcutta. Besides, there will be 1,465 miles of branch canals, distributaries and drainage channels.

#### HIRAKUD

The Hirakud Project, the aim of which is to develop the Mahanadi basin, is nearing completion. It comprises (1) a huge dam—the largest in India—situated just below the confluence of the Mahanadi and Ib rivers, nine miles from Sambalpur in Orissa; (2) canals taking off from either side of the reservoir; and (3) a power house at the dam site. It will cost about Rs. 70·78 crore.

The dam is 15,748 ft. long and 200 ft. high, with 12·8 miles of low earthen dykes on all sides. A total length of 3,768 ft. of the main dam is built of concrete and masonry. The reservoir, which like the dam is the largest in India, has a gross storage capacity of 66 lakh acre-feet. It is intended to provide water for 5·62 lakh acres in Sambalpur and Bolangir districts of Orissa. The two canals taking off from the reservoir have also been largely completed and are already irrigating about 3·4 lakh acres. Further areas will be brought under irrigation as the excavation of field channels progresses.



In the power house at the dam all the four sets have been completed and commissioned. They have a total installed capacity of 1,23,000 kW.

Another power house has been sanctioned for construction at Chiplima, 14 miles below the main dam, in the second stage of the project, for which the Second Plan provides Rs. 11.87 crore. The lower Mahanadi basin is an area of considerable mineral and forest wealth which will be speedily developed as the power supply increases.

#### KAKRAPAR

This project on the Tapi river in Bombay State forms part of a more comprehensive programme for the development of the lower Tapi valley. The scheme is to build a 2,038 ft. long weir across the river near Kakrapar, 50 miles upstream from Surat. Two canals, one on either side of the river, will irrigate 6.54 lakh acres.

The headworks were commissioned in June 1953, and the earthwork in the main canals, and the right and left bank sluices were completed in 1955. The canal system is expected to be completed by 1963. The total cost of the project has been revised to Rs. 18.65 crore.

#### MAYURAKSHI

This comprises a dam across the river Mayurakshi at Messanjore in Bihar with a power house of 4,000 kW capacity at the foot, and a barrage 20 miles downstream at Tilpara in West Bengal with a canal system taking off from it.

The barrage, which is 1,013 ft. long, was completed in 1954. The 2,170 ft. long dam and the power house have also been completed. Two canals, which irrigate 7.2 lakh acres annually in West Bengal and about 25,000 acres in Bihar, were completed in 1957. The entire project has cost about Rs. 16.1 crore.

#### KOSI

The Kosi Project, which will confer a variety of benefits on Nepal and Bihar, is one of the schemes taken up during the later stages of the First Plan. The Kosi is one of the most destructive of Indian rivers, due to the unusually large amount of coarse silt it carries in its descent from the hills. Kosi floods are an annual occurrence and cause great loss of life and property.

The scheme to tame this unruly river, which will cost about Rs. 44.76 crore, comprises (1) a barrage three miles above



Hanuman Nagar in Nepal, where the Kosi leaves the hills; (2) flood embankments on either side of the river; (3) diversion of flood waters into the old channels of the river, and (4) the Eastern Kosi canal system, which will irrigate an estimated 14.07 lakh acres annually. Power to the extent of 21,000 kW can also be generated at the barrage site.

Construction of embankments with the help of the village people and the Bharat Sevak Samaj workers was started in January 1955 and completed in 1958. The barrage is expected to be completed by 1962.

#### CHAMBAL

Another project taken up in the later stages of the First Plan is known as the Chambal project. This will irrigate 14 lakh acres of arid land in Rajasthan and Madhya Pradesh, besides ultimately producing 3,01,000 kW of power. The project envisages the construction of three dams, each with a power house, and a barrage across the river near Kotah with irrigation canals on either side. It is to be completed in three stages. The first stage, which will be over by 1961 and will cost about Rs. 63 crore, consists of (1) the Gandhi Sagar Dam at the border of the two States, which will be a masonry structure 207 ft. high and 1,680 ft. long; (2) a power house at the dam site to accommodate four units of 23,000 kW each; (3) about 770 miles of transmission lines in the two States; and (4) the Kotah Barrage and canals. These works alone will irrigate 11 lakh acres and generate 69,000 kW of power.

The concreting and the earth work on the Kotah barrage has been completed, that on the Gandhi Sagar Dam completed to the extent of about 86 per cent and on the canal system to the extent of 96 per cent.

#### NAGARJUNA SAGAR

This is a new multi-purpose project of Andhra State for the utilization of the waters of the Krishna river. It envisages the construction of a 4,780 ft. (including spillway) long masonry dam near Nandikonda village, about 90 miles below Siddeswaram, and left and right bank canals taking off from the reservoir on either side to irrigate large areas between the Krishna and Godavari rivers in the north and between the Krishna and Pennar in the south, respectively. A power station of 75,000 kW is also planned.



In the first stage the canals will be partially constructed to allow for the irrigation of about 20·60 lakh acres. The full scheme will serve 34·02 lakh acres.

This project was inaugurated by the Prime Minister in December 1955. The first stage will take about nine years to complete at a total cost of about Rs. 91·11 crore.

#### TUNGABHADRA

As the Tungabhadra river flows through Mysore and Andhra, this is a joint venture of the two States. It comprises a masonry dam 7,942 ft. long near Hospet and canals on either side of the river to irrigate 8·3 lakh acres. Hydro-electric power is to be generated at the dam as well as the canal near Humpi, where there is a natural fall of about 100 ft. The total power supply will be 72,000 kW.

The main structure of the dam has already been completed. Two generating sets of 9,000 kW each at the Dam Power House and two similar sets at Humpi Power House have been commissioned. Work on the right bank canal and distribution system lying in Andhra Pradesh was completed in 1957 while in Mysore the work has also been completed except for the distribution system which is in progress. As regards the left canal, work is in progress and is expected to be completed in 1963. On the whole an area of 1·63 lakh acres is expected to have been brought under irrigation by September 1959.

#### BHADRA

This multi-purpose scheme comprises (1) a storage dam 252 ft. high across the Bhadra river at Lakkavali, in Mysore State; (2) power sluices in the dam on either bank to generate 40,400 kW of power ultimately; and (3) two channels, totalling 212 miles in length, to irrigate 244,660 acres. The foundation excavations for the dam have been completed, as also 83 per cent of masonry work. The left bank and the right bank canals have also been practically completed.

The gorge at Bhadra, like that of Bhakra in the north, is an ideal site to impound water for controlled use. The benefits that this project will confer are immense for the investment of Rs. 33·53 crore.

#### GHATAPRABHA

The complete project to utilize the waters of the Ghataprabha in Bijapur and Belgaum districts of Bombay State comprises two storage dams, one at Hidakal and the other at Ajra,



a canal 73 miles long on the left bank of the river and a smaller canal on the right bank. The work, which was started in 1949, is to be carried out in three stages. In the first stage, now complete, the left bank canal has been constructed up to a distance of 44 miles from an existing diversion weir at Dhupdal. In the second stage, for which the Second Plan provides Rs. 8 crore, the canal will be extended to the full distance of 73 miles and its distributary system completed. The Hidakal dam will also be constructed. In the third stage the dam at Ajra and the right bank canal will be built.

#### MAHI RIGHT BANK CANAL

This is an irrigation project in Kaira district of Bombay which, when completed, will irrigate 4.60 lakh acres. Water for the 44-mile canal is being diverted from the river by a 2,600 ft. long masonry weir at Wanakbori. Flood embankments are also to be constructed on either side of the river.

The headworks have been completed and the work on the canals and distributaries is in progress. The cost of the work has been revised to Rs. 22.70 crore.

#### GANGAPUR

The scheme to utilize the waters of the Godavari near Nasik city comprises a 12,500 ft. earth dam, new canals on either side and remodelling of the old canal system taking off from the existing weir at Nandur Madhmeshwar.

The project is to be carried out in two stages. The first stage, which was taken up in 1949 and is almost complete, includes the construction of the dam and the left bank canal and remodelling of the old canals. The dam is located just below the confluence of the Godavari and the Kashyapi, 50 miles upstream of the existing weir. It was completed in 1955. The reservoir has a capacity of 5,500 million cu. ft., and this is to be increased to 7,200 million cu. ft. in the second stage. The 24-mile long Nasik left bank canal is also virtually complete, and the old canals have been improved.

Besides expansion of the reservoir capacity, the right bank canal will be completed during the second stage of the project.

#### KOYNA

The Koyna Hydro-electric Project envisages a concrete-cum-masonry dam about 2,200 ft. long across the Koyna river (one of the main tributaries of the Krishna) at Jalkawadi, near Helwak in North Satara district of Bombay, with an underground power



house. One of the new major schemes taken up towards the close of the First Plan, it is to be carried out by stages.

In the first stage the dam will rise to a height of about 208 ft. above the river-bed. The power house will be located on the western slope of the ghats. The first stage is expected to be completed by 1961. The first block of 60,000 kW of power will be available early in 1961 and a further 1,80,000 kW by 1962. The capacity of the power plant will be increased during the second stage and an irrigation programme is also planned. The total cost of the first stage will be about Rs. 38.28 crore.

#### RIHAND

Estimated to cost about Rs. 46.05 crore, this project envisages the construction of a concrete gravity dam across the Rihand river near Pipri village in Mirzapur district of U.P. The dam will be 3,065 ft. long and 271 ft. above the river-bed. The power house at its base is designed to house five generating sets of 50,000 kW each.

The Rihand Project was included in the First Plan at a late stage, and only about 78 per cent of the concreting work has been done so far. The dam is scheduled to be finished by June 1961, but it may be possible to store water in the reservoir during the 1960 monsoon and also to generate some power. Three units of 50,000 kW capacity each will be installed by 1961.

#### SARDA POWER HOUSE

With the realignment of the Sarda irrigation canal, it has been possible to construct a power generating station at Khatima, near the foot of the Himalayas in Naini Tal district of U.P. This power house, which has an installed capacity of 41,000 kW, is the largest of the many hydro-electric stations in U.P. The plant was formally opened in April 1956. It will serve a vast area in Kumaon, Rohilkhand and Avadh.

#### LOWER BHAVANI

Taken up in 1948, this project was completed in 1956 at a cost of Rs. 9.51 crore. It consists of a dam across the lower reaches of the Bhavani river at Bhavanisagar, about 10 miles upstream of Satvamangalam in Coimbatore district of Madras, with a canal irrigation system. About 10,000 kW of seasonal power is also obtained.

The dam is 28,862 ft. long, of which 1,523 ft. is masonry and the rest earth, the maximum height of masonry work being 204 ft. The main canal takes off from the right flank of the



reservoir and runs for 124 miles. It is intended to serve 2,07,000 acres, mainly in Coimbatore district.

#### MACHKUND

As the Mackhund is a border river, there is a joint scheme of the Andhra and Orissa Governments seeking to utilize the 850 ft. drop at the Duduma Falls for the generation of power.

The full scheme comprises (1) a dam at Jalaput 1,345 ft. long and a reservoir with an ultimate storage capacity of 27,200 million cu. ft.; (2) a 1,037 ft. long diversion dam, 17 miles below Jalaput and  $1\frac{1}{2}$  miles above the Duduma Falls, which will regulate the flow of water into the power house turbines; (3) a tunnel system; (4) a power station with an initial installed capacity of 51,000 kW, ultimately rising to 1,14,790 kW; and (5) a transmission system covering the Andhra coastal districts from Srikakulam to Guntur.

The work was started in October 1946, and was completed in 1959. Power supply has begun. The total cost is about Rs. 27.32 crore.

#### MALAMPUZHA

This project consists of a dam across the Malampuzha river at the foot of the Western Ghats, three miles east of Olavakkot railway station, and a main left bank canal about 20 miles long with branch channels to irrigate Malabar district of Kerala. Penstocks are also provided for power generation at a later date. The total length of the dam, which has been finished, is 6,066 ft., of which 5,337 ft. is masonry and the rest earth. The canal system, too, is complete and irrigation was extended to 39,600 acres in March 1958.

A right bank canal scheme was sanctioned in 1954. It has been taken up and is nearing completion.

#### MANIMUTHAR

The Manimuthar Project, which will irrigate large areas in Tinnevely district of Madras, consists of a dam 11,145 ft. long (largely earth) across the river Manimuthar and a canal taking off from the right side of the reservoir.

The headworks and the canal works have been almost completed at a cost of about Rs. 5 crore.

#### MATATILA

This irrigation and power scheme for Bundelkhand consists of a 2,340 ft. long masonry dam across the Betwa river about 30 miles south of Jhansi and two canals taking off from the



dam to supply water to about 4.13 lakh acres in U.P. and Madhya Pradesh.

The first stage of the project, including construction of the main dam, has been completed. A power house with a generating capacity of 36,000 kW is included in the second stage, which is to be taken up now. The total cost will be about Rs. 11.39 crore.

#### PERIYAR

The Periyar power scheme in Madras State will have three generating sets of 35,000 kW each in the first stage and a fourth unit at a later date. The existing dam on the Periyar river is 150 ft. high and stores 15,632 million cu. ft. of water. A forebay dam has been constructed from which a tunnel leads to the top of penstock pipes. These in turn will run downhill for 3,500 ft. to reach the power house. The head available for power development is 1,263 ft. About 240 miles of transmission lines will transmit power from this station to various load centres. The outlay on the scheme is estimated at Rs. 10.47 crore.

#### *New Projects*

The principal new projects taken up in the Second Plan are: briefly described below:

#### UKAI

A sum of Rs. 7.50 crore has been allotted in the Plan for starting this project which, together with the Kakrapar Scheme, will serve the lower Tapi valley. It consists of a gravity dam on the Tapi, 72 miles upstream of Surat, which will control floods and irrigate 3,91,650 acres in Surat and Broach districts through a canal system. A power house at the foot of the dam, which will be built in the second stage of the project, will have a generating capacity of 1,60,000 kW. The eventual total cost is estimated at Rs. 61.64 crore.

#### PURNA PROJECT

This will comprise (1) a storage dam at Yeldari on the Purna river, a tributary of the Godavari, in Bombay State; (2) a pick-up dam 40 miles downstream near Sidheshar; (3) a 34-mile canal taking off from the left bank and 23-mile canal taking off from the right bank of the Sidheshar dam which, with their distributaries, will irrigate an area of 1,60,000 acres; and (4) a hydro-power station at Yeldari with two (to be increased to three at a



later stage) generating units of 5,000 kW each and 90 miles of transmission lines. The total cost of the project will be about Rs. 7.68 crore.

#### TAWA

Designed to irrigate about 5,90,000 acres in Madhya Pradesh, this scheme is based on a concrete-cum-earth dam across the Tawa river, half a mile below its confluence with the Denwa. The main canal, taking off from the left bank, will be 90 miles long. There will also be a power house with four generating units of 7,500 kW capacity each. The final cost of the project will be about Rs. 18.39 crore, of which about Rs. 3.04 crore has been sanctioned for the Plan period.

#### KHODIAR

This will consist of (1) a masonry dam across the Shetrunji river at Khodiar Mata in Amreli district of Bombay State; (2) a pick-up weir at Medhi, about 13 miles downstream; and (3) a right bank canal irrigating 19,000 acres.

#### MAHANADI DELTA IRRIGATION SCHEME

An adjunct of the Hirakud project, this scheme includes (1) flood protection for 3,50,000 acres; and (2) remodelling of the existing canal system and construction of new canals in Puri district to irrigate 15.95 lakh acres. The expenditure involved will be about Rs. 14.92 crore, of which Rs. 12.35 crore is provided in the Plan.

#### SARDA SAGAR

The first stage of this scheme, taken up in the First Plan, was concerned with the extension of irrigation facilities and improvement of the Sarda canal system in U.P. The second stage, which is now to be implemented, consists of a detention-type reservoir across the Chuka Nadi, a small tributary of the Sarda, to store excess water in the rainy season with which to supplement the Sarda canal system later in the year. The total area to be irrigated in Stage II of the scheme is about 1,85,200 acres, and the total cost will be about Rs. 9.84 crore.

#### KANGSABATI

This project, for which the Plan provides Rs. 4.75 crore, will consist of a dam and reservoir in the upper valley of the Kangsabati river near Khatra in Bankura district of West Bengal, canals on both sides taking off from the dam and two pick-up barrages across the rivers Silabati and Bhairab Banki to incorporate their supplies. The total cost is estimated at Rs. 25.25 crore. The



system is expected to irrigate 8 lakh acres in the *kharif* season and 1.5 lakh acres in the *rabi* season on completion. Work on the dam and canals is progressing.

#### KERALA SCHEMES

Several important irrigation and power schemes were started in Kerala (then Travancore-Cochin) in the First Plan. They are to be continued and new ones also undertaken in the next five years. The more important schemes are:

1. *The Neyyar Irrigation Scheme*, which comprises a masonry gravity dam across the Neyyar river at Champilamoodu, 19 miles south-east of Trivandrum, and 24-mile long canals on either bank. The dam and right bank canal were completed in the First Plan. Work on the left bank canal is in progress. The project will cost about Rs. 1.05 crore.
2. *The Boothathamkettu Scheme* consists of a regulator across the Periyar river near Alwaye and a left bank canal and distributaries irrigating 63,300 acres.
3. *The Sholayar Scheme* consists of a 150 ft. high masonry dam near Ambalapara in Trichur district and a pick-up weir  $2\frac{1}{2}$  miles lower down the river. Water is to be diverted through a tunnel to a power house on a stream called Anakayam, which flows into the Chalakudi river. Three turbo-alternators, each of 18,000 kW capacity, are to be installed.
4. *The Panniar Power House* will be situated on the left bank of the Mudirapuzha river opposite the existing Sengulam power station. It will house two generating units of 15,000 kW each.

#### BARAUNI STEAM STATION

This power station, which will be situated near Barauni, opposite Mokameghat, will be of great help to the industrialization of north Bihar. The initial capacity of the plant will be 30,000 kW and the cost Rs. 3.09 crore.

#### KORBA

The thermal plant at Korba, near Champa in Bilaspur district of Madhya Pradesh, will have three generating sets of 30,000



Intensive cultivation is receiving the greatest stress in planning.  
In the above photograph, a peasant girl from Madras is seen  
holding improved strains of 'Jowar' heads in her hands.







A village boy  
with lantern—  
a symbol of  
India's yearning  
for knowledge  
and progress.



A Gram Sevika in a village near Delhi talking to peasants in a  
Community Development Block





acting on the principle, 'Help the Plan, help yourself,' the  
villagers in a Punjab village digging a well through *Shramdan*



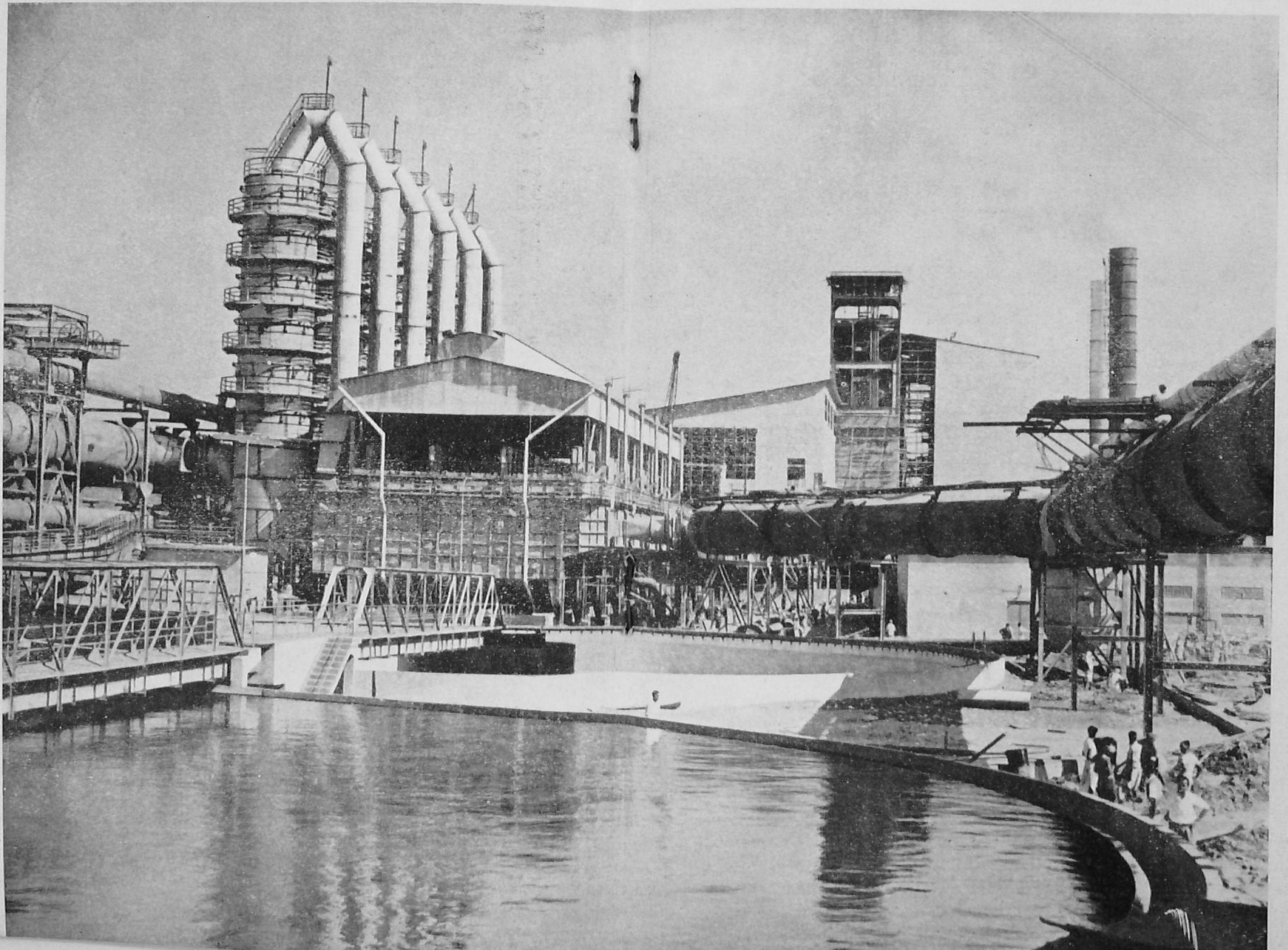




A brick-maker near Delhi laying bricks for house-building which forms an important part of the programme under planning.



A general view of the Rourkela Steel Plant, Orissa





A side view of the Tungabhadra Dam



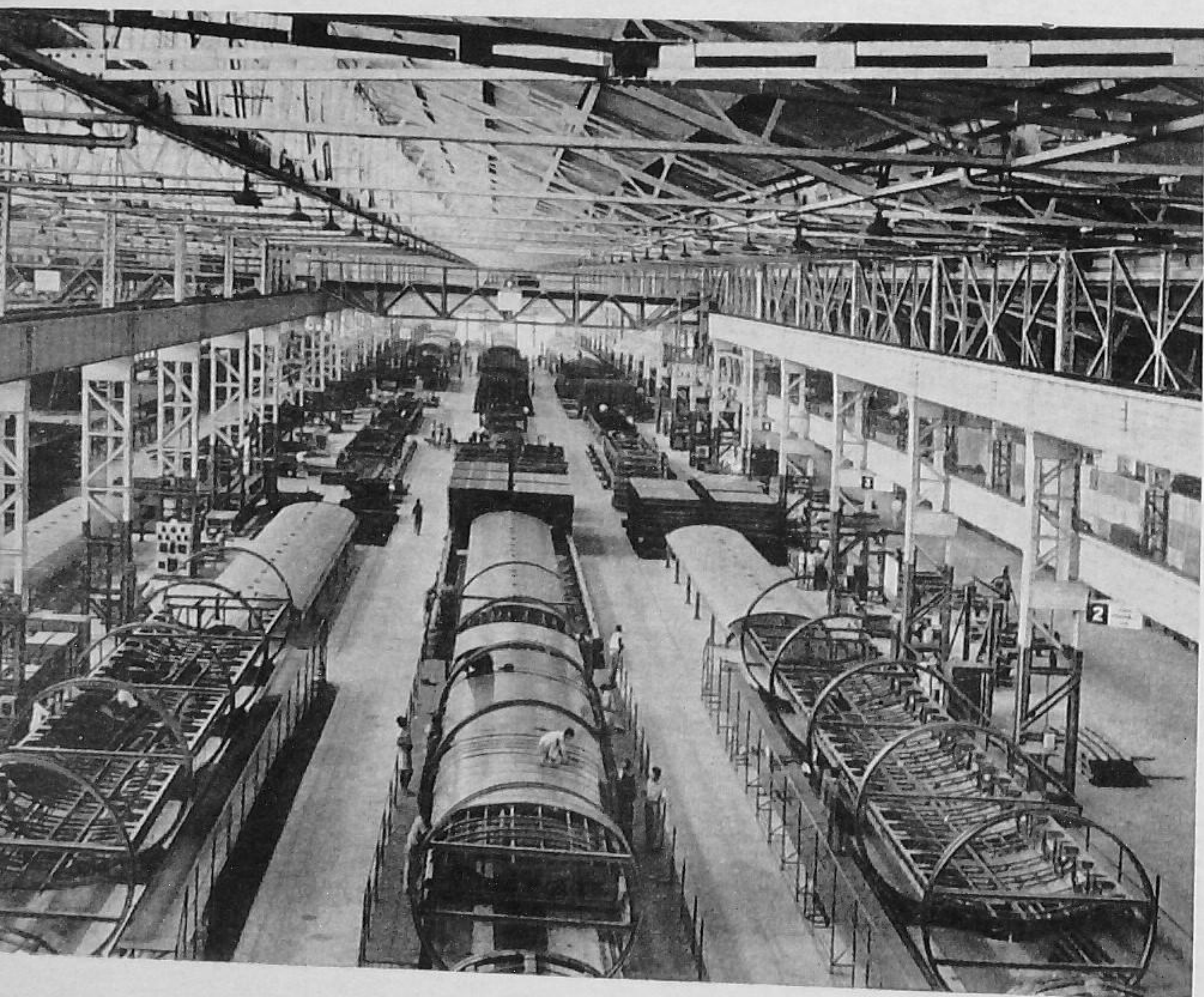




Apsara, a swimming pool type of reactor at Trombay



section of the Integral Coach  
factory at Perambur in Madras







Two HT-2 aircraft designed at the  
Hindustan Aircraft Factory at Bangalore



ycle rims being manufactured in a Punjab factory





kW capacity each. It will be completed during the Second Plan period at a total cost of Rs. 12·03 crore. The Bhilai steel works will receive 50,000 kW of power from this station.

#### KUNDAH

This hydro-electric scheme—the largest in Madras—will utilize the waters of the Kundah basin in Nilgiri district. Scheduled to be built in four stages, it will ultimately yield 4,10,000 kW of power. The first two stages, which are estimated to cost Rs. 35·44 crore, have been included in the Second Plan.

In the first stage a combined storage dam across the Avalanche and Emerald streams of 5,500 million cu. ft. capacity will be provided. Two power houses will also be erected, one on the right bank of the Kundah river near Kundahpalam village and the other on the left bank of the Regumbuhalla stream. In the first power house two units of 20,000 kW each will be installed and three units of 35,000 kW each in the second.

In the second stage a storage reservoir on the Upper Bhavani will be provided and a fourth unit of 35,000 kW will be added to the second power house, bringing the total power capacity of the project to 1,80,000 kW.

#### YAMUNA

The purpose of this scheme, for which the Plan allocates Rs. 9·9 crore, is to utilize the drop of 750 ft. in the Tons and Yamuna rivers between the Kishan dam site on to the Tons and Paonta, for the development of 2,00,000 kW of power by stages. The total cost for stages I and II will be about Rs. 42·44 crore.

#### SHARAVATI

This project consists of a dam with a power house across the Sharavati river at Linganamakki in Mysore. The power house will ultimately have 10 generating units of 89,100 kW capacity each. Only two units are to be installed by 1962. The estimated cost of the first stage is Rs. 39·66 crore.



### III. INDUSTRIAL UNDERTAKINGS

During the First Plan, large funds could not be spared by the Government for industrial development as the country faced more pressing problems in the spheres of agriculture, transport and social services. Only Rs. 94 crore was provided for the establishment of large-scale industries in the public sector as against an estimated Rs. 233 crore of new investment in the private sector. In spite of this small allocation, several important public sector undertakings came into being and a good start was made in industrializing the country.

The Second Plan provided Rs. 690 crore for large-scale industries and mining (including scientific research) in the public sector, against a comparable expected investment of about Rs. 570 crore in the private sector. Thus the roles were reversed.

The more important industrial undertakings, including those taken up in the Second Plan, are:

#### STEEL

At the end of the First Plan, India's finished steel production stood at 1.3 million tons, the bulk of which came from the Tata and IISCO plants in the private sector. In the Second Plan, with its emphasis on large-scale State investment in basic industries, three new steel plants of 1 million tons ingot capacity each are being established at Rourkela (Orissa), Bhilai (Madhya Pradesh) and Durgapur (West Bengal) in the public sector.

The Rourkela plant, which is being set up with the assistance of a German combine, will specialize in the production of flat steel products. The manufacturing programme comprises heavy plate for ship-building, locomotive construction, boiler-making, track-building, etc., as well as light plates and strips.

The civil engineering work at Rourkela has made satisfactory progress. The first blast furnace was formally inaugurated by the President on February 3, 1959, and the production of steel by the L.D. process started in January 1960. The plant is expected to reach its full target of production of 1 million tons of steel ingot by 1961. Its revised cost is now estimated at Rs. 170 crore.



The Bhilai plant, started in April 1956, is being built in collaboration with the Government of the U.S.S.R. It will specialize in the production of rails, heavy structurals, railway sleeper bars, etc. Its first blast furnace was commissioned on February 4, 1959, the second in December 1959 and the third in March 1960. The production of steel from the first open hearth furnace started early in 1960. Like the Rourkela plant, it will also attain full production by 1961. The plant is expected to cost Rs. 131 crores.

The third plant at Durgapur, on the banks of the Damodar, in what will be the industrial heart of new India, is being established with the aid of a British Consortium of 13 firms. The first blast furnace of this plant was commissioned on December 29, 1959. The production of steel is likely to commence by the end of 1960. This plant is expected to cost Rs. 138 crore. A feature of the Durgapur project is that there will be a special plant to hammer blooms to make wheels and axles for the railways.

In terms of finished steel, the Rourkela, Bhilai and Durgapur plants are expected to produce 0.72, 0.77 and 0.79 million tons, respectively, by 1961. In addition, these will also produce 3,50,000 tons of pig iron for sale. If the production of the Mysore Iron and Steel Works is raised to 1,00,000 tons, the output of finished steel in the public sector at the end of the Second Plan should be well over 2 million tons.

In the private sector also, steel production is being increased from 0.78 to 1.50 million tons by the Tata works and from 0.33 to 0.80 million tons by the Indian Iron and Steel Co. If all these targets are reached, India will be producing 4.68 million tons of finished steel by 1961. This, it may be emphasized, is only a beginning, for, if a comparison is made with the annual steel production in the U.S.A. (more than 100 million tons), the Soviet Union (more than 40 million tons), and Britain and Germany (more than 20 million tons each), it will be realized that we have still a long way to go.

#### FERTILIZER FACTORIES

The agricultural increases achieved during the First Plan have been due to some extent to the use of fertilizers in reviving the productive capacity of the soil. The Sindri Fertilizer Factory, constructed at a cost of about Rs. 23 crore, went into production in October 1951. In 1958-59, it produced 3,30,000 tons of



ammonium sulphate. The coke oven plant, which went into production in September 1954, reached its full rated capacity of 600 tons per day in 1956, enabling Sindri to be self-sufficient in coke.

A scheme to expand Sindri's production by about 60 per cent. by utilizing the 10 million cubic feet of gas available from the coke oven plant was undertaken in 1957 and completed by the middle of 1959. It is expected that by 1960-61, the production of nitrogenous fertilizers in Sindri will go up to 5,85,000 tons.

Other factories are being set up under the Second Plan to meet the country's growing requirements of fertilizers. Good progress has already been made in regard to the Fertilizer-cum-Heavy Water Factory at Nangal. A private limited company has been formed to manage the project, and production is likely to start by the end of 1960. The factory is designed to produce 80,000 tons of nitrogen. In addition, about 12 to 15 tons of heavy water will eventually be produced per annum for atomic energy development.

It has also been decided to set up a Rs. 20 crore fertilizer plant at Neyveli in Madras as part of the South Arcot Lignite Project to produce 70,000 tons of nitrogen annually in the form of urea to meet the demand for fertilizers in South India.

A third new factory is being set up at Rourkela, utilizing the gases from the steel plant, with a production capacity of approximately 80,000 tons of nitrogen (4,42,000 tons of ~~nitro~~-limestone) per annum. These factories are expected to meet the country's full demand for fertilizers after some years.

#### ATOMIC ENERGY PROJECTS

The Rare Earths Factory at Alwaye, which was completed in 1952, is of special importance as it extracts residual thorium/uranium cake from the monazite sands of Kerala for use in atomic energy development. The capacity of the processing plant is now being doubled to 3,000 tons of monazite per year.

A thorium/uranium plant at Trombay, which began production in 1955, further processes the material received from Alwaye and produces thorium nitrate and uranium. A uranium purification plant is being built at Trombay as well as a pilot plant for extracting uranium ore at the Indian Copper Corporation's factory at Ghatsila, West Bengal. Another new plant, the Heavy Water-cum-Fertilizer Factory at Nangal, has been mentioned earlier.

The Rare Earths Factory also produces rare earths products and trisodium phosphate.



## CABLE FACTORY

A factory to manufacture insulated telephone cables was built, with technical assistance from a British firm, at Rupnarainpur in West Bengal during the period of the First Plan. Starting production in September 1954, the factory was originally designed to produce about 470 miles of cables valued at nearly Rs. 1 crore annually. Because of the increased requirements of the Posts and Telegraphs Department, however, it was decided to double the capacity. The expansion programme, which is being completed, will raise the capacity of the plant to 1,000 miles of armoured cables per annum. Already, by 1958-59, the factory had started turning out 655 miles of cables per year.

The P. & T. Department now proposes to link the major cities by an underground cable network. To assist this programme, about 300 miles of coaxial trunk cables will be manufactured here every year.

## TELEPHONE FACTORY

The construction of a factory at Bangalore to manufacture telephone equipment began in 1948. The First Plan made a provision of Rs. 130 lakh for this factory, and the allocation was later raised to Rs. 349 lakh. Up to the end of 1955-56, about Rs. 291 lakh had been spent and the capacity of the factory increased to 35,000 exchange lines and 50,000 telephone instruments per annum. Starting with purely assembly work, it is now able to manufacture almost all components of a telephone.

For the Second Plan period, the target of production at the Telephone Factory was raised to 40,000 exchange lines and 60,000 telephones per year. A sum of Rs. 50 lakh was allocated for this purpose.

By the end of 1958-59, however, the target of production had already been exceeded, the number of telephones manufactured in that year being 84,300.

## MACHINE TOOLS FACTORY

Under an agreement with a Swiss firm, a factory for the manufacture of precision machine tools was built at Jalahali, near Bangalore. The first stage of the production of components of 8½ centre high-speed lathes began in October 1954, though the main factory buildings were completed only in 1955.

The production in 1958-59 amounted to 552 machines, including 240 lathes, valued at Rs. 2.1 crore. It is proposed to diversify production in the factory by manufacturing lathes of larger size, milling machines and radial drills.



## MACHINE TOOL PROTOTYPE FACTORY

This factory at Ambarnath, Bombay State, which was completed in 1953 at a total capital cost of Rs. 4.95 crore, produces specialized machine tools of the types mainly required by the ordnance factories. The original programme was for Rs. 55 lakh worth of total production by the end of 1956-57, and the targets have since been increased.

## HINDUSTAN SHIPYARD LTD.

Since the Government acquired a controlling interest in the Scindia Steam Navigation Company Ltd., in 1952, the Visakhapatnam shipyard, now known as Hindustan Shipyard Ltd., has undertaken the construction of modern "Maierform" design ships propelled by diesel engines as distinct from the old "Jala" type vessels built by the former company.

A programme of phased development of the shipyard was also taken in hand immediately. The first phase, involving an expenditure of Rs. 2.14 crore, has been completed. The second phase, which will involve an expenditure of Rs. 1.3 crore, is now in hand. When this phase is over, the capacity of the yard will be raised from the present 2 to 3 ships to 4 to 6 modern ships per year.

The shipyard is at present equipped with four large-sized berths on which ships up to 350 feet in length and 15,000 tons in dead-weight can be built. The yard had produced 24 ships by the end of 1958-59 of a total dead-weight tonnage of 63,000 as against a target of 90,000 fixed for the end of the Second Plan.

The shipbuilding programme for the Second Plan also includes preparatory work in connection with the establishment of a second shipyard. A provision of Rs. 75 lakh has been made for this purpose. In addition, there is a proposal to manufacture heavy marine diesel engines.

## D.D.T. FACTORIES

The D.D.T. factory at Delhi, set up with the help of UNICEF and the U.N. Technical Assistance Administration, began production in March 1955. Originally, the factory was designed to produce 700 tons of technical D.D.T. per annum, but in 1955-56, it was decided to double its capacity. In 1958-59, it produced 1,268 tons of technical D.D.T. and 1,100 tons of formulated D.D.T.



Another D.D.T. plant of similar capacity was set up in 1958 at Alwaye in Kerala. This factory produced 812 tons of technical D.D.T. and 681 tons of 50 per cent formulated D.D.T. in 1958-59

With the production of about 2,000 tons of benzenehexachloride in the private sector, the country's requirements of about 5,000 tons of insecticide per annum for the campaign against malaria are now being met from indigenous production

#### PENICILLIN FACTORY

The penicillin factory at Pimpri, near Poona, was constructed during the First Plan with the help of UNICEF and WHO. Planned for an output of 9 million mega units of the drug per year, it started regular production in August 1955 and by 1958-59 its output had reached 29.1 m.m.u.

It is proposed to extend the capacity of the plant by 60 per cent by 1960 to achieve self-sufficiency in the production of penicillin, whose demand in India is estimated at 60 to 65 m.m.u. Arrangements have also been made to manufacture bicillin—an improved form of penicillin—penicillin V for oral therapy and streptomycin as part of the new programme.

#### NATIONAL INSTRUMENTS LTD.

Founded in 1830 for the maintenance and repair of precision instruments for the Survey of India, this factory (formerly called the Mathematical Instruments Office) now manufactures a variety of scientific and precision instruments for the use of various government departments.

A scheme of reorganization was undertaken during the First Plan and the factory was placed under the charge of the present Company in June 1957. During 1958, a new section was set up for the manufacture of pressure and vacuum gauges and 14,632 new instruments of this type were produced. In 1958-59, the factory produced instruments valued at Rs. 44.1 lakh.

At present plans are under way for the production of clinical thermometers, special types of microscopes and binoculars, recording instruments and cameras.

#### NATIONAL NEWSPRINT AND PAPER MILLS, LTD.

At the start of the First Plan all the newsprint in use in India was imported. In 1947 a private company known as NEPA



mills was started in Madhya Pradesh. In view of the national importance of the project and its larger capital requirements, it later came to be predominantly owned by the Government. The factory started experimental production in January 1955, and the chemical pulp section came into operation in early 1956. It started production of newsprint in 1956-57. Its present rate of production is 70 to 75 tons of newsprint a day. It is now planned to raise the capacity of the factory to 200 tons a day.

#### ELECTRONICS FACTORY

The construction of a factory to manufacture electronics equipment, including radar, valves and other specialized components, was taken up in October 1954 at Bangalore under an agreement with a French firm.

Production started in 1956 with communication receivers and power transmitters. Later, the production of pre-amplifiers and loud hailer and hearing aids was also undertaken. Negotiations are at present in progress for the manufacture of valves and high power transmitters.

#### HINDUSTAN AIRCRAFT FACTORY

Started in 1940-41 for the assembly and repair of military aircraft, this factory at Bangalore played a prominent role in the development of civil aviation in India after the war by overhauling large numbers of war-surplus aircraft for the airline companies. In 1948 work was begun on a modern all-metal basic trainer aircraft—the now well known HT-2, which has received world-wide acclaim. Later, it undertook the production of Vampire jet fighters, Vampire trainers, Gnat fighters and aero engines.

Besides its main work in the direction of manufacture, repair and overhaul of aircraft, the Bangalore factory is manufacturing rail coaches and bus body kits. Several hundred all-metal rail coaches and the new type of integral-type coaches are now being built at the factory. It is also producing an ultra-light aircraft named "Pushpak".

#### HEAVY ELECTRICAL EQUIPMENT FACTORY

In November 1955 an agreement was signed with a British combine under which the latter undertook to act as technical consultants for a new State factory to manufacture heavy electrical equipment such as hydraulic turbines, control gear, switch



gear, motors and generators, transformers, etc. The detailed project report has been submitted.

The factory, which is situated at Bhopal, will begin production in mid 1960 and is expected to develop to its full capacity about seven years thereafter. The factory is expected to cost Rs. 45 crore and to produce equipment valued at about Rs. 25 crore per annum.

#### SYNTHETIC OIL PROJECT

Project reports on the establishment of a synthetic oil plant capable of producing 2,50,000 to 3,00,000 tons of liquid fuel (mainly aviation spirit, petrol and diesel oil) per annum have been received from three foreign firms from whom they were sought. The reports are being considered by a committee of experts. A decision regarding the implementation of the project in the light of the committee's recommendations is still awaited.

#### OIL

Two oil refineries were set up at Trombay Island near Bombay during the First Plan period by Stanvac and Burmah-Shell. The Burmah-Shell refinery started operating in January 1955 and reached full production by the middle of the year. It has a capacity for utilizing over 2 million tons of crude oil per annum. The Standard Vacuum refinery, which has a capacity of about 1.6 million tons, established full-scale operations in July 1954. A third refinery, owned by Caltex (India) with a capacity of refining 6,75,000 tons of crude oil, started production at Visakhapatnam in April 1956.

The production of the existing refineries has made India surplus in motor spirit and furnace oil. There are still, however, deficiencies in kerosene, diesel, lubricating oils and bitumen.

Since the commencement of the Second Plan, the exploration and development of the country's oil resources are being given a high priority. Extensive mapping, geophysical prospecting and aero-magnetic surveys have been conducted by the Oil and Natural Gas Commission in Punjab, Himachal Pradesh, Jammu, Rajasthan, Cutch and Gujarat. Actual drilling for oil has been undertaken at Hoshiarpur, Jwalamukhi, Vadsar and Lunej by the Commission and by Stanvac in the Burdwan district of West Bengal. While no oil has so far been discovered in Punjab and West Bengal, the Cambay area in Gujarat has been proved to



contain ample deposits of oil. Oil has also been discovered in commercial quantities in Naharkotiya and Moran regions of Assam, and a Rupee Oil Company, known as 'Oil India Private Ltd.' has been formed to undertake operations in this area and to construct pipelines to connect the oil fields to two public sector refineries being set up at Nunmati (Gauhati) in Assam, and Barauni in Bihar.

### COAL

Coal production has been steadily rising since the start of the First Plan, and in 1958 it reached 45.3 million tons, as against 32.31 million tons in 1950. This, however, is still far short of our requirements. On the basis of the industrial targets in the Second Plan and the programmes of power generation and railway expansion, it is estimated that the demand for coal in 1961 will be about 60 million tons.

To achieve this target, new coalfields are being developed in Korba (Madhya Pradesh), Karanpura (Bihar), Singareni (Andhra) and Raniganj (West Bengal). All these are in the public sector. Existing State workings are being further developed, and private collieries are also being asked to raise their output by 10 million tons.

### SOUTH ARCOT LIGNITE PROJECT

The development of lignite deposits in the Neyveli area of South Arcot district is an important scheme included in the Second Plan. It envisages the production of 3.5 million tons of lignite to be used for the production of fertilizers, power generation and for making lignite briquettes. The mining programme for lignite has made considerable progress. Tests on samples of lignite, to ascertain its coking quality, have also been conducted. The progress made on the fertilizer factory at Neyveli has already been indicated earlier. The power plant is being set up with U.S.S.R. assistance. Steps have also been taken to set up the briquetting plant, for which tenders have been invited. There is a proposal to step up the mining of lignite beyond 3.5 million tons and to establish a small steel plant based on it. The provision of Rs. 68.8 crore for Neyveli includes provision for a thermal station of 211 mW as well as a fertilizer plant. The latter has been mentioned earlier.



## PRIVATE SECTOR

The First Five Year Plan's target of a total investment of Rs. 233 crore for setting up new industrial units and expanding existing ones in the private sector was largely fulfilled. The scheduled increases in production were achieved in cotton textiles (mill sector), sugar and vegetable oils. Other items where the targets were more or less fulfilled were cement, paper, soda ash, caustic soda and other chemicals, rayon and bicycles. Though some other industries, such as aluminium, nitrogenous fertilizers, jute manufactures and a few light engineering industries did not do as well as expected due to a variety of reasons, it may be said that the picture as a whole was satisfactory.

Under the Second Plan, the industrial development programme envisaged under the National Industrial Development Corporation and the private sector was to entail an outlay of Rs. 720 crore, comprising Rs. 570 crore of new investment and Rs. 150 crore on replacements and modernization. A few of the production targets with the results achieved up to the end of 1958-59 are given below.

Industry	Unit	Production in 1955-56	Production in 1958-59	Target for 1960-61
1. Iron & Steel (main producers)	million tons	1.25	1.33	2.3
2. Aluminium	tons	7,300	9,900	17,500
3. Automobiles	Nos.	25,300	27,200	57,000
4. Sulphuric Acid	tons	164,000	237,000	470,000*
5. Soda Ash	tons	80,000	90,000	230,000
6. Caustic Soda	tons	36,000	60,000	135,400
7. Nitrogenous Fertilizers	'000 tons (of nitrogen)	79	79	290
8. Petroleum Refining	million (tons of crude processed)	3.6	4.0	4.3
9. Newsprint	'000 tons	4.2	21.8	60.0**
10. Cement	million tons	4.6†	6.0	13.0†

\*Inclusive of plants in the public sector.

\*\*Two new factories envisaged, one of which is likely to reach full production.

†Includes public sector.



Industry	Unit	Production in 1955-56	Production in 1958-59	Target for 1960-61
11. Refractories . . .	'000 tons	288	452	800
12. Jute Manufacturers . . .	'000 tons	1,054	1,052	1,200
13. Cotton Textiles				
(a) Yarn . . . . .	million lbs.	1,640	1,694	1,950
(b) Mill Cloth . . . . .	million yds.	5,100	4,921	5,300
14. Sugar . . . . .	'000 tons	1,850	2,006	2,250
15. Penicillin . . . . .	million mega units	6.6	25.2	40*
16. Woollen Cloth . . . . .	million yds.	14.9	17.8	20.0
17. Bicycles . . . . .	thousands	513	894	1,250
18. Diesel Engines . . . . .	h.p.	100,000	276,000	205,000
19. Power-driven Pumps . . . . .	Nos.	37,200	81,600	86,000
20. Radio Receivers . . . . .	Nos.	102,000	197,000	200,000 to 225,000
21. Vanaspati . . . . .	tons	270,000	299,000	400,000
22. Salt . . . . .	thousand maunds	84,000	104,899	100,000

#### COTTAGE AND SMALL-SCALE INDUSTRIES

The importance of village and small industries in the economic structure of the country was recognized in the First Plan, which allocated substantial funds for their development and urged the setting up of a network of all-India Boards to look after the various sectors of such industry. Altogether, about Rs. 31.2 crore was spent on village and small industries during the First Plan.

These measures had the desired effect. The production of handloom cloth, for instance, increased from 742 million yards in 1950-51 to about 1,450 million yards in 1955-56. The value of khadi rose from Rs. 1.3 crore to more than Rs. 5 crore during the same period, at the end of which production stood at 34 million square yards.

\*Includes public sector.



The All-India Khadi and Village Industries Board has set up a technological institute, and four regional institutes are providing technical help and advice to small industries. The Handicrafts Board has done much in the way of research, marketing, etc., and the Coir Board has promoted co-operative societies in its sphere. Thirteen State Finance Corporations have been established and the rules and procedures governing State aid to small industries have been made more liberal.

All these are solid achievements.

The programmes for these industries were increased in size during the Second Plan, which assigned them the important role of meeting a large part of the additional demand for consumer goods. The Village and Small-scale Industries (Second Five Year Plan) Committee, also known as the Karve Committee, made detailed recommendations in this respect.

To enable cottage and small industries to fulfil their new role, the Second Plan provided Rs. 200 crore for them, in addition to working capital requirements.

The following table shows the allocation made under different heads, under the Second Plan, and the actual outlay by the end of the year 1959-60.

						(Rs. crores)	
						Plan Provision	Actual Outlay 1956-60
1.	Handloom Industry	.	.	.	.	59.5	22.82
2.	Khadi	.	.	.	.	16.7	25.77
3.	Village Industries (hand pounding of rice, vegetable oil, footwear, gur and khandsari, etc.)	.	.	.	.	38.8	13.82
4.	Handicrafts	.	.	.	.	9.00	3.68
5.	Sericulture	.	.	.	.	5.00	2.85
6.	Coir Spinning and Weaving	.	.	.	.	1.00	1.37
7.	General Schemes (administration, research, etc.)	.	.	.	.	15.00	34.57
8.	Small-scale Industries	.	.	.	.	55.00	32.51
						<u>200.00</u>	<u>137.39</u>

This outlay does not include any specific provision for the Ambar Charkha programme.



#### IV. SCIENTIFIC RESEARCH

In the First Plan, a sum of Rs. 12 crore was set apart for scientific research, in recognition of its importance as an adjunct to economic progress. This money has been spent mainly on building national laboratories and other research institutions. As a result, India has, apart from research departments in 33 universities, 21 national laboratories/institutes, 88 research institutes and research centres and 54 associations in the field of scientific and technological research.

The promotion, co-ordination and financing of scientific research projects are functions of the Council of Scientific and Industrial Research, which was established in 1942.

##### NATIONAL LABORATORIES

During the First Plan, the Council set up the following national laboratories:

(1) The National Physical Laboratory, New Delhi; (2) the National Chemical Laboratory, Poona; (3) the National Metallurgical Laboratory, Jamshedpur; (4) the Fuel Research Institute, Jealgora; (5) the Central Glass and Ceramics Research Institute, Calcutta; (6) the Central Drug Research Institute, Lucknow; (7) the Food Technological Research Institute, Mysore; (8) the Central Electro-chemical Research Institute, Karaikudi; (9) the Road Research Institute, New Delhi; (10) the Central Leather Research Institute, Madras; (11) the Central Building Research Institute, Roorkee; (12) the Central Salt Research Institute, Bhavnagar; (13) the Central Electronics Engineering Research Institute, Pilani (being completed); and (14) the National Botanical Gardens, Lucknow.

These laboratories undertake both fundamental and applied research, with special reference to the problems, including standardization of industries falling within their respective spheres. The programmes of the National Physical Laboratory and the National Chemical Laboratory, however, cover a wider field.



## RESEARCH INSTITUTIONS

Besides the national laboratories, the First Plan provided assistance for a number of important research institutions, such as the Indian Institute of Science, Bangalore, the Tata Institute of Fundamental Research, Bombay, the Indian Institute of Nuclear Physics, Calcutta, the Indian Association for the Cultivation of Science, Calcutta, the Bose Institute, Calcutta, the Raman Institute, Bangalore, the Birbal Sahni Institute of Palaeobotany, Lucknow, and the Sri Ram Institute for Industrial Research, Delhi. Aid to all these institutions is being continued during the Second Plan period.

Besides these, science departments and research institutes in the universities are given aid by the Ministry of Education and the University Grants Commission. The Botanical and Zoological Surveys of India have been allotted funds for research as part of their development programmes. Organizations such as the Indian Science Congress Association, the National Institute of Science, New Delhi, and the Indian Academy of Sciences, Bangalore, have also been spreading scientific knowledge.

At the end of 1953 the Government of India set up a National Research Development Corporation with the aim of securing the fullest possible use by industry of the results of technical and scientific research.

## NEW INSTITUTIONS

The Second Plan provided Rs. 20 crore (later revised to Rs. 15.5 crore) for the development programmes of the C.S.I.R. The Council had established by the end of 1959, (1) Central Mining Research Station, Dhanbad; (2) Birla Industrial and Technological Museum, Calcutta; (3) Central Mechanical Engineering Research Institute, Durgapur; (4) Central Public Health Engineering Research Institute, Nagpur; and (5) Aeronautical Research Laboratory, Bangalore. It had also taken over from the States (1) Regional Research Laboratory, Hyderabad; (2) Indian Institute for Bio-Chemistry, Calcutta and (3) Regional Research Laboratory, Jammu.

By March 1960, 34 rural scientific centres known as Vigyan Mandirs had been set up generally at sites covered by the Community Projects. These centres disseminate scientific knowledge among the rural populace and educate them on the potentiality of the methods of science as applied to their day-to-day life. In all, it is proposed to set up 90 to 100 Vigyan Mandirs by the end of Second Plan period.



## ATOMIC ENERGY ESTABLISHMENT

The Department of Atomic Energy was formed in 1954, and by 1955 construction work on an Atomic Energy Establishment was started at Trombay. A swimming pool-type reactor, designed and built entirely by the Indian personnel of the Establishment, came into operation in August 1956. The reactor is producing isotopes for biological, medical and industrial research and is training engineers for other projects. It has at present 25 research divisions and laboratories manned by about 950 scientists.

A second reactor, known as Zerlina, meant for the study of principles involved in the design of future reactors, is nearing completion.

A third high-power, high-flux reactor developed with assistance from Canada and known as Canada-India Reactor is coming into operation very soon.

## METRIC SYSTEM

A recent development of far-reaching importance is the decision to adopt the decimal system of coinage and the metric system of weights and measures in this country. It was thought necessary to carry out these reforms before the country progressed far on the path of industrialization, as a change-over later would have proved more difficult to effect. The decimal system of coinage was introduced on April 1, 1957 and the metric system of weights and measures was begun in some selected areas on October 1, 1958. It is proposed to bring the whole country under the latter system by December 1966.



## V. TRANSPORT AND COMMUNICATIONS

In the sphere of transport, the main aim of the First Plan was to rehabilitate, to the extent possible, the assets which, during the preceding decade, had been subjected to unprecedented strain, due to war and Partition. A start was also made in fitting it to serve the needs of an industrial economy.

In the Second Plan, with its emphasis on heavy industries, the transport and communications system, particularly the railways, was called upon to bear a very heavy burden. A total amount of Rs. 1,385 crore—29 per cent of the entire Plan (reduced to Rs. 1,340 crore in the reappraisal of the Plan)—was, therefore, set apart for this vital sector.

### RAILWAY EXPANSION

During the First Plan, the railways steadily pursued a programme of modernisation of rolling stock and fixed assets, mileage extension and the provision of better amenities for the travelling public and railway staff. The total expenditure incurred during this period was Rs. 423·7 crore (including the contribution from current depreciation).

Progress, largely on the same lines, is being made during the Second Plan, with this difference that, on account of the development of heavy industries, greater attention is being paid to the increases in line capacity and the attainment of self-sufficiency in the production of locomotives, coaches and wagons. A total provision of Rs. 900 crore for railway development in addition to Rs. 225 crore from the Railway Depreciation Fund was made for this purpose in the Second Plan. The main targets laid down were the construction of 842 miles of new lines, doubling of 1,607 miles of track and renewal of 8,000 miles of obsolete track, besides the procurement of 2,258 locomotives, 107,247 wagons and 11,364 coaches. By the end of 1958-59, about 500 miles of new track had been put into use and 4,000 miles of track renewed. Most of the works for increasing line capacity and remodelling marshalling yards had been completed. Self-sufficiency in the production of locomotives, coaches and wagons had been achieved.



## CHITTARANJAN

The Chittaranjan Locomotive Works, the largest of its kind in Asia, was completed in 1950. Initially designed to produce 120 locomotives and 50 spare boilers per year, its capacity was later increased to 200 average-size locomotives and 100 spare boilers.

In order to meet the heavier requirements in the Second Plan period, the work was further expanded and the target was raised to 300 locomotives a year, so that combined with the production of TELCO (the Tata works) with an output of 100 locomotives a year, the country could attain self-sufficiency in the field. By the end of 1958-59, the annual production of locomotives at Chittaranjan had reached 165 as against 92 in 1955-56. A scheme to instal a steel foundry at Chittaranjan to manufacture heavy and medium steel castings is at present in progress. It is also proposed to take up the manufacture of electric locomotives in the country.

## PERAMBUR COACH FACTORY

A factory designed to produce 350 light-weight steel railway coaches a year began production at Perambur, Madras, in October 1955. The coaches produced here are of the integral type *i.e.*, the floor and sides are not riveted together but form a single body shell.

The factory produced 50 coach shells in 1955-56, 88 in 1956-57, 222 in 1957-58 and 380 in 1958-59. Steps have now been taken to introduce second shift in the factory. When this is done, production will go up to 750 coaches per year. A furnishing unit is also being added to the factory.

## METRE-GAUGE COACH FACTORY

A new metre-gauge coach factory, designed to produce 200 fully furnished coaches per annum, is to be built at a cost of Rs. 7.5 crore.

With these two new factories in operation, and the Hindustan Aircraft Factory also undertaking this work, the production of coaches is expected to reach 1,800 per annum by the end of 1960-61.

## GANGA BRIDGE PROJECT

This project, which has replaced the ferry barge across the Ganga at Mokameh, is of vital importance to the development



of North Bihar. The bridge, 6,074 ft. long, with a modern roadway above and a railway transshipment yard on the north bank, was completed in 1959. This bridge links North Bihar and Assam with South Bihar and West Bengal. The total cost involved is about Rs. 16 crore.

#### ROAD CONSTRUCTION

Road-building is next in importance only to the railways in opening up the country for development. In 1950-51, India had 97,000 miles of metalled roads and about 147,000 miles of unmetalled roads. During the First Plan a big road-building programme got under way and 10,000 miles of new surfaced roads and about 20,000 miles of low-grade roads come into existence. About Rs. 155 crore was spent on this programme.

In the Second Plan roads have to play an increasingly important role in helping the railways to withstand the strain on transport imposed by the heavy development programme. It was, therefore, proposed to spend about Rs. 246 crore on road development in addition to the Rs. 25 crore which were provided from the Central Road Fund.

By the end of 1958-59, 15,000 miles of new surfaced roads and 500 miles of additional national highways had been constructed.

#### BANIHAL TUNNEL

A German firm was entrusted with the construction of this tunnel through the Pir Panjal range in Jammu and Kashmir State in April 1955.

The tunnel is to consist of two tubes, each designed for single-lane traffic. One tube was opened for traffic in 1958. The other tube is also almost ready and is expected to be opened for traffic in the summer of 1960.

#### SHIPPING

Indian shipping tonnage was about 390,000 GRT in 1950-51. It rose to about 4,80,000 GRT by the end of the First Plan. The target laid down for the end of the Second Plan period was 900,000 GRT. For this purpose, a provision of Rs. 45 crore was made in the Second Plan. By December 1, 1958, the target attained was 630,000 GRT—258,000 GRT for coastal shipping and 372,000 GRT for overseas shipping.



## KANDLA PORT

The development of Kandla in Kutch was undertaken after Partition in order to make good the loss of Karachi. During the First Plan about Rs. 9 crore was spent on this project, including the expenditure on a new refugee township at Gandhidham.

The Second Plan provided Rs. 14 crore of direct Government investment in Kandla. The programme included the construction of two more jetties to handle the additional iron ore traffic from Rajasthan, and the development of Gandhidham.

By the end of 1958-59, construction of four deep water cargo berths with ancillary facilities had been completed and opened for use by ocean-going steamers.

## CIVIL AVIATION

Nine new aerodromes were built in India during the First Plan period, raising the total maintained by the Civil Aviation Department to 81. Four others were built by the end of 1959, thus raising their number to 85. During the Second Plan, extensive improvements have been carried out at the aerodromes and modern equipment installed. In the remaining period of the Second Plan, four new aerodromes and glider-dromes will be built, apart from a heavy programme of civil aviation works.

The nationalization of the air services was completed in the First Plan and two Corporations—Air India International and the Indian Airlines Corporation—were set up in August 1953. Indian Airlines now have a fleet of 82 aircraft and link most of the big towns in India, while the services of the other Corporation reach out to 19 countries. Provision has been made in the Second Plan for further modernization and expansion of services of both these Corporations at a cost of Rs. 30·5 crore.

## POSTS AND TELEGRAPHS

The policy in the First Plan was to open a post office in every group of villages located within a radius of two miles and having a total population of 2,000 provided the annual loss involved was not more than Rs. 750 and there was no other post office nearby. In pursuance of this policy, nearly 19,000 new post offices were opened during the First Plan period, bringing their total number to 55,000 at the end of March, 1956.



During the Second Plan, it was proposed to extend postal facilities to every group of villages lying within a radius of four miles. In this way, it was proposed to open 20,000 new post offices by the end of 1960-61. Up to the end of 1958-59, 10,000 new post offices had been opened, bringing their total number to 65,000.

As regards the telegraph offices, 1,500 new offices were opened during the First Plan, and 1,400 more were scheduled for the next five years. The aim was to make the telegraph service available within a short distance, say five miles, of every place in the country. By the end of 1958-59, 900 new telegraph offices had already been opened, bringing their total number to 6,000.

#### BROADCASTING

The First Plan's target of providing each Indian language with at least one medium-wave transmitting station was fully achieved. The aim in the Second Plan was not to increase the number of stations, but to strengthen the transmitters. Other features of the programme, for which Rs. 9 crore were provided, were increased facilities for rural listening and a beginning in the field of television. The latter objective was achieved when, in November 1959, an experimental television station was set up in Delhi.



## VI. SOCIAL SERVICES

In any development programme there must be provision for social services if economic progress is to be translated into better conditions of living for the common man. The First Plan, therefore, provided Rs. 532 crore for educational, health and housing facilities and for the welfare of industrial labour, displaced persons and other under-privileged classes. Under the Second Plan, it was proposed that these programmes should be extended further and a total provision of Rs. 810 crore (revised) was made for the purpose.

### EDUCATION

One of the Directive Principles of the Constitution is that by 1960 free and compulsory education should be provided for all children up to the age of 14. It will not be possible to reach this goal in the time stipulated, but the proportion of children aged 6—14 attending school had risen from 32 per cent in 1950-51 to 40 per cent in 1955-56. It is expected to reach nearly 50 per cent by the end of the Second Plan.

The programme for primary education in the Second Plan is directed towards expanding teaching facilities and rebuilding the system on the lines of basic education. At the secondary school stage the aim is to introduce crafts and diversify courses on the lines recommended by the Secondary Education Commission.

### MALARIA CONTROL

The First Plan set apart Rs. 15 crore for a country-wide malaria control programme. In all, 162 control units were established. The National Malaria Control Programme was converted into the National Malaria Eradication Programme from April 1, 1958. This programme is being implemented with the assistance of the State Governments, the U.S. Technical Co-operation Mission and the W.H.O.

### ANTI-T.B. CAMPAIGN

A mass B.C.G. vaccination campaign was undertaken during the First Plan with the aim of controlling this dread disease. By



the end of 1955-56, more than 70 million people had been tuberculin-tested and 24·5 million vaccinated. The aim in the Second Plan was to cover the entire susceptible population below 20 years of age, besides establishing or expanding about 200 chest clinics. By the end of October 1958, 11·62 crore persons had been tested and 4·07 crore of them vaccinated.

### HOSPITALS

In 1951 there were 8,600 medical institutions in the country with a total of 113,000 beds. By 1955-56, they had increased in number to 10,000 institutions with about 125,000 beds. The Second Plan provided Rs. 43 crore for improving hospital services. This was to result in an increase in the number of institutions to about 12,600 and the beds to 155,000.

By the end of 1957-58, the number of hospitals had gone up to 10,200 and of beds to 134,000.

### SUBSIDIZED INDUSTRIAL HOUSING SCHEME

Started in 1952, this scheme provided for the building of workmen's houses out of subsidies and loans furnished by the Centre to the State Governments, who in turn made allocations to construction agencies, employers and workers' co-operatives.

About 43,800 tenements—half the number sanctioned for construction—were completed during the First Plan. The target laid down for the Second Plan was 128,000 houses. Up to the end of August 1958, about 77,000 houses had already been constructed.

### SLUM CLEARANCE

The programme for the clearance of slums in the towns did not make much headway during the First Plan. Many States were unable to proceed with their schemes because of the high cost of acquiring slums and rehousing their inhabitants at rents the latter could afford.

During the Second Plan period, however, a determined effort is being made to clear slums in at least the larger towns. A provision of Rs. 20 crore has been made for financial assistance to the States' programmes by way of subsidies and loans.



### LOW INCOME GROUP HOUSING SCHEME

The Low Income Group Housing Scheme, which was introduced towards the end of 1954, provides for the grant of long-term building loans at reasonable interest to persons whose income does not exceed Rs. 6,000 per annum. By the end of 1955-56, loans amounting to Rs. 21·3 crore had been sanctioned for building about 40,000 houses. The target for the Second Plan is 68,000 houses.

In 1959, a middle-income group housing scheme with the co-operation of the L.I.C. was also introduced to help people having an income up to Rs. 12,000 a year, with loans up to Rs. 25,000.

### EMPLOYEES' STATE INSURANCE SCHEME

This scheme, which provides a considerable measure of social security, was introduced in 1952. Apart from employers and workers in the areas covered, employers all over the country contribute a portion of their total wage-bill to the Employees' State Insurance Fund. The scheme at present confers sickness, maternity, injury and other benefits on about 15 lakh workers with monthly earnings up to Rs. 400 working in factories using power and employing 20 or more persons. This number will eventually rise to 2½ million when the whole country is covered.



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