

INDIA

HABITAT-76

THE UNITED NATIONS CONFERENCE ON HUMAN SETTLEMENTS

VANCOUVER, MAY 31-JUNE 11, 1976



With Compliments from

Dr. A. Ramachandran
Secretary to the Government of India
Department of Science and Technology



Country Report: India

Habitat - 76

The United Nations Conference
on Human Settlements

Vancouver, May 31—June 11, 1976

acknowledgements

The Country Report for India has been prepared jointly by the Office of Environmental Planning & Coordination, Department of Science & Technology and by the Town & Country Planning Organisation, Ministry of Works & Housing, under the auspices of the National Committee on Environmental Planning & Coordination. The following Departments and Ministries of the Government have also helped in preparing this document:

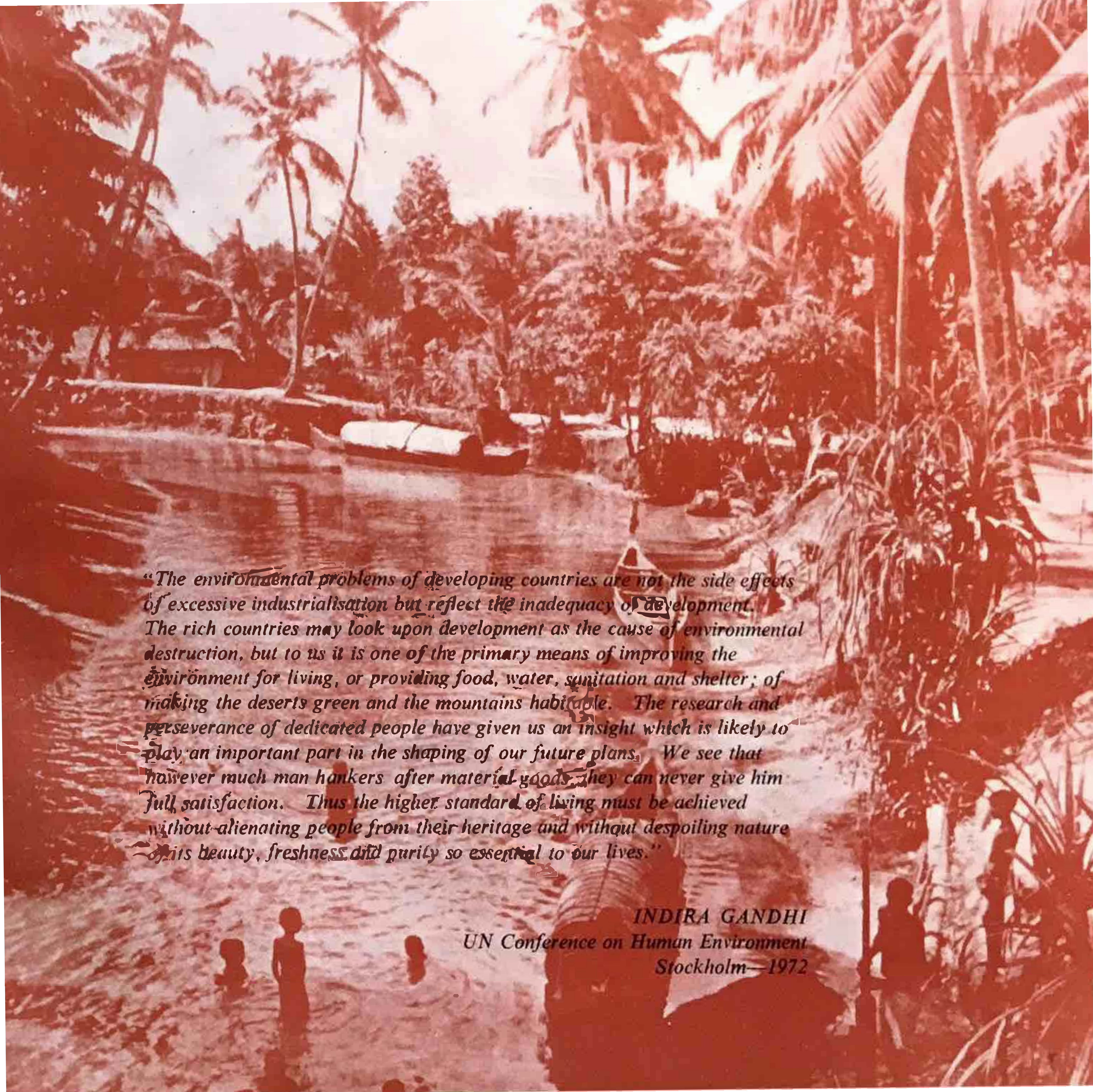
- | | | |
|--|---|---|
| 1. Department of Rural Development,
Department of Irrigation,
Ministry of Agriculture & Irrigation | 6. Ministry of Health & Family Planning
7. Office of the Registrar General of India,
Ministry of Home Affairs | 10. Ministry of Information & Broadcasting |
| 2. Ministry of Energy | 8. Planning Commission,
Ministry of Planning | 11. National Building Organisation,
Ministry of Works Housing & Urban
Development |
| 3. Ministry of Shipping & Transport | 9. Department of Civil Supplies,
Department of Heavy Industry,
Department of Industrial Development,
Ministry of Industry & Civil Supplies | 12. Housing And Urban Development
Corporation Ltd. |
| 4. Ministry of Railways | | 13. School of Planning and Architecture,
New Delhi |
| 5. Steel Authority of India,
Ministry of Steel & Mines | | |

In addition, members of the High Level Committee and of the Preparatory Working Group for HABITAT and the Office of the Surveyor-General of India, deserve special mention for their sincere work and cooperation.



(B.D. NAG CHAUDHURI)

Chairman, High Level Committee for Habitat
Chairman, National Committee on Environmental Planning & Coordination,
DEPARTMENT OF SCIENCE & TECHNOLOGY, GOVERNMENT OF INDIA



"The environmental problems of developing countries are not the side effects of excessive industrialisation but reflect the inadequacy of development. The rich countries may look upon development as the cause of environmental destruction, but to us it is one of the primary means of improving the environment for living, or providing food, water, sanitation and shelter; of making the deserts green and the mountains habitable. The research and perseverance of dedicated people have given us an insight which is likely to play an important part in the shaping of our future plans. We see that however much man hankers after material goods, they can never give him full satisfaction. Thus the higher standard of living must be achieved without alienating people from their heritage and without despoiling nature of its beauty, freshness and purity so essential to our lives."

INDIRA GANDHI
UN Conference on Human Environment
Stockholm—1972

contents

INTRODUCTION

- Physiographical, climatological and geological features ● Distribution of population ● Planning of Early Human Settlements
- Rural Settlements ● Planning since Independence.

5—14

HUMAN SETTLEMENTS IN INDIA TODAY

- Process of Development ● Regional Development ● Rural Development ● Urban Development ● Master Plans
- New Towns ● Changing Pattern of Human Settlements ● Rural-Urban Migration ● Squatter-Settlement and Slums
- Slum-Improvement Programmes ● Landuse Structure of Urban Settlements ● Quality of Environment in Human Settlements.

15—44

NATIONAL POLICIES AND PROGRAMMES RELATING TO HUMAN SETTLEMENTS

- Family Planning Programme ● Economic Policy ● Land Policy ● Industrial Location Policy ● Guidelines for Urbanisation
- Housing Policy and Programmes ● Social Housing Programme ● Transportation Policy ● Road Transportation
- Guidelines for Energy Policy ● Environmental Legislation ● National Urbanisation Policy ● Urban Land Ceiling.

45—74

AN APPROACH TO POLICIES FOR HUMAN SETTLEMENTS

- Magnitude of Population ● Availability of Resources ● Policy framework for Human Settlements ● National Level
- Regional Level ● Local Level ● Epilogue.

75—91

“Temples are to be erected. Let there be selection of building plots and the placing and spacing of buildings. Create triangular and quadrangular ‘places’ at the junction of roads, or at any suitable spot. Measure up the royal roads. Ascertain the orientation of buildings. Thus ordered, the Yadavas engaged for the purpose began in right earnest; selected the site; measured up the boundary lines; carried out the division of plots; and on an auspicious day made offerings to the presiding deities or the ‘vastu’ or site. When they were thus ready to commence their work, Krishna reiterated his instructions and laid special stress upon the establishment of divine edifices. They carried out the orders, reserving special sites for trees.”

DEVI PURANAM, Vishnu Parva, Ch 58

introduction



© GOVT. OF INDIA COPYRIGHT '76 based upon Survey of India map with the permission of the Surveyor General of India. The territorial waters of India extend into the sea to a distance of 12 nautical miles measured from the appropriate base line. The boundary of Meghalaya shown on this map is as interpreted from the North Eastern Areas (Reorganisation) Act 1971 but has yet to be verified.

Physiographical Climatological and Geological Features

PHYSICAL FEATURES

SOURCE

Office of the Surveyor General of India

LEGEND

Mountain Ranges



Rivers



BOUNDARY

International
State

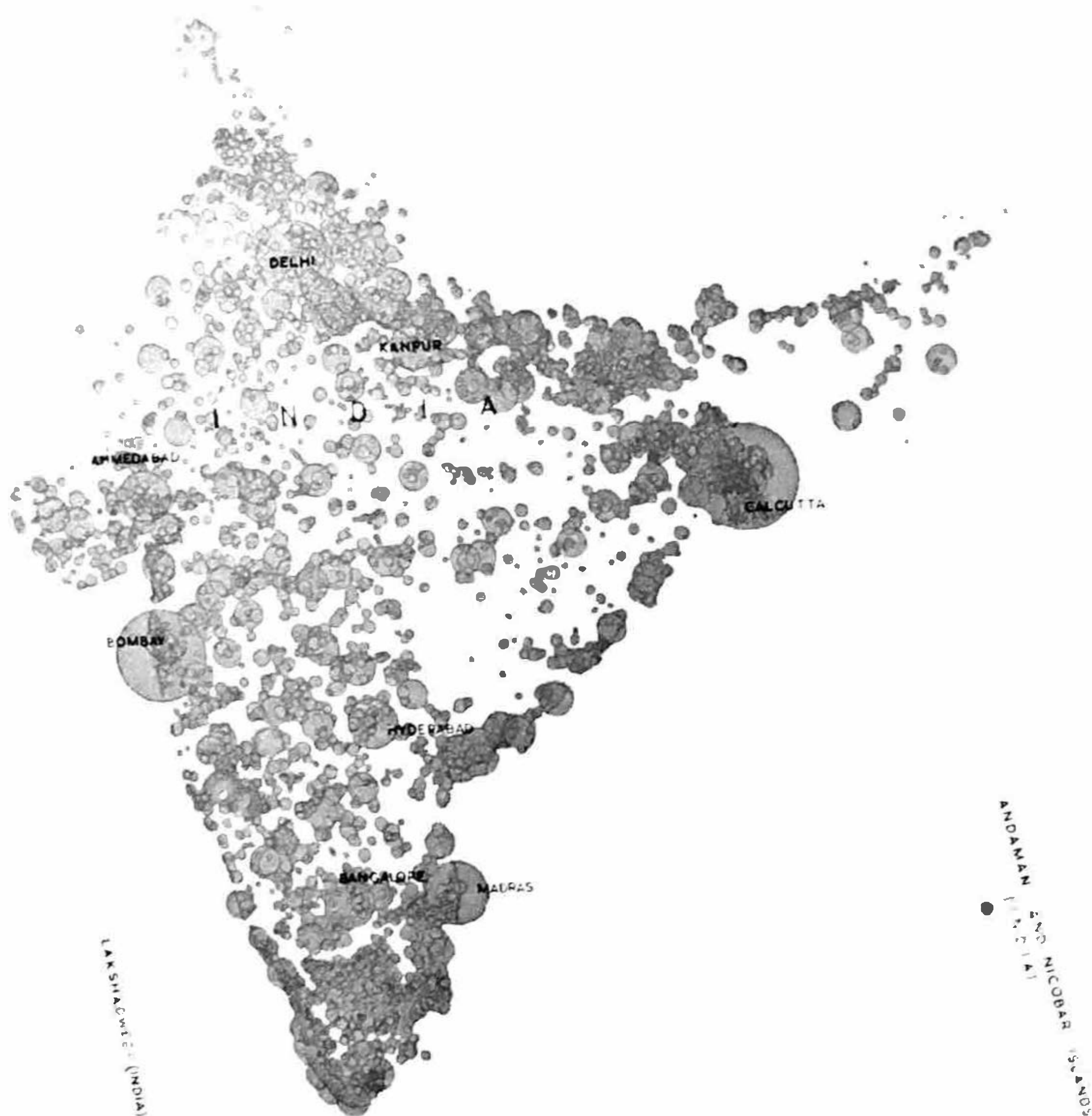


1.1.1 A land of prehistoric sites, birth-place of many religions, cradle of several civilisations—enriched by settlers from alien cultures—INDIA today represents a unity in diversity of people, languages, arts and traditions. With an area of 328 million sq kms and a population of nearly 600 million, it is the second most populous and seventh largest country in the world. It is marked by a great diversity of physical features, climatological conditions and cultural patterns.

1.1.2 The main landmass consists of the world's highest mountain ranges in the north, the largest alluvium plains in the centre—drained by the tributaries of the Indus, Ganges and Brahmaputra river systems—and the highly metamorphosed Deccan Plateau in the south.

1.1.3 The Indo-Gangetic plain is also one of the oldest and most densely populated areas on earth. It is a tropical monsoon region. The western 'ghats' (hill ranges), the adjoining coastal strips and some parts of the east are areas of very heavy rainfall. In contrast Rajasthan, Kutch and the high Ladakh plateau are desert-like regions with low precipitation.

1.1.4 Due to the varying geological, physiographical and climatological characteristics, India's agricultural regions are widely distributed, whereas the industrial resources like forests, minerals and energy sources are concentrated in certain areas. Over three thousand years of cultivation and a century of industrialisation have considerably altered the natural environment.



Distribution of
Population

DISTRIBUTION OF
SETTLEMENTS

SOURCE

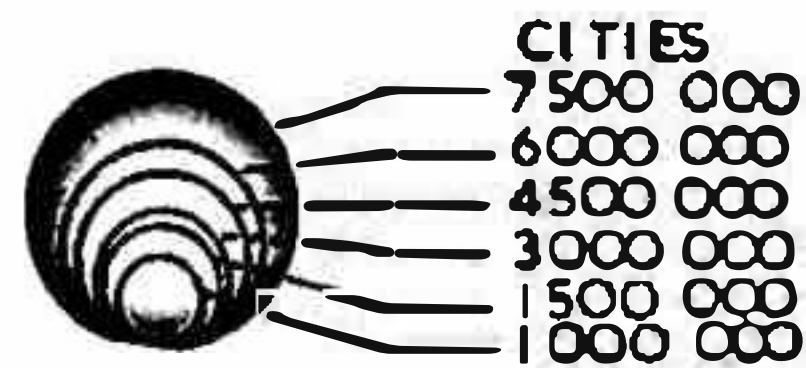
Office of the Registrar General of India

LEGEND

Size of Population of cities/towns

100 000 - 999 999	●
50 000 - 99 999	●
20 000 - 49 999	●
10 000 - 19 999	•
below 10 000	•

Each solid dot represents 20000 rural population
Constituent units of large urban agglomeration
have also been shown.



BOUNDARY

International

1.2.1 The growth of the population and its distribution has affected the planning and development of human settlements. The concentration has closely followed the distribution of resources. The densely populated areas are almost in a continuous belt stretching from the irrigated plains in the states of Punjab, Uttar Pradesh and Bihar to the tip of the peninsula and then stringing along the coast line on the west upto the Gulf of Cambay. The pressure of agricultural population on the available land resources is the heaviest in the rice tracts of north Bihar, eastern Uttar Pradesh, the coastal plains of Kerala, the Hooghly Basin of West Bengal, Mahanadi delta of Orissa and the Brahmaputra valley of Assam.

1.2.2 According to the census of 1971, the population of the country has grown from nearly 250 million to 548 million in the last fifty years. The annual growth recorded was nearly two and a half per cent during 1961-71. During 1921-71, India's population has increased by 118 per cent while that of the world rose by 93 per cent, and that of the developed countries by 60 per cent.

1.2.3 India's population today is distributed in 579,052 human settlements. Nearly 80 per cent lives in 575,933 villages varying in population from 100 to 25,000. The remaining 20 per cent lives in 3,119 urban settlements of between 5,000 and nearly nine million people. The average population of the villages works out to 762. Over 20 per cent of the urban population lives in eight metropolitan cities and another 30 per cent lives in 143 cities with more than 100,000 people.

Planning of Early Human Settlements

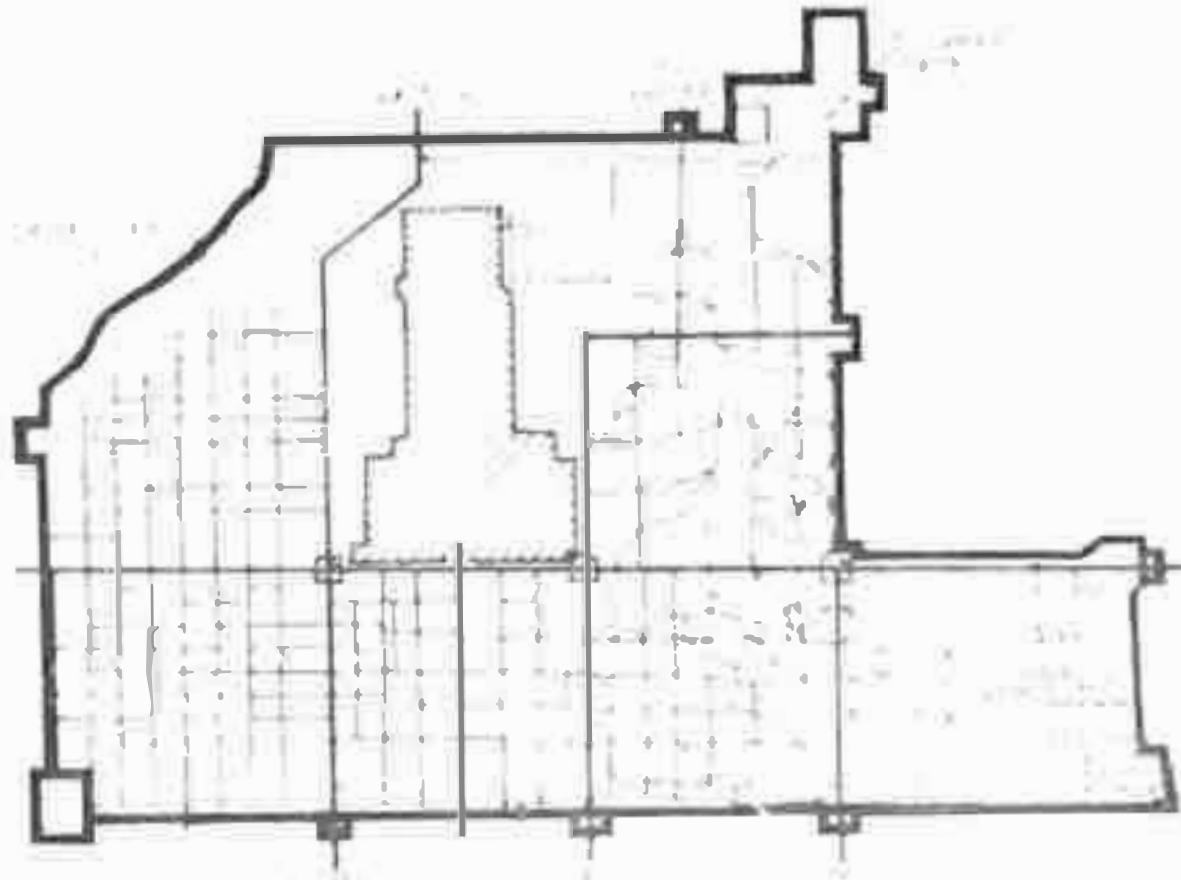


1.3.1 The earliest example of settlement planning now available in India goes back almost 3,500 years. Lothal, the port town near the Gulf of Cambay in Gujarat and Kalibangan in Rajasthan (where the world's oldest ploughed field has been discovered) belong to the age of the Indus Valley Civilisation. Vedic texts and treatises like Vastushastra, Manasara and Mayamatam, lay down principles for location and planning of villages and towns. The Arthashastra of Kautilya written three centuries before the Christian era added the further dimensions of fiscal planning and town administration.

1.3.2 Ancient concepts of Vedic town planning can still be seen in some of the cities of South India, like Madurai, Srirangam and Kanchipuram. These cities were built with the temple as the focal point and concentric square streets all around. The square sectors were allocated for residential quarters of distinct occupational groups.



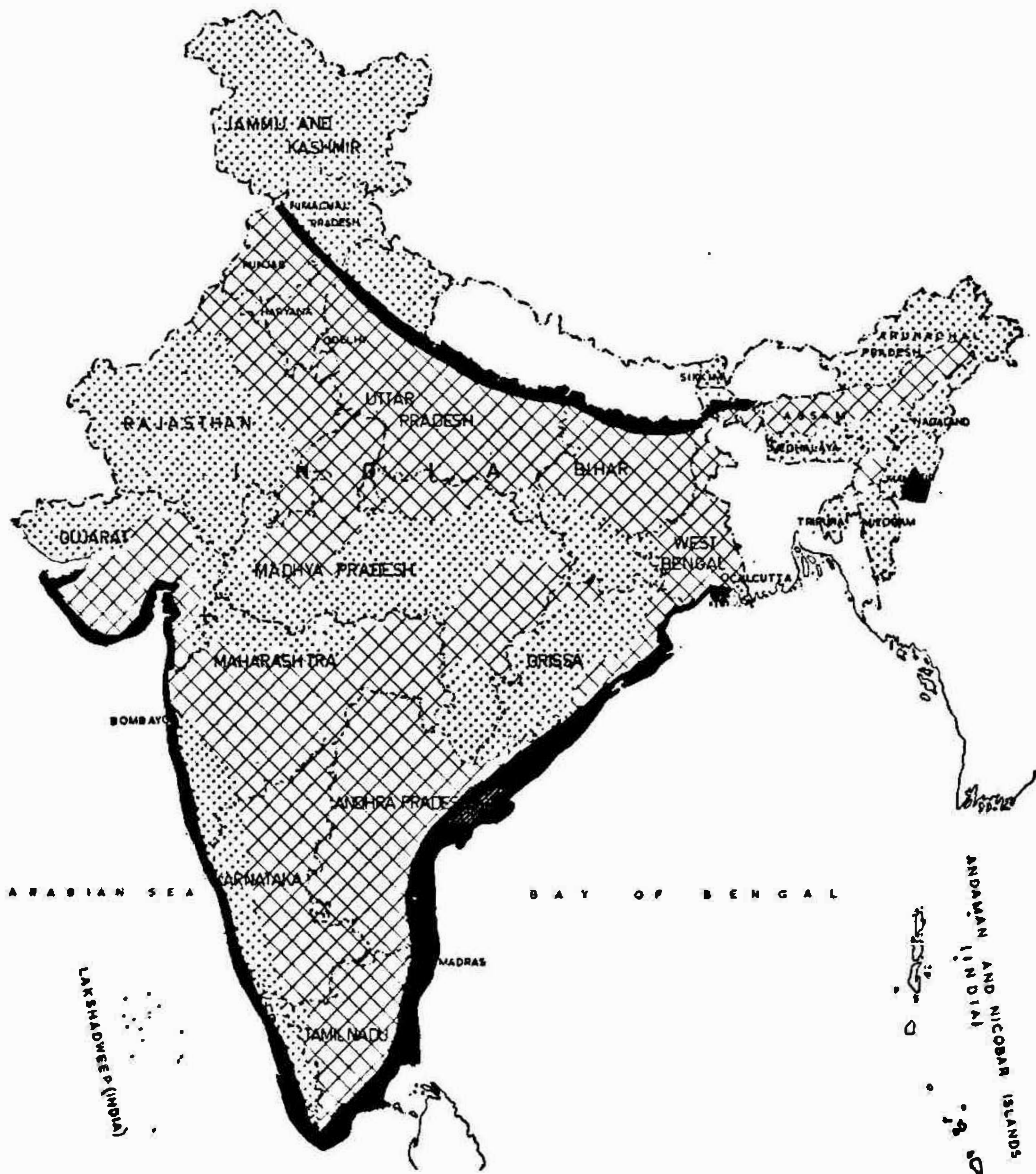
1.3.3 In North India, a number of towns and cities were developed during the period of the Mauryas, the Guptas and later the Sultanate and the Mughals. Shahjahanabad, the walled city of Delhi, constructed in circa 1640, is one of the finest examples of Mughal town planning. The city grew around the main axis between the royal palace and the mosque. Other cities constructed in this period were Fatehpur Sikri, Agra, Lucknow etc. The emphasis was on grand architecture and on civic design.



1.3.4 The princely states of India, had their capital cities as the focal point of their kingdoms. Jaipur, Udaipur, Hyderabad and Mysore are among the best known examples of such cities. Jaipur, built by Maharaja Sawai Jai Singh II during 1720's, is one of the finest examples of the revival of Indian town planning principles found in Vedic texts. The city was planned on a grid pattern with strict architectural and land-use controls on the main streets. The residential areas were planned around a spatial hierarchy of "chowks" (public squares) leading consecutively through a gateway to the main 'bazaar'. The street intersections were characterised by public buildings in their four quadrants.



1.3.5 During the British rule, the growth of international trade and industry necessitated the development of port towns like Madras, Bombay and Calcutta. They were connected by land routes along which settlements in the form of cantonments and civil lines like Meerut, Ambala, Allahabad were developed. New industrial towns like Ahmedabad, Jamshedpur, Kanpur etc. and hill stations like Simla, Mussoorie, Dalhousie also became significant because of preferred economic and climatic conditions. The British, in 1911, shifted the seat of power from Calcutta to Delhi—the traditional capital of numerous dynasties. New Delhi, the new capital of India was planned as a "garden city" with grand villas, wide tree lined avenues and extensive green spaces.



© GOVT. OF INDIA COPYRIGHT '76 based upon Survey of India map with the permission of the Surveyor General of India. The territorial waters of India extend into the sea to a distance of 12 nautical miles measured from the appropriate base line. The boundary of Meghalaya shown on this map is as interpreted from the North Eastern Areas (Reorganisation) Act 1971 has yet to be verified.

Rural Settlements

GENERALISED ZONES OF RURAL SETTLEMENTS

SOURCE

Office of the Registrar General of India

LEGEND

Nucleated



Linear

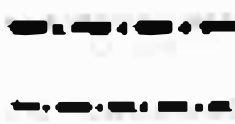


Dispersed



BOUNDARY

International
State



1.3.6 The rural settlements in India, have grown in harmony with the surrounding natural environment. The distinctive character is provided by factors such as the existence of a resource or social stratification. Commonly found forms are, the 'dispersed homestead' on undulating terrain where water points are frequent and fertility is low, the 'linear settlement' arranged as a ribbon in two parallel rows of houses along transport routes or water bodies, or the 'tightly nucleated' village in fertile plains or well watered regions. A major factor influencing location of houses is the tendency for similar occupational groups to live close together. At places social distances between groups are evident even in the evolution of the village.

1.3.7 Rural India was largely unaffected by political change and contributed marginally its share of goods and services to the national economy. The self-contained nature of the Indian village tended to make them 'inward looking' to the extent that at times they got isolated from the monetary system. Even today, agriculture and its ancillary activities continue to be the main occupation of the rural population. It was during the freedom struggle that Mahatma Gandhi brought to the attention of the nation the plight of the rural masses and the socially depressed people, and tried to break the barrier between rural and urban communities.

Planning Since Independence

1.4.1 With the attainment of Independence in 1947 and the partition of the country, a large number of people were displaced from Pakistan crowding into the cities and towns of north-western and eastern parts of the country. The new-born nation needed to accommodate this influx of population and harness its resources for increasing agricultural and industrial production besides

evolving mechanisms of distribution to a large population. On the one hand, large scale rehabilitation programmes were undertaken for the displaced persons whereas on the other, various multi-purpose projects were initiated to evolve the basic infrastructure of power, irrigation and transportation for future growth.

1.4.2 The Indian Constitution was adopted in 1950. It provided for equality of opportunity, social justice, and freedom of participation in the development of the country. To translate these concepts into reality, the Planning Commission was established in the same year to assess the country's material, capital and human resources and to devise development in a planned manner. The process of comprehensive development is expressed through a chain of 'five year' development plans. These plans are visualised as a part of a long range perspective.

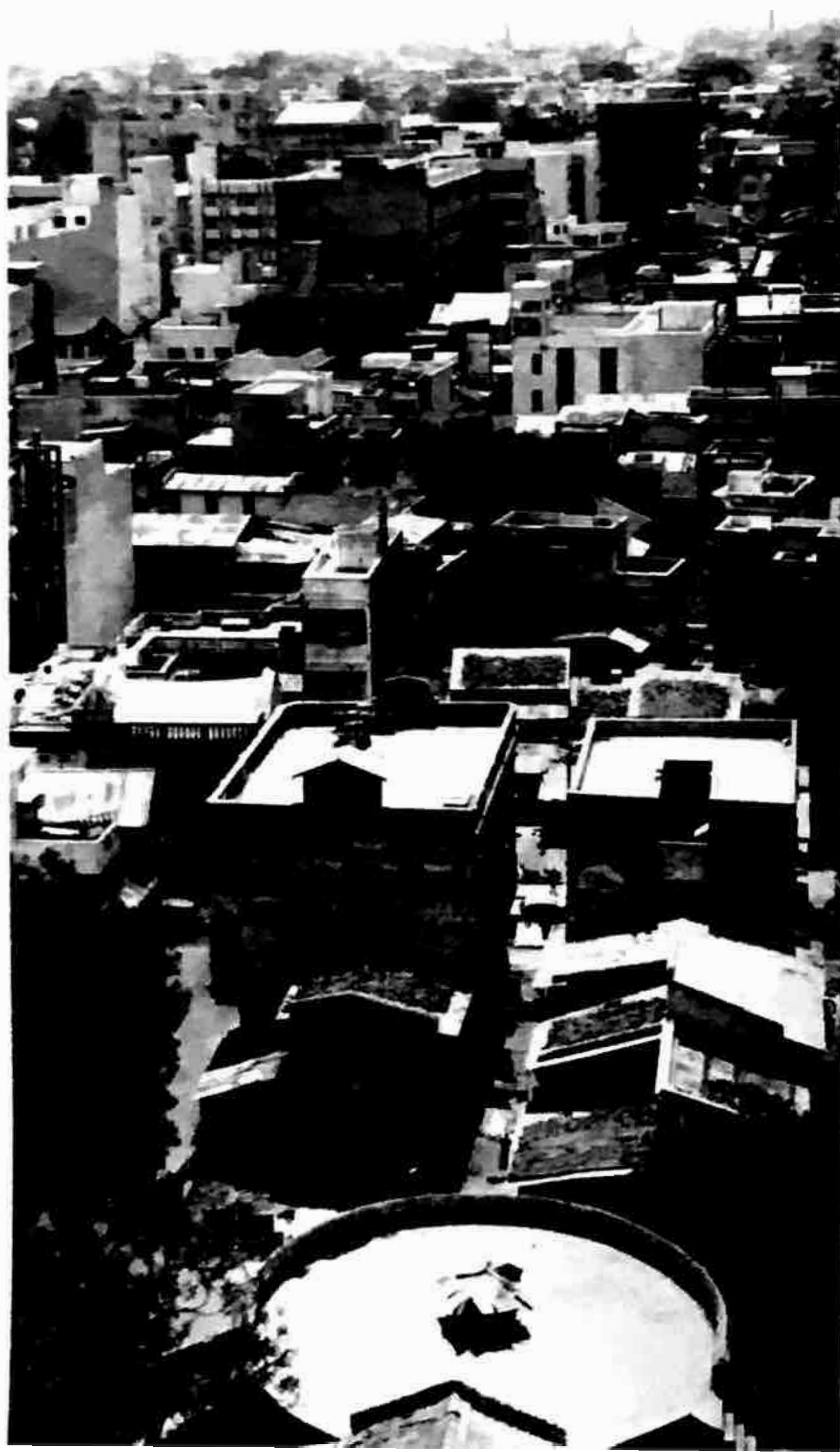
1.4.3 The First and Second Five Year Plans were concerned with the building of the industrial infra-structure. The Third Plan extended its scope to emphasise social objectives of the Constitution. The Fourth Plan, focused attention on slums, squatters and on environmental sanitation in urban as well as in rural areas. The Fifth Plan (1974-79) has recognised that in spite of the measures taken in the past two decades, migration from rural areas is continuing and the backlog of needed employment opportunities, housing and civic amenities in urban areas is increasing. It has focused its attention on improvement in the living conditions of the rural population and of the weaker sections of the urban population. It envisages that it will be only through minimising the extent of differentials in terms of living conditions between the town and the village that the process of migration from the rural areas be stabilised.

“Most Indian cities can be divided into two parts: the densely crowded city proper, and the widespread area with bungalows and cottages, each with a fairly extensive compound or garden, usually referred to by the English as the ‘Civil Lines’. It is in these Civil Lines that the English officials and businessmen, as well as many upper middle-class Indians, professional men, officials, etc., live. The income of the municipality from the city proper is greater than that from the Civil Lines, but the expenditure on the latter far exceeds the city expenditure. For the far wider areas covered by the Civil Lines requires more roads, and they have to be repaired, cleaned up, watered, and lighted; and the drainage, the water supply, and the sanitation system have to be more widespread. The city part is always grossly neglected, and, of course, the poorer parts of the city are almost ignored; it has few good roads, and most of the narrow lanes are ill-lit and have no proper drainage or sanitation system. It puts up with all these disabilities patiently and seldom complains; and when it does complain, nothing much happens, Nearly all the Big Noises and Little Noises live in the Civil Lines.”

*JAWAHARLAL NEHRU,
as Chairman, Allahabad Municipal Committee 1921-23.*

human settlements
in india to-day

Process of Development



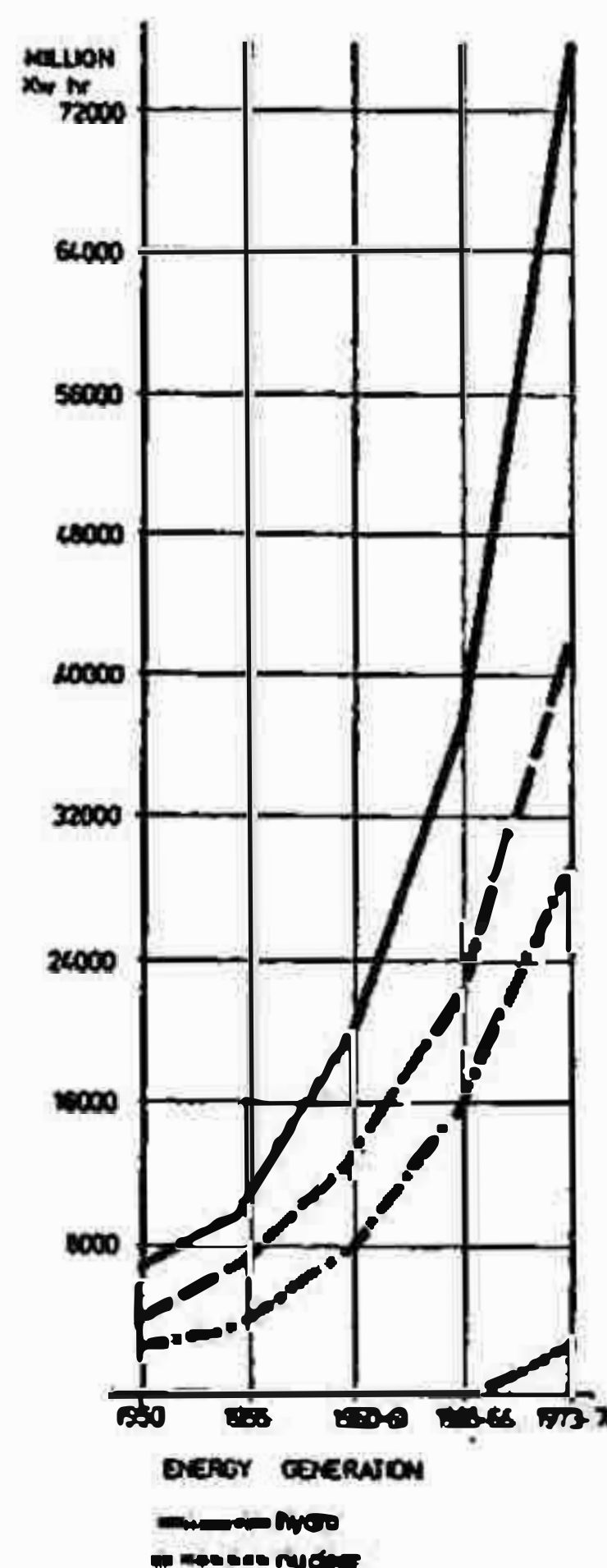
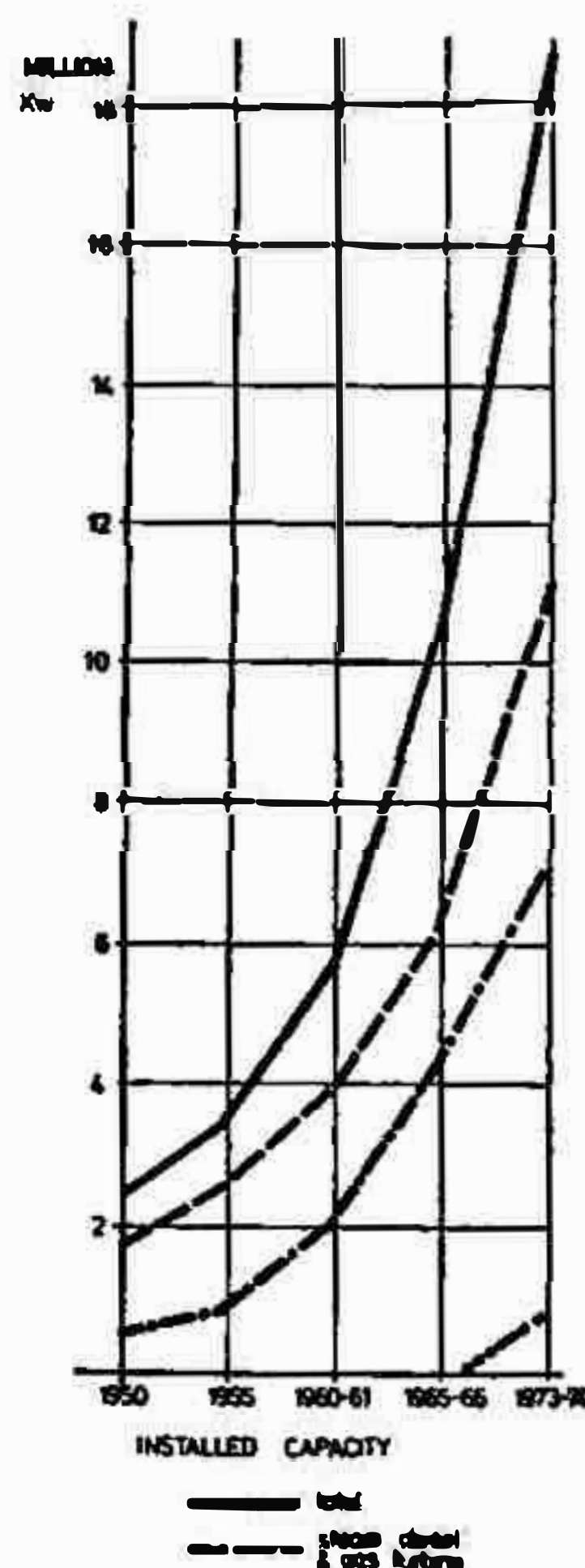
2.1.1 The development effort in the country has exposed human settlements to a wider field of activities and opportunities and has established new linkages between communities and regions. As a result of the development of irrigation, agricultural techniques, rural electrification, growth of processing and allied industries, transportation networks, location of industrial estates, regulated markets, warehouses, cold-storage facilities, schools and health centres and the extension of community organisations, the Indian village is gradually becoming a part of the larger entity.

2.1.2 The feudal Indian city, archaic and static to a large extent at the time of Independence is fast changing into a dynamic metropolis. The phenomenal increase in urban population, the establishment of primary industries and availability of industrial infrastructure, in addition to the expansion of national and international trade and the increased administrative responsibilities have necessitated the reorganisation of urban settlements. The continuous migration from rural areas has brought the innocent migrant from the village in direct contact with the urban elite. The juxtaposition at times has been too soon and sudden. This has created conflicts arising out of differing social values and life styles.

2.1.3 However, the planning process in India had recognised the ethos of rural and urban settlements, from the beginning. Whereas the Third Five Year Plan had emphasised the importance of urban development and provided full assistance for the preparation of the Master Plans of selected areas, the Fourth Plan

reiterated the need for a balanced spatial distribution of economic activity and laid emphasis on the need to prevent unrestricted growth of metropolitan cities. It also recommended a regional approach to the problem of human settlements. The process of development has occurred through various multipurpose schemes and programmes.

Regional Development



2.2.1 Recognizing the importance of regional planning for the overall development of the country, the Five Year Plans envisaged large scale multi-purpose projects and river valley schemes. The vulnerability of India's agriculture to the vagaries of the monsoon, made it imperative to accord irrigation a high priority. More than 600 large and medium sized projects have been undertaken since Independence of which 380 have been completed and many others have started yielding partial benefits. Bhakra Nangal, a joint venture for development of irrigation and power potential of the states of Haryana, Punjab and Rajasthan, has a capacity of over 1200 mw and its 1400 km long canal network irrigates nearly 1.5 million hectares of land. Rajasthan canal which uses the waters from Bhakra and Pong Dam (north of Bhakra) irrigates 225,000 hectares of Thar Desert in north west Rajasthan and has a potential for irrigating over 1.5 million hectares when completed. The Damodar Valley Project was conceived to control the fury of Damodar River to utilize it for irrigating nearly 370,600 hectares of land. In addition it will generate nearly 104 mw of electricity which when combined with 1200 mw generation capacity of the thermal power plants owned by the Damodar Valley Corporation will be able to meet the demands of industrial activity and of domestic consumption of the region.



2.2.2 The total irrigated area in the country has increased from 22.6 million hectares in 1950-51 to nearly 44.7 million hectares in 1973-74. Similarly the total installed generating capacity has increased from 2.3 million kilowatts in 1950-51 to over 18.5 million kilowatts in 1973-74. The per capita consumption of power has increased from 38 kwh in 1960-61 to 96.6 kwh in 1973-74.

*GROWTH OF IRRIGATION

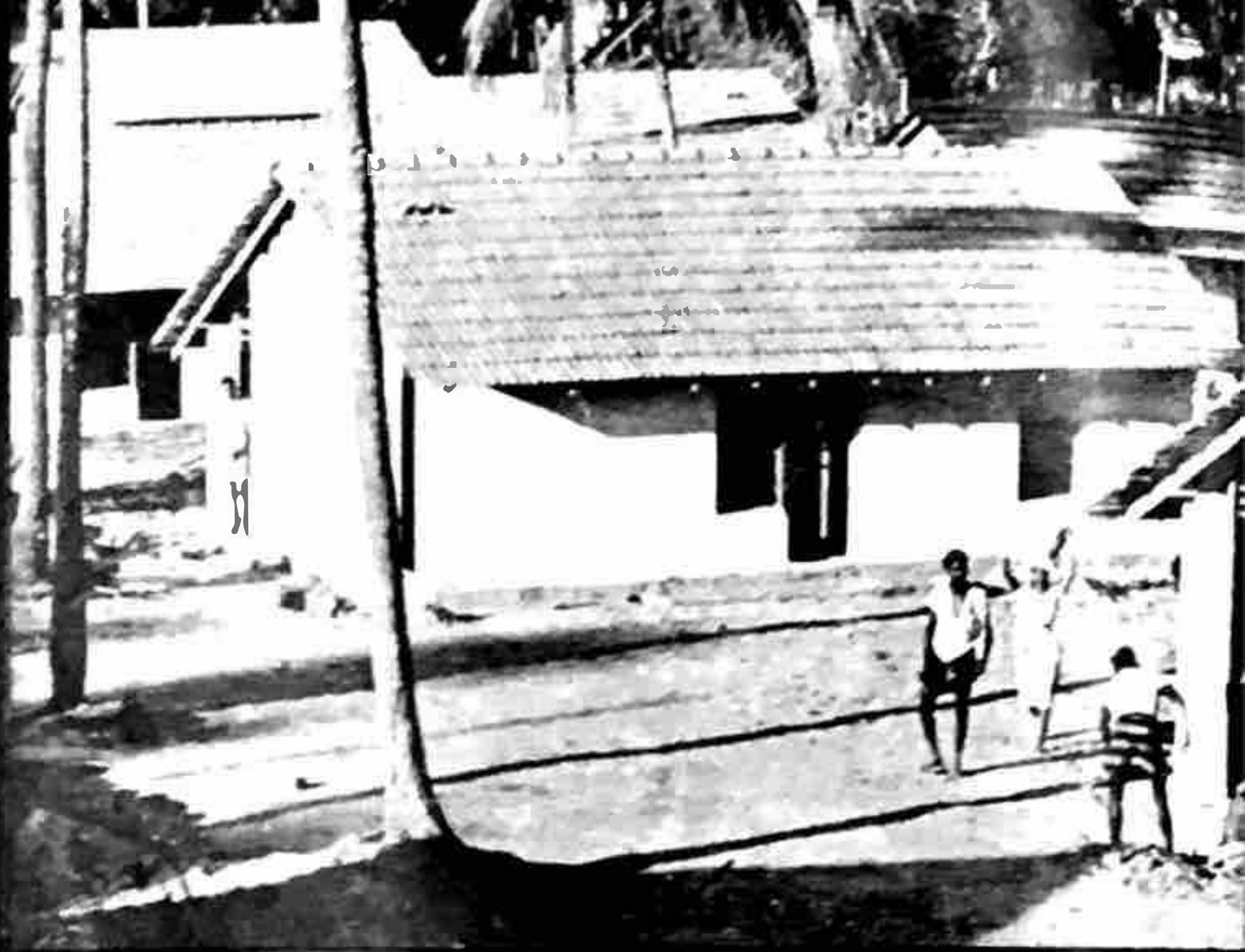
Additional Potential at the end of	Potential (million hectares)	Utilization (million hectares)
1st Plan 1956	2.5	1.5
2nd Plan 1961	4.6	3.3
3rd Plan 1966	6.9	5.5
4th Plan 1974	11.5	9.8

SOURCE: *India—1975, Min. of Information & Broadcasting.

2.2.3 Multipurpose projects have had a profound impact on the quality of life of the people, on the land-use pattern, on agricultural and industrial production, on transportation, on education and on availability of civic amenities. These projects have played a major role in the 'Green Revolution' by providing irrigation. They have been responsible for the transformation of remote towns into industrial centres. For instance, Nangal and Sindri in the Punjab, Ganganagar and Kota in Rajasthan, Panipat, Sonipat and Faridabad in Haryana are among the many towns which are fed by the Bhakra Power System. They have also been a significant factor in the development of rural areas.

Rural Development

2.3.1 It was realised that in an agricultural country like India, where the production units were numerous but small and scattered, co-operative form of organisation facilitated setting up of decentralized economic units enabling, at the same time, economies of scale. During the Second Five Year Plan, the scope of cooperatives was extended to cover agriculture, minor irrigation, small industries, processing, manufacturing, distribution of supplies, rural electrification, housing and provision of essential amenities. It was supported by the extension of Government policies, financial assistance



***OCCUPATIONAL CLASSIFICATION—1971**

Occupation	Rural Labour Force (millions)	Percentage to total
Cultivators	76.5	51.6
Agricultural labour	45.6	30.8
Livestock, fishing & others	3.8	2.6
Mining and quarrying	0.6	0.4
Manufacturing	8.2	5.5
Construction	1.1	0.7
Trade and Commerce	3.6	2.4
Transport, storage and communication	1.2	0.8
Other services	7.8	5.2

*National Buildings Organisation, mimeo—February, 1975.

and administrative control. Today, there are over 300,000 co-operatives in the country of which two third service agriculture.

2.3.2 There are co-operatives for the provision of credit and supply of inputs, farming, livestock, poultry, milk, processing and marketing of agricultural produce. In 1972, there were nearly 158,000 service societies in the country with a membership of 34 million covering nearly 95 per cent of the rural settlements and 41 per cent of the rural population.

2.3.3 The cooperative marketing structure consists of 3,300 primary marketing cooperatives, covering all important agricultural markets in the country, 20 state cooperative marketing federations and one national cooperative marketing federation. As of 31st March, 1974 the marketing cooperatives had developed a network of about 40,000 retail outlets and a storage capacity of 3.8 million tonnes. The setting up of cooperatives has acted as a nucleus for the socio-economic development of surrounding areas and has helped to develop a new class of rural entrepreneurs.

2.3.4 The protection of the consumer against rise in price of essential commodities was also attempted through co-operatives. One of the major examples which has achieved the twin objectives of producer and consumer welfare is the Kaira District Co-operative Milk Producer's Union also known as AMUL, located at Anand in Gujarat. The AMUL milk processing complex covers over 700 villages spread over an area of 6,200 sq km and connected by a road network of 1600 km. In 1970-71 the plant processed over 500,000 litres of milk every day and produced 9,464 tonnes of



CUMULATIVE ACHIEVEMENTS, 1952-1974

Pucca drains constructed (in kilometers)	45,753
Village lanes paved (in 1000 sq meters)	36,065
Drinking water wells constructed	616,454
'Kachcha' roads constructed (in kilometers)	597,756
Culverts constructed	370,000
Drinking water wells renovated	766,000
Rural latrines constructed	1,551,886
Adults made literate	18,393,047
Primary Health Centres	4,932

SOURCE: Department of Rural Development, Min. of Agriculture & Irrigation.

baby food per year in addition to processing butter and cheese for domestic consumption and for export. It has assured better economic returns to milk producers and has extended co-operative help in other sectors.

2.3.5 There are over 20,000 primary housing cooperatives with a membership of more than 1.3 million. In addition, the country has transport cooperatives in various states for passenger and freight traffic.

2.3.6 The community development programme, launched on 2nd October, 1952, aims at integrated development of rural India covering the social, cultural and economic aspects of community life. It is an area-wise scheme to utilise human and material resources available with emphasis on active community participation. The entire country has been covered by 5,123 operationally viable spatial units called 'development blocks'. Each block covers nearly 80,000 people living in one hundred villages. Specially trained people are posted to help in the extension of improved agricultural practices, animal husbandry and for organising traditional rural industries along cooperative lines. The officers are also responsible for improvement of basic education, social welfare, housing, health facilities, drinking water, sanitation, drainage, communication networks including roads etc. The success of the community development programme is evident from the readiness of the local people to contribute towards the cost of school buildings, road construction etc. and the initiative brought forth in terms of leadership and the organisational ability.

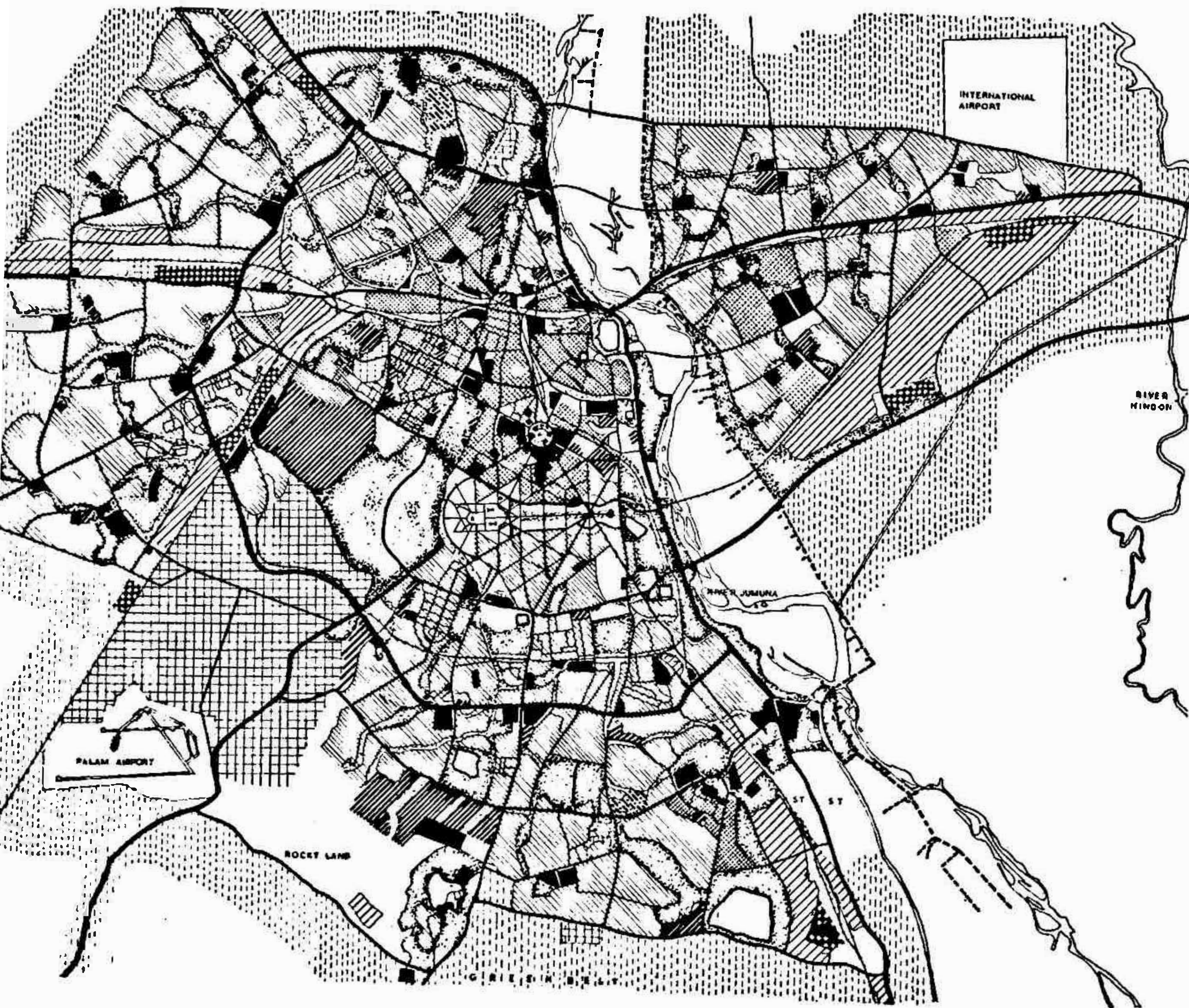
2.3.7 In addition, several special programmes are in operation in certain areas. The drought prone area

programme, initiated in 1970-71, envisages change in agronomic practices, pasture development through proper management of irrigation resources and livestock development. The Pilot Intensive Rural Employment Project (PIREP) launched in 1972-73 in 15 selected blocks generated 3.3 million mandays of employment in the first year. The Applied Nutrition Programme, carried out in collaboration with UNICEF, FAO & WHO is intended to educate the rural people in improvement of nutrition had covered 1,181 blocks by March 31st, 1974. The centrally sponsored "Pilot Research Project in Growth Centres" initiated during the Fourth Plan, aims at evolving a broad research methodology for the development of potential growth centres by providing social and economic inputs on the basis of a prepared inventory of local needs.

Urban Development

2.4.1 Since Independence urban settlements in India have faced several problems including (a) the influx of nearly nine million refugees from Pakistan, (b) location of industries, commercial centres and offices, (c) lack of adequate investments on public infrastructure, (d) continuous migration from adjoining and far flung rural as well as urban areas.

2.4.2 The Five Year Plans recognised the need for organised urban planning for the existing cities as well as for new ones. Since then 'Master Plans' have been prepared for 525 towns and cities in the country. Development in Delhi, Greater Bombay and Calcutta is taking place in accordance with the recommendations made by the Master Plans. Comprehensive legislation to control urban development has been enacted in various States, like—Madhya Pradesh, Maharashtra,

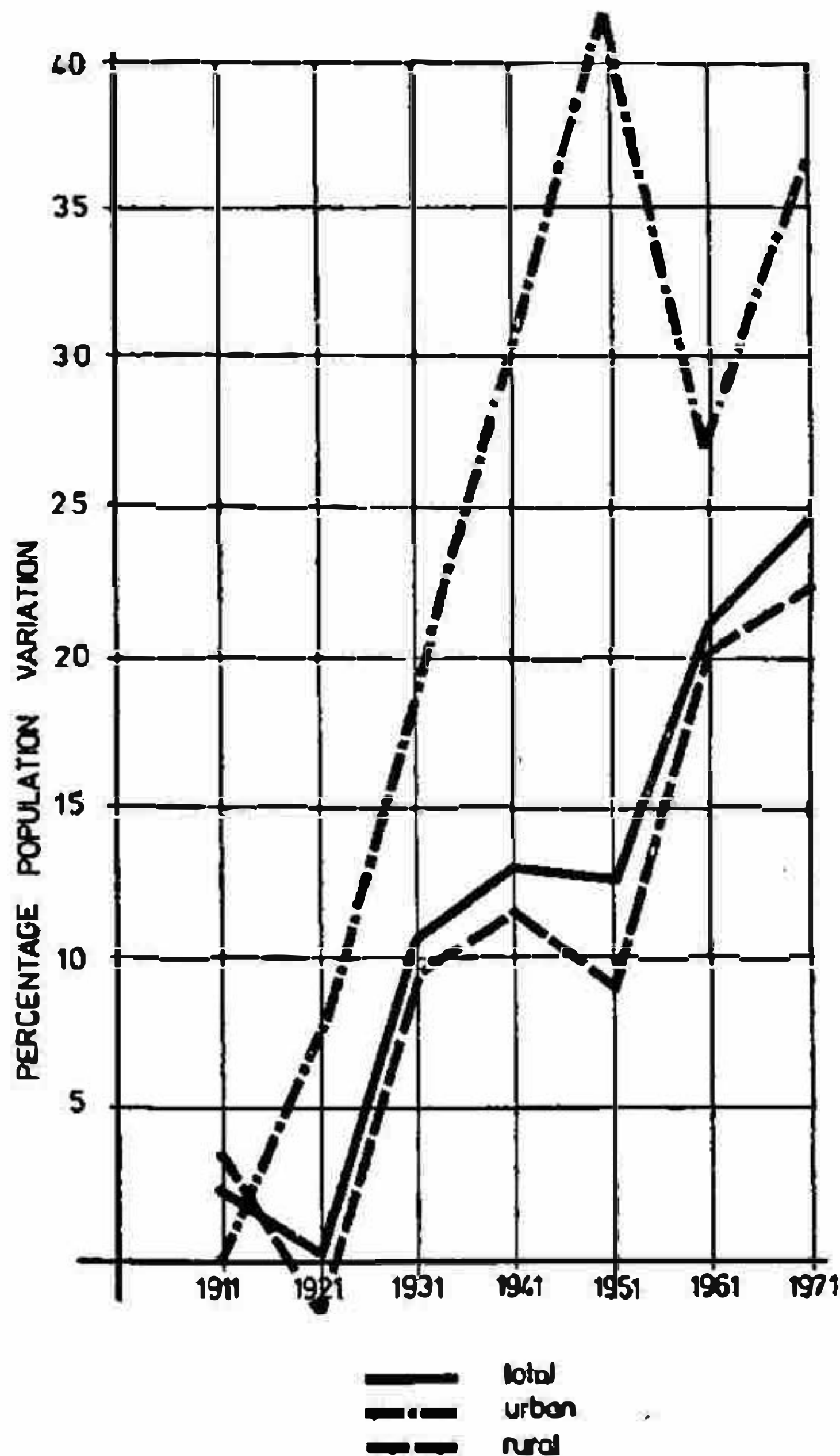


Delhi Land use Plan—1981

Andhra Pradesh, Tamil Nadu and in the Union Territories of Delhi, Goa, Daman and Diu, and Pondicherry. In fourteen other States legislation is under preparation.

2.4.3 The urban settlements are administered by Municipal Committees or Municipal Corporations having both deliberative and executive powers. For the implementation of Master Plans special development authorities have been created. The management of urban settlements has got separated into: (i) Municipal administration functioning through municipal committees with a number of elected representatives responsible for management of utilities and services, and (ii) special agencies to look after urban development works, undertaken by improvement trusts, by the State government, by public works departments etc. In addition, at times departments are created to look after functions like transportation, housing, slum clearance, electricity and water supply and sewerage.

2.4.4 Since most of the 'Master Plans' are advisory rather than mandatory in nature, a large number of agencies and government departments created had overlapping and at times conflicting powers and jurisdiction. Financial inadequacy at the local level, lack of proper land policies, inadequacy of town planning legislation and ineffective enforcement mechanism complicated the process of urban development and management. It has been felt that most of these plans aim at physical improvement and are not supplemented by social and economic inputs. A major shift in policy is now taking place in evolving metropolitan regional plans to reduce rural migration and integrate various aspects of urban development.

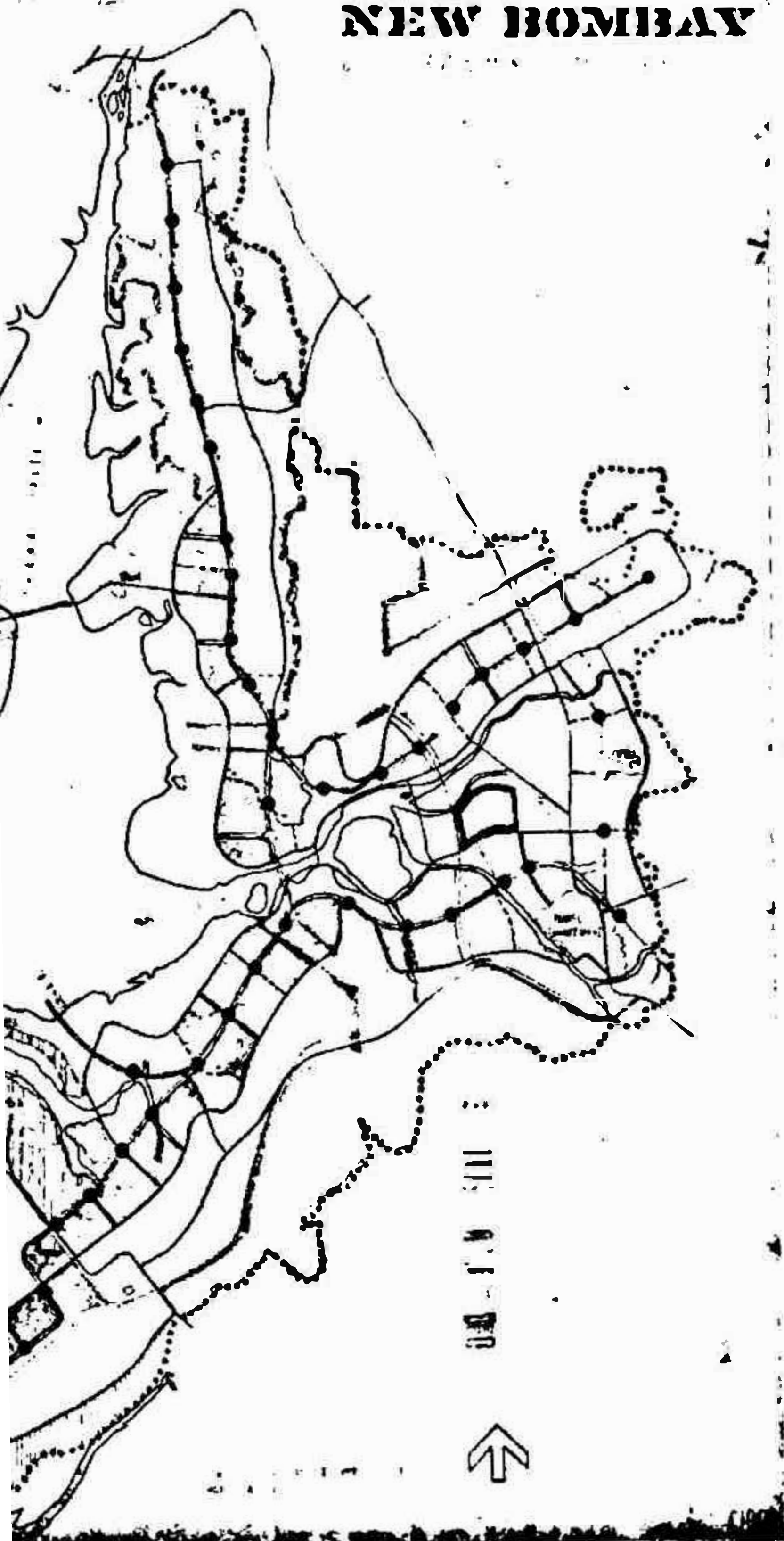




*Integrated Housing at Vashi,
New Bombay*
*Shopping centre and pedestrian
linkages*



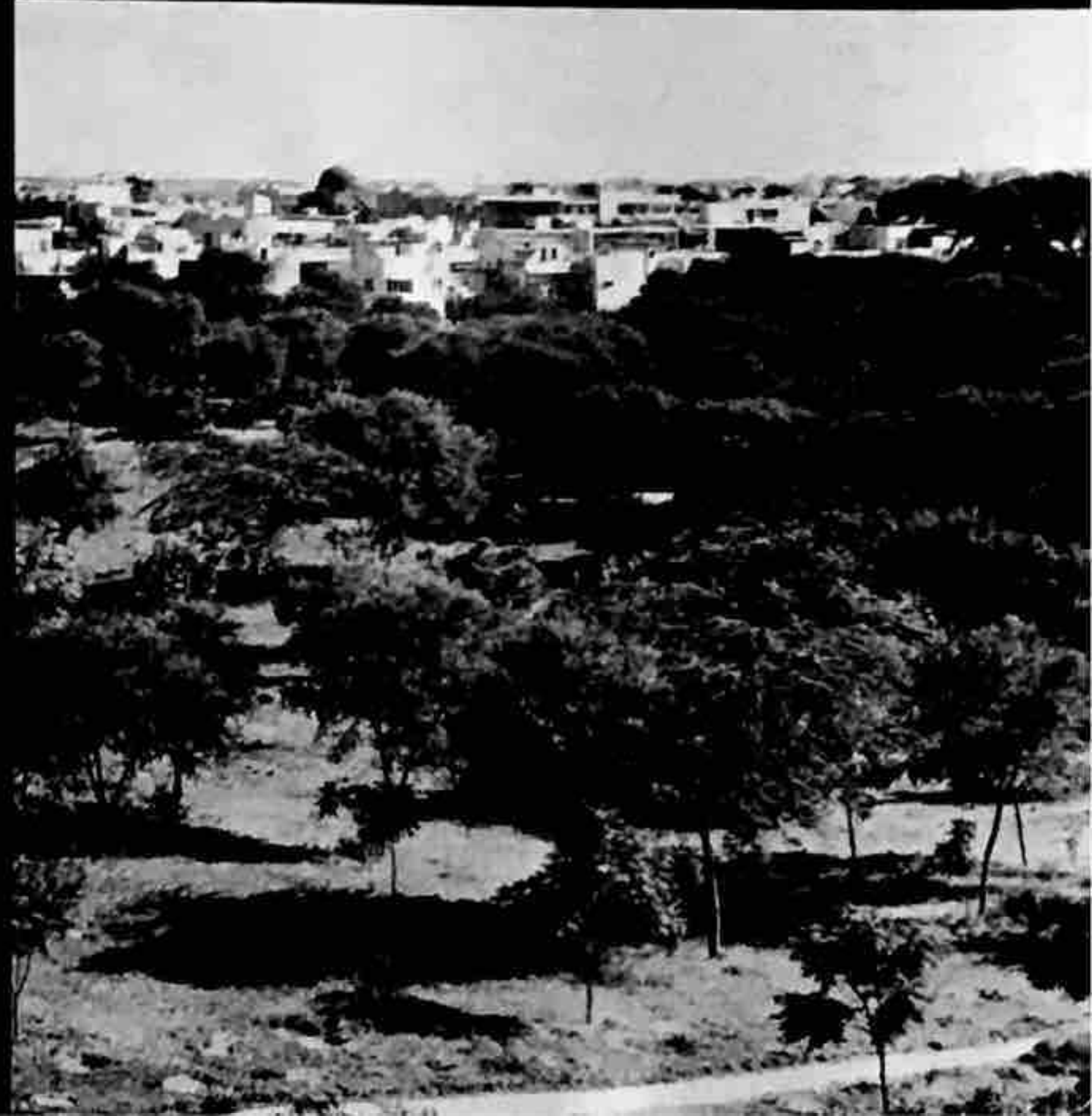
NEW BOMBAY



2.5.1 The Government of Maharashtra established the Bombay Metropolitan Regional Planning Board in 1967 to prepare a statutory regional plan for the future growth of the region. The Planning Board suggested the creation of a 'counter-magnet' across Bombay harbour to utilise the potential for industrial growth in the region. It is expected to attract the excess population which would have otherwise migrated to Bombay.

2.5.2 Bombay Metropolitan Regional Development Authority was set-up in June 1975 to direct balanced development programmes covering an area of 4,156 sq kms consisting of 20 urban centres and 1,174 villages. The counter-magnet, New Bombay, is expected to reach a population of 2 million in a period of fifteen to twenty years. It has been designed as a poly-centred development with a series of nodal concentrations strung along the mass transportation artery. Each node will provide for a judicious mix of residential, commercial, public and recreational land use.

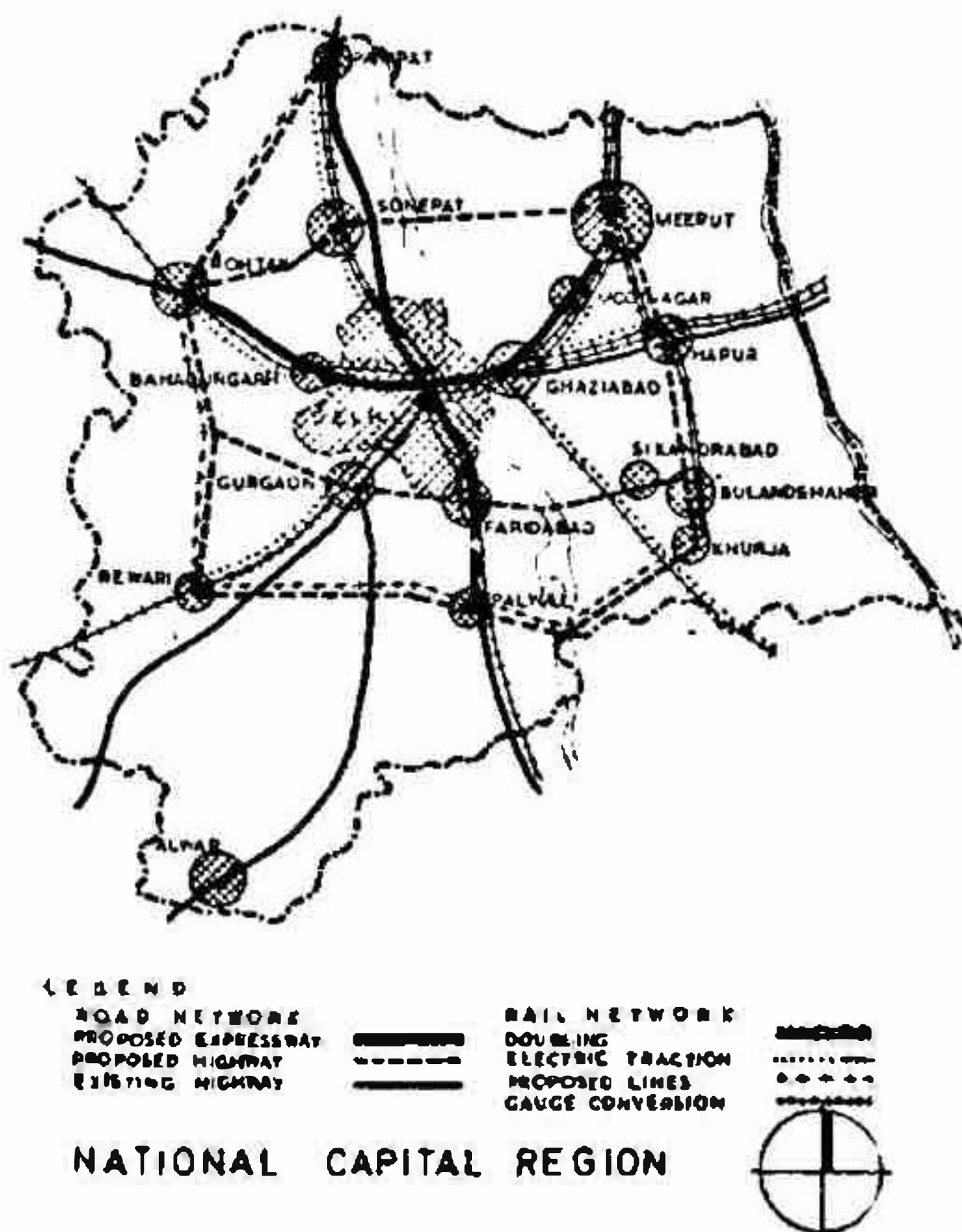
2.5.3 One such node is located at Vashi near the Thana Creek Bridge connecting up with Bombay near Chembur. The township will ultimately have a population of 100,000. A substantial part of the development work has been completed. Today, Vashi has a shopping centre, a full-fledged school, an eighty-bed medical centre, a community centre and houses for about 8,000 residents. Catering to all income groups, the residential accommodation ranges from sites and services plots to walk-up apartments and large bungalow plots. The pricing policy is based on a system of cross subsidies and incentives for the economically weaker sections to encourage self-help and 'incremental housing.'



2.5.4 The Delhi Development Authority was set up in 1957 under the Delhi Development Act to implement the twenty year Master Plan (1962-81). The programme included acquisition, development and disposal of land to provide for residential, industrial, commercial, institutional and recreational needs of the projected population of five million in 1981. It also stipulates planning laws and zoning regulations and brings all the operating agencies within its ambit. To implement the plan, a revolving fund of Rs. 123 million was created which has now grown to Rs. 1,100 million—i.e. nine times its initial provision. In the last fifteen years nearly 14,400 hectares of land has been acquired, 22 new residential settlements, 30 new industrial estates and scores of new commercial centres, institutional complexes, district parks and city forests have been developed.

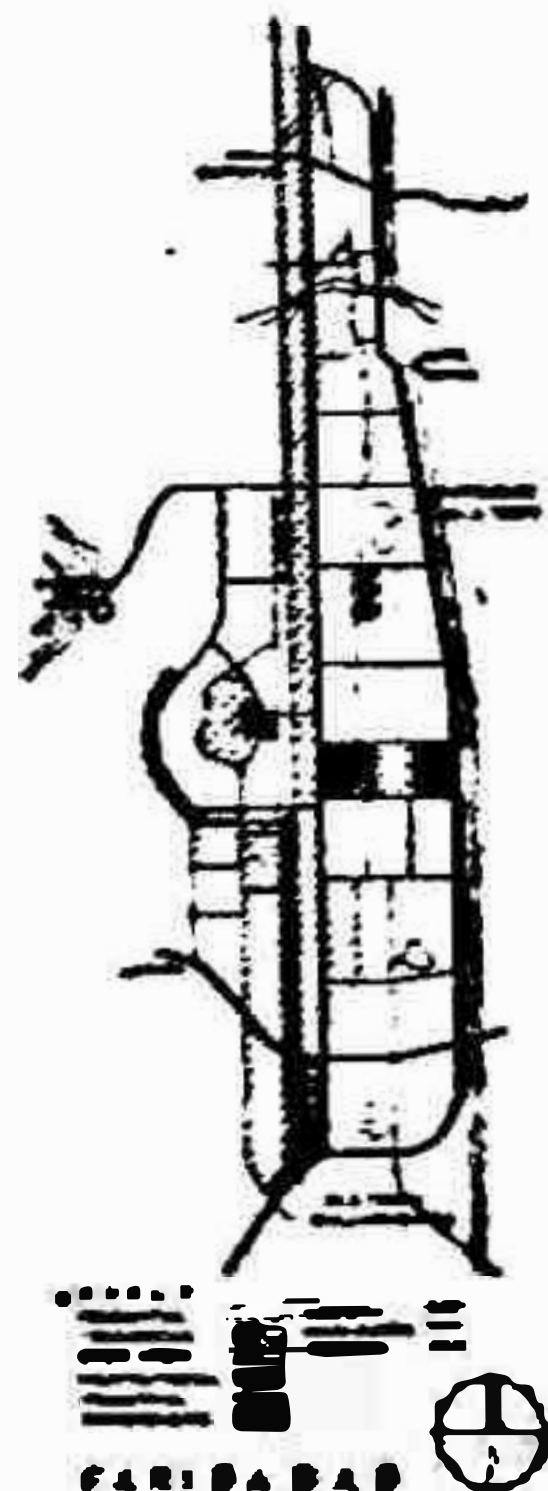
National Capital Region

2.5.5 The growth of Delhi in the sixties has been phenomenal and almost the entire area projected to be developed by 1981 has already been assigned to various purposes. The continued and rapid growth of the city has resulted in promoting parallel development of secondary urban settlements, such as Meerut, Faridabad, Sonapat etc. Such developments are expected to reduce the pressure on Delhi. While Delhi would continue to be the metropolitan centre of the region and the national capital, the development of second and third order towns within the region connected by rapid transportation network would lead to reducing the pressure on the main city and help distributing the economic activities over a large area. The "National Capital Regional Plan" has been approved by the Union Territory of Delhi and adjoining States.

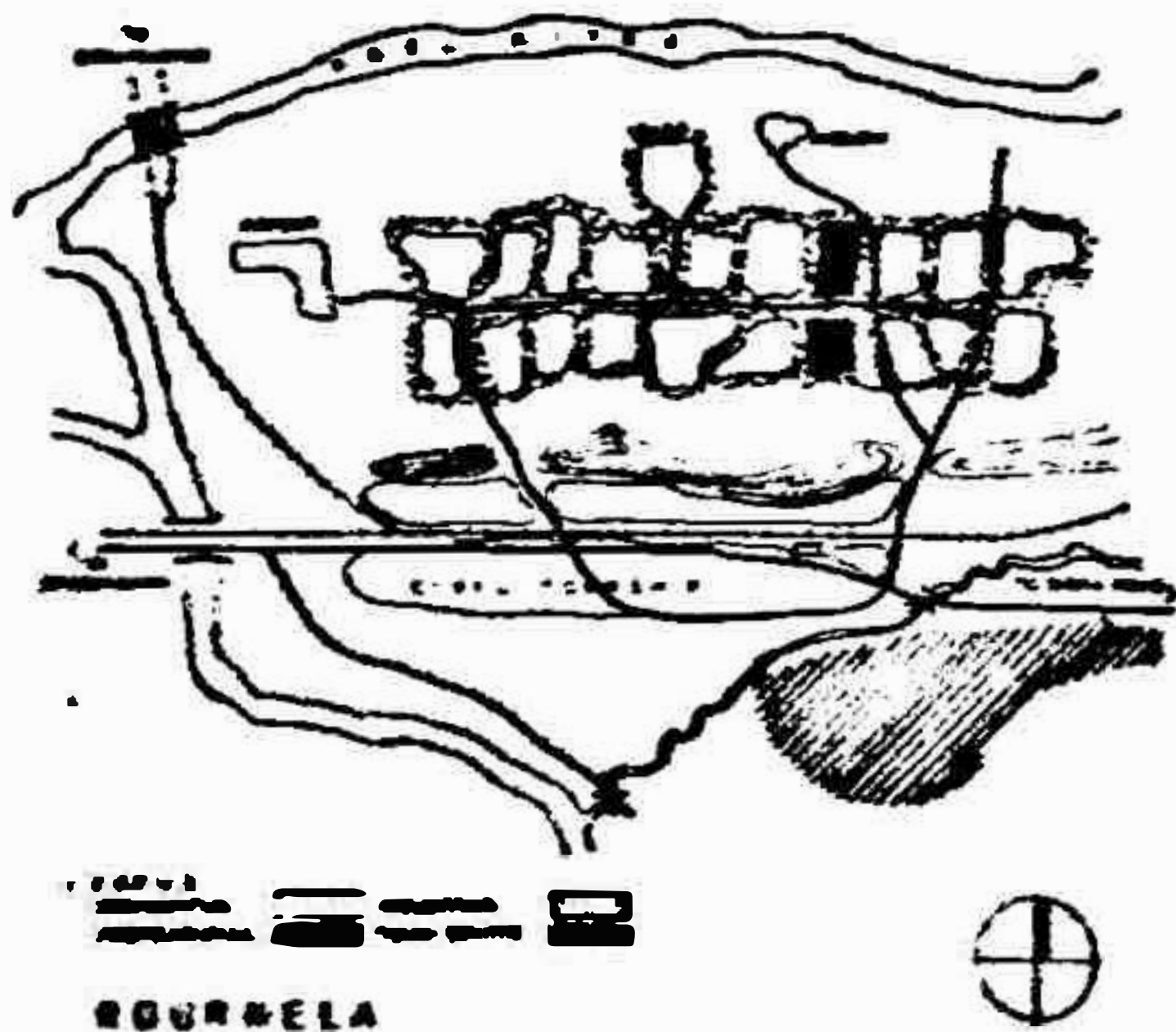


New Towns

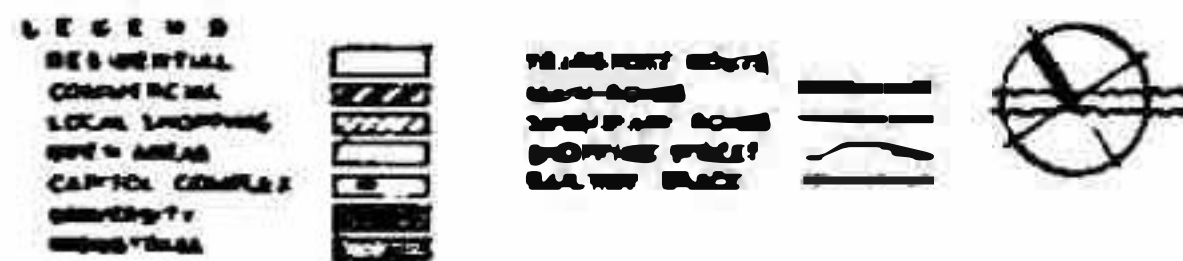
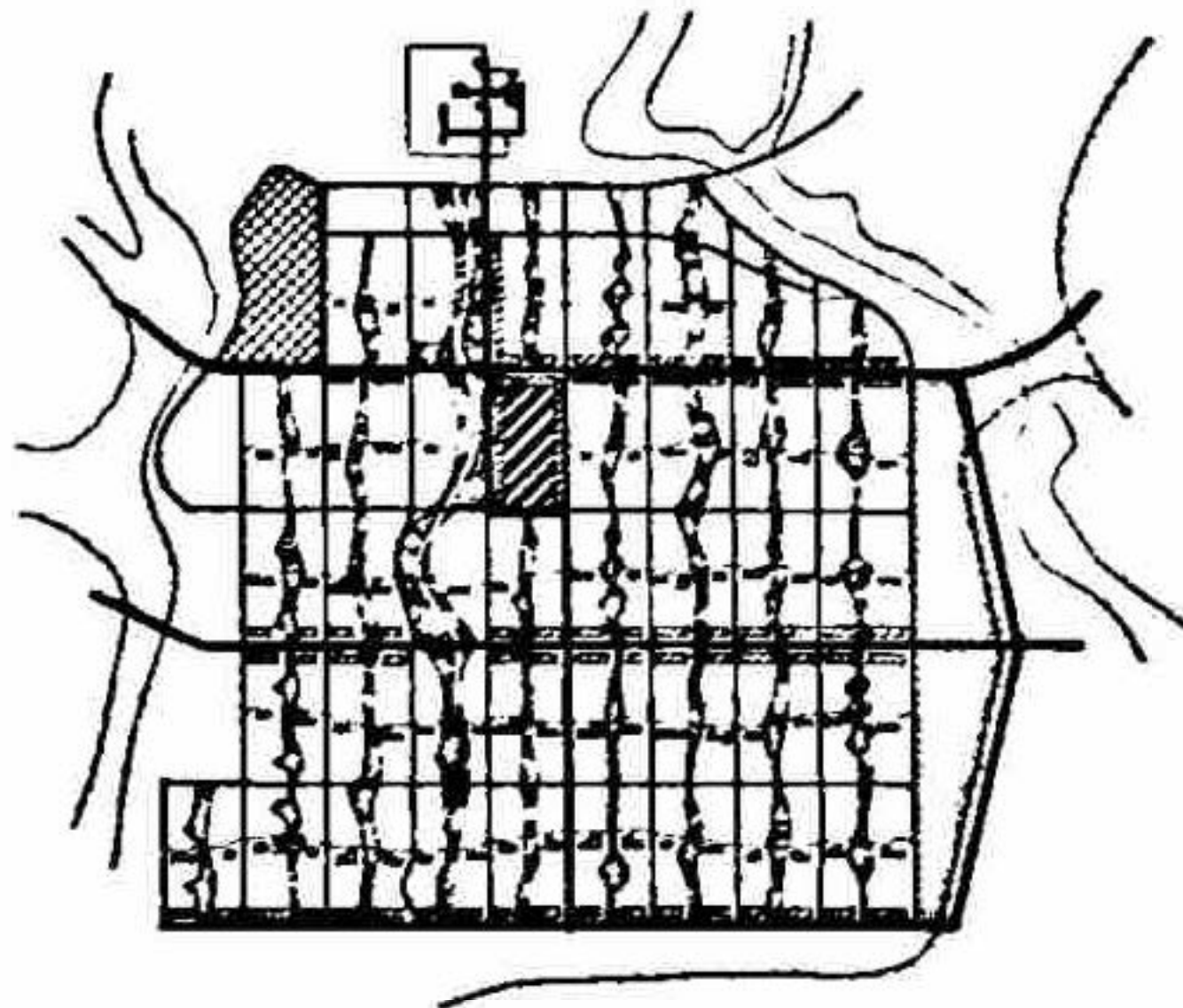
2.6.1 Since independence, over one hundred new towns have been built for (i) rehabilitation of refugees i.e. Faridabad, Nilokheri, etc. (ii) establishment of large scale industries like steel and fertilisers i.e. Bhilai, Rourkela, Durgapur, Sindri, Nangal etc. (iii) establishment of new State capitals like Chandigarh, Bhubaneswar, Gandhinagar etc. and (iv) port towns like Haldia, Kandla, Gandhi-Dham etc.



2.6.2 Faridabad near Delhi was developed as a self-contained town with industry, commerce, and other activities for rehabilitation of the refugees. Today, it has grown into a big industrial complex along the Delhi-Mathura-Agra trunk road. The town extends over 4,000 hectares and is now being planned for a population of 300,000 people.

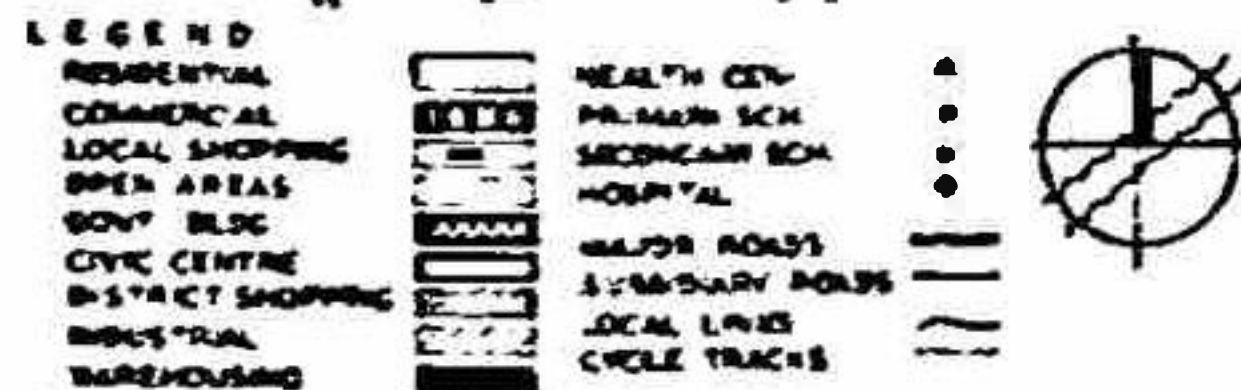


2.6.3 Rourkela, the steel town, lies on the main Bombay-Calcutta railway line. The industrial complex is located to the south of the railway line, while the town is on the north, separated by a range of hills which help in keeping away noise, dust and smoke arising from industrial activity.



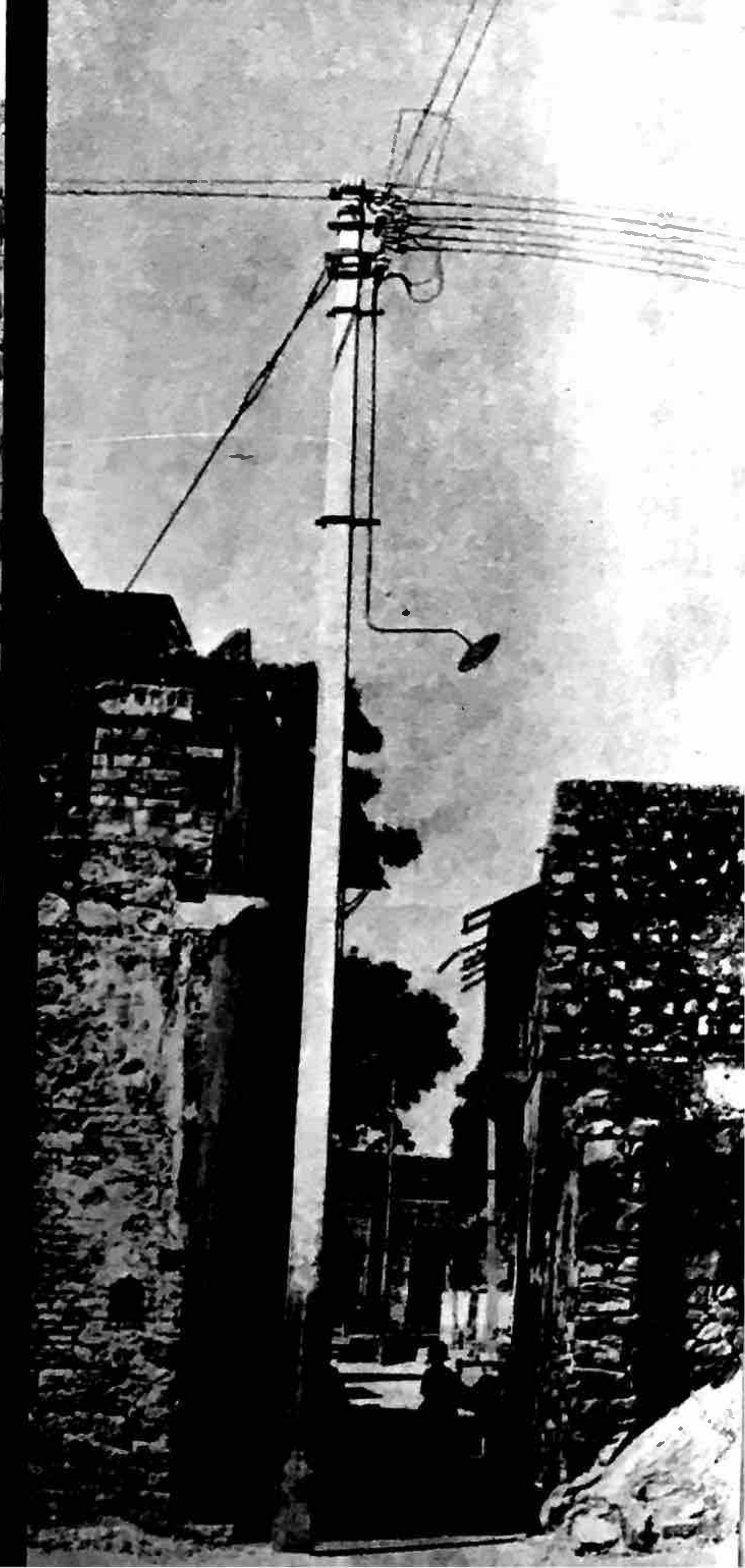
C H A N D I G A R H

2.6.4 Chandigarh, the capital of the post-Independence State of Punjab, is located on the gently sloping terrain of the Himalayan foot-hills. It is based on a seven-level hierarchal road network, designed for various speeds of traffic ranging from high speed automobiles to cycle tracks and footpaths. The city has been planned for a population of 500,000. The residential area is divided into a number of sectors—each one having its own schools, shops, playgrounds, open spaces and entertainment facilities along the green arteries across the centre. The industrial area is located on the south. Chandigarh is today attracting a number of industries which were not planned for the city.



G A N D H I N A G A R

2.6.5 Gandhinagar, the new capital of the State of Gujarat, is located nearly 30 kms from Ahmedabad. Although similar to Chandigarh in many respects, Gandhinagar has a different system of residential sectors. The high density government housing is located in the centre of each sector. The private housing is on the periphery. Recreation, entertainment, commercial, cultural and educational facilities are located along the green strips across each sector. A linear city centre extends on the north west instead of a centralised business district as in Chandigarh. The 'capital complex' is located on the south east along the river Sabarmati. Industries are located on the north east with parkland in-between.



Changing Pattern of Human Settlements

"My idea of Village Swaraj is that it is a complete republic, independent of its neighbours for its own vital wants, and yet interdependent for many others in which dependence is necessity. Thus every village's first concern will be to grow its own food crops and cotton for its cloth. It should have a reserve for its cattle, recreation and playground for adults and children. Then if there is more land available, it will grow useful money crops. The village will maintain theatre, school and public hall. It will have its own waterworks ensuring clean water supply. Education will be compulsory upto the final basic course. As far as possible, every activity will be conducted on the co-operative basis. . . .

The Government of the village will be conducted by the Panchayat of five persons annually elected by the adult villagers, males and females, possessing minimum prescribed qualifications. This Panchayat will be the legislature, judiciary and executive combined to operate for its year of office. Here, there is perfect democracy based upon individual freedom".

MAHATMA GANDHI

2.7.1 As a result of various programmes initiated by the Government a new type of settlement pattern is emerging in which a group of villages rather than an individual village, functions as a unit of social and economic life. At the centre of such a group may be a big village or a market centre or town, in which social and cultural services and facilities for marketing, transport, etc., are concentrated. The surrounding villages function mainly as agricultural settlements. This is typical of the sugar belt of Maharashtra, the coastal region of Andhra Pradesh, parts of Tamil Nadu, western and south eastern districts of Kerala, Sholapur region, parts of Rajasthan, almost the whole of Punjab and Gujarat, south-eastern Madhya Pradesh, central and southern Bihar and western Uttar Pradesh.

2.7.2 It is not uncommon today to see in an Indian village the use of electricity for both pumping of water for irrigation and for lighting, the use of septic tank, the smokeless "chulah" (hearth) or even the use of a bio-gas plant for generation of cooking fuel, well paved streets and well lined water reservoirs. There is increasing acceptance of the use of mechanised agricultural implements, of fertilizers, of high yielding varieties of seeds and improved irrigation systems. The villager is sending his children to school, making use of health centres and adopting family planning techniques. The transistor radio dangling from the shoulder of a youth or a bicycle taking him to the nearby town or city is changing the rural scene.

2.7.3 In certain parts of the country, educated youth are providing needed local leadership. At times

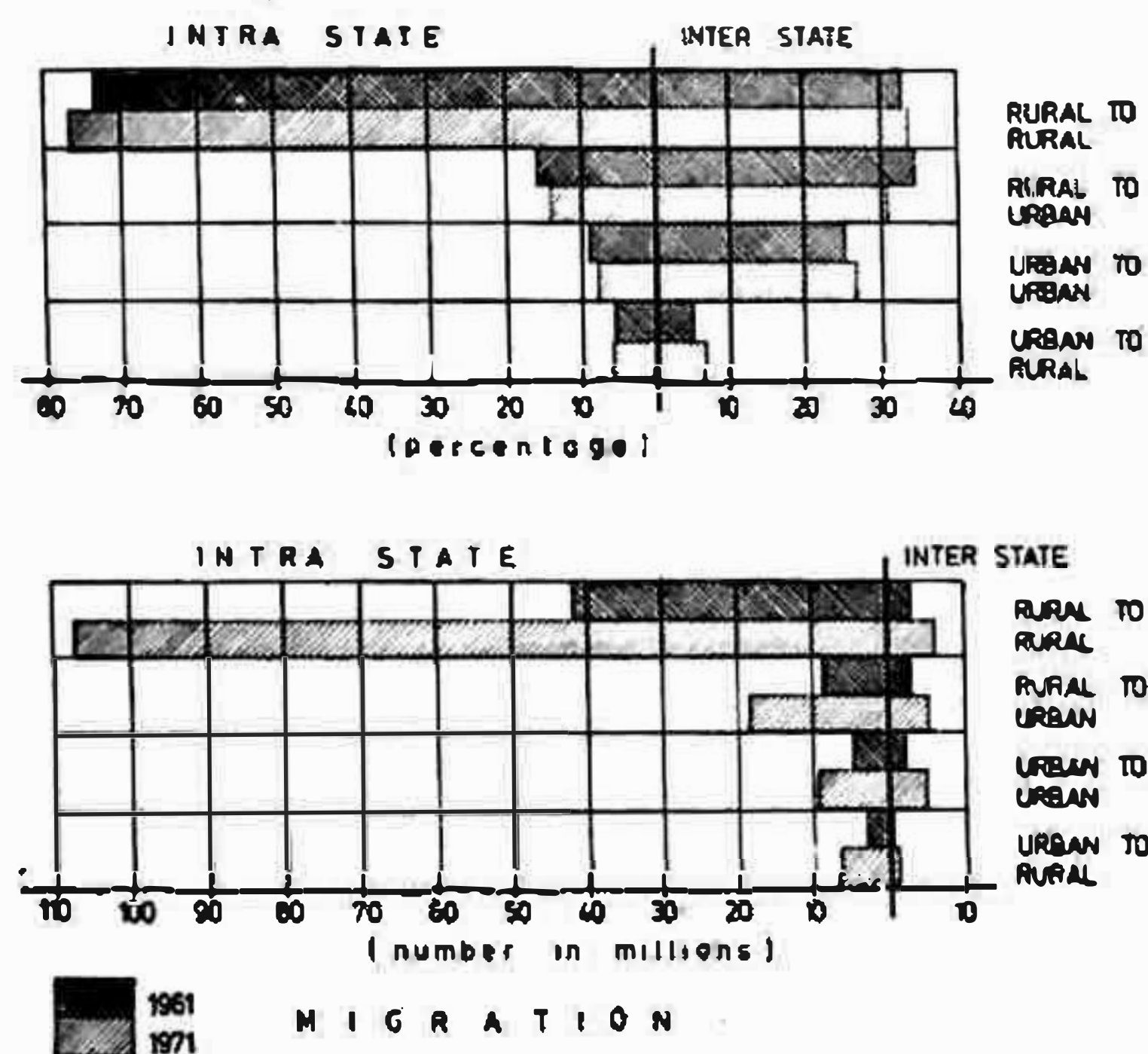
the perception of rural problems is more realistic when these leaders come from villages. Highly qualified engineers and technologists in various parts of Gujarat, Punjab, Haryana, Madhya Pradesh, Andhra Pradesh and Maharashtra are helping the villager in his everyday problems, convincing him of the relevance of new and improvised techniques. Their effort is voluntary and provides a valuable input to planning at various levels. There are about 130 voluntary organisations involved in rural development.



2.7.4. Auroville, the city of dawn, is an experimental city, where young intellectuals are living in a progressive technological environment. The community is working to utilise solar energy for growing of vegetables and for air conditioning, utilising waste products to produce new building materials, re-cycling used water, and developing new techniques of building construction. It aims at imparting spiritual values alongwith advanced scientific outlook and technological innovations. Young men and women from many parts of the world—from U.S., Canada, European countries, Japan, Indonesia and India are working together to realise Aurobindo's ideals giving shape to the city that "belongs to no one in particular, but to humanity as a whole."

2.7.5. The growth of metropolitan and large cities at times causes another type of impact on the surrounding villages. Some villages come within the jurisdiction of the metropolis. Such communities known as "Urban villages" suffer from lack of physical infrastructure, attracting large number of service personnel looking for cheaper accommodation. In the process, fertile lands are acquired, orchards get

Rural-Urban Migration



destroyed and trees and vegetation are lost without adequate replacement.

2.8.1 As a result of increase in population, improved communication and education, seasonal unemployment and decreasing man-land ratio, a significant amount of rural population moved out of the villages to towns and cities in search of better job opportunities. Industrial activity and large scale construction work attracts semi-skilled and unskilled labour from rural areas.

2.8.2 During 1961-71 intra-state movements were largely from rural to rural areas, the migration into urban areas being only 24 per cent of the total. Inter-state migration, which accounted for 14 per cent of the total migration, was almost equally shared by rural to rural, rural to urban and urban to urban settlements. The net migration from rural to urban areas during the past decade was nearly 12 million people. The process of migration, at times, depletes rural areas of young working hands, skilled labour and able leadership.

2.8.3 According to surveys conducted by Planning Commission, if the period of residence required is taken as twenty years, nearly half the population of cities with over one million population are migrants, whereas in cities with less than 300,000 population it, varies from 30 to 40 per cent.

Squatter-Settlement and Slums

2.9.1 The process of migration in large numbers to urban areas has created problems of accommodation, utilities and services of a magnitude that existing cities cannot meet. Migrants occupied whatever land that was available and constructed huts and shacks from material that they could afford. Thatch, mud, bricks, tin, wood, hessian and canvas were assembled to

***Distribution of population into various human settlements**

Size of Settlements	1961		1971	
	Number of settlements	Population (in millions)	Number of settlements	Population (in millions)
One million and above	7	14.23	8	20.77
Between 100,000 — 999,999	100	20.89	143	32.61
50,000 — 99,999	139	9.53	219	14.71
20,000 — 49,999	518	15.75	652	19.95
10,000 — 19,999	820	11.30	987	13.96
Below 10,000 —	1,116	7.23	1,110	7.09
Total	2,700	78.93	3,119	109.09
URBAN				
10,000 and above	776	12.29	1,358	22.33
Between 5,000 — 9,999	3,421	22.34	4,974	32.72
1,000 — 4,999	91,948	166.26	117,978	217.71
500 — 999	119,167	83.92	132,990	94.41
below 500 —	352,023	75.48	318,633	71.87
Total	567,335	360.29	575,933	439.04
RURAL				

****Percentage of urban population in various classes of towns—1921-1971**

Size Class	1921	1931	1941	1951	1961	1971
100,000 & above	28.89	29.99	36.83	43.38	50.23	55.83
50,000 — 99,999	10.22	11.16	11.80	10.40	11.09	11.32
20,000 — 49,999	16.42	17.80	15.63	15.95	17.51	16.32
10,000 — 19,999	18.21	18.25	16.12	13.99	12.99	11.31
Below — 10,000	26.26	23.80	18.62	16.28	8.18	5.22

The definition of urban settlements as given in Indian Census is—

- (a) "All places with a Municipality, Corporation, or Cantonment or Notified town area,
 (b) All other places which satisfy the following criteria—i) A minimum population of 5,000; (i) at least 75 % of male working population is non-agricultural, (ii) a density of population of at least 400 per sq km (i.e. 1000 per square mile.)

*SOURCE: Office of the Registrar General of India—General Population Table part II-A(i).

36 **SOURCE: Pt IIA(i) General Population Tables Census of India 1971 (excluding Sikkim)



Slum-Improvement Programmes

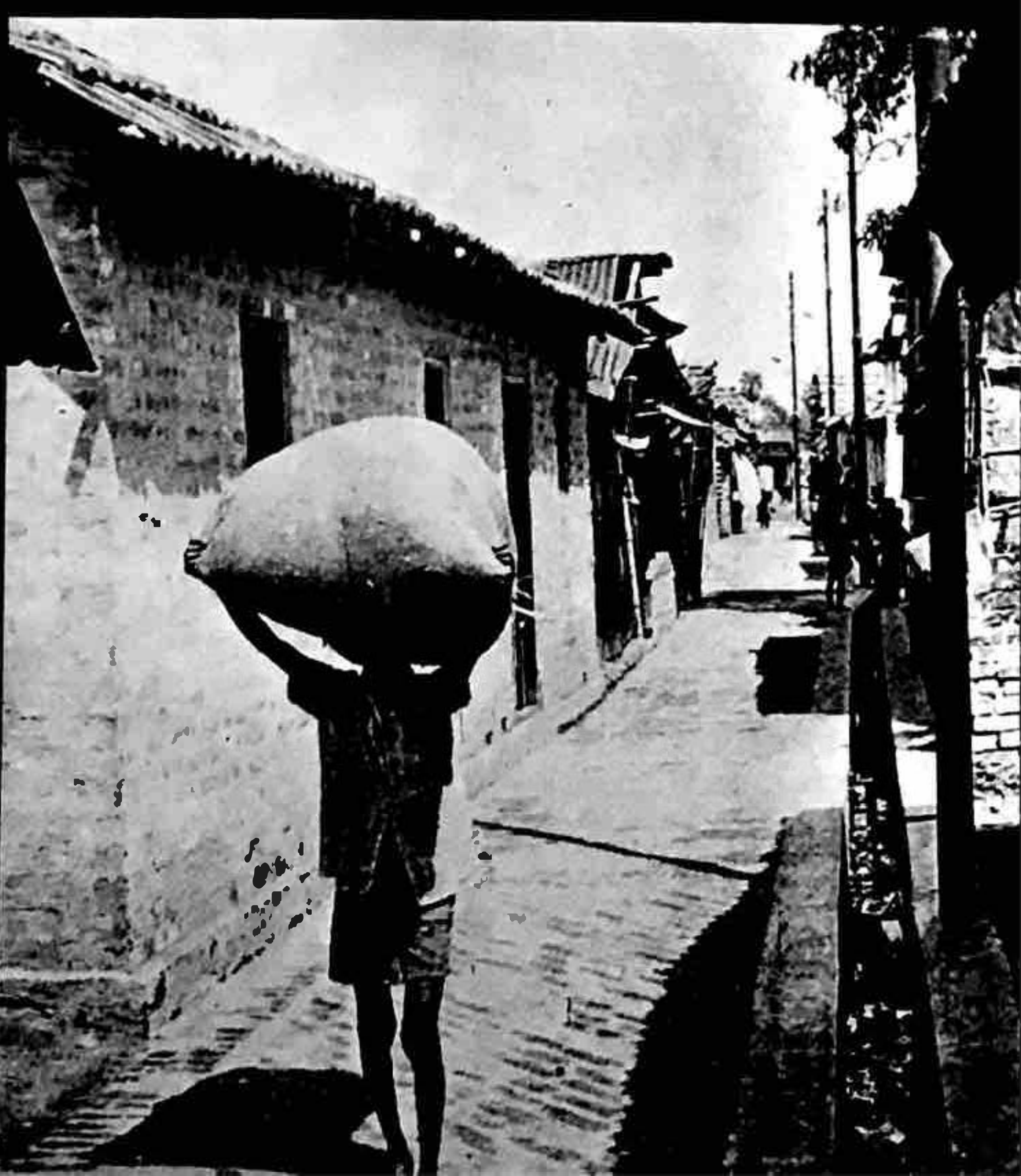
Settlement of construction workers

provide shelter. There was no water or sewerage system, nor were there drainage facilities or paved streets. The huts multiplied and grew into a cluster and the clusters grew into squatter settlements. The older parts of the city became more congested and the rate of growth of slums increased. It is estimated that today nearly 25 to 30 per cent of the population in cities live in slum or squatter settlements.

2.9.2 In new towns, limited capital investments did not allow for providing facilities or accommodation to service personnel. The emphasis had to be for investments on the major project and for providing facilities like housing, schools and health care-centres to its workers. People attracted by employment opportunities in construction work, convenience shops, repair workshops, domestic help and other ancillary activities converged to the new town. As such many such towns started receiving squatters even before they started functioning.

2.9.3 A study of squatter settlements in Delhi revealed that more than half a million people were living in over 1,300 clusters. In 1951, Delhi had one squatter household to 20 non-squatter households. In 1973, the proportion increased to one squatter household for every five non-squatter households. The squatter population is growing at an annual rate of 12 per cent in comparison to the population growth rate of 4.5 per cent.

2.10.1 Various Slum Clearance and Improvement Schemes have been operating since 1956 under the Plan Programme for Social Housing. These schemes aim at minimum dislocation of slum-dwellers and rehousing them near the existing sites, provision of minimum

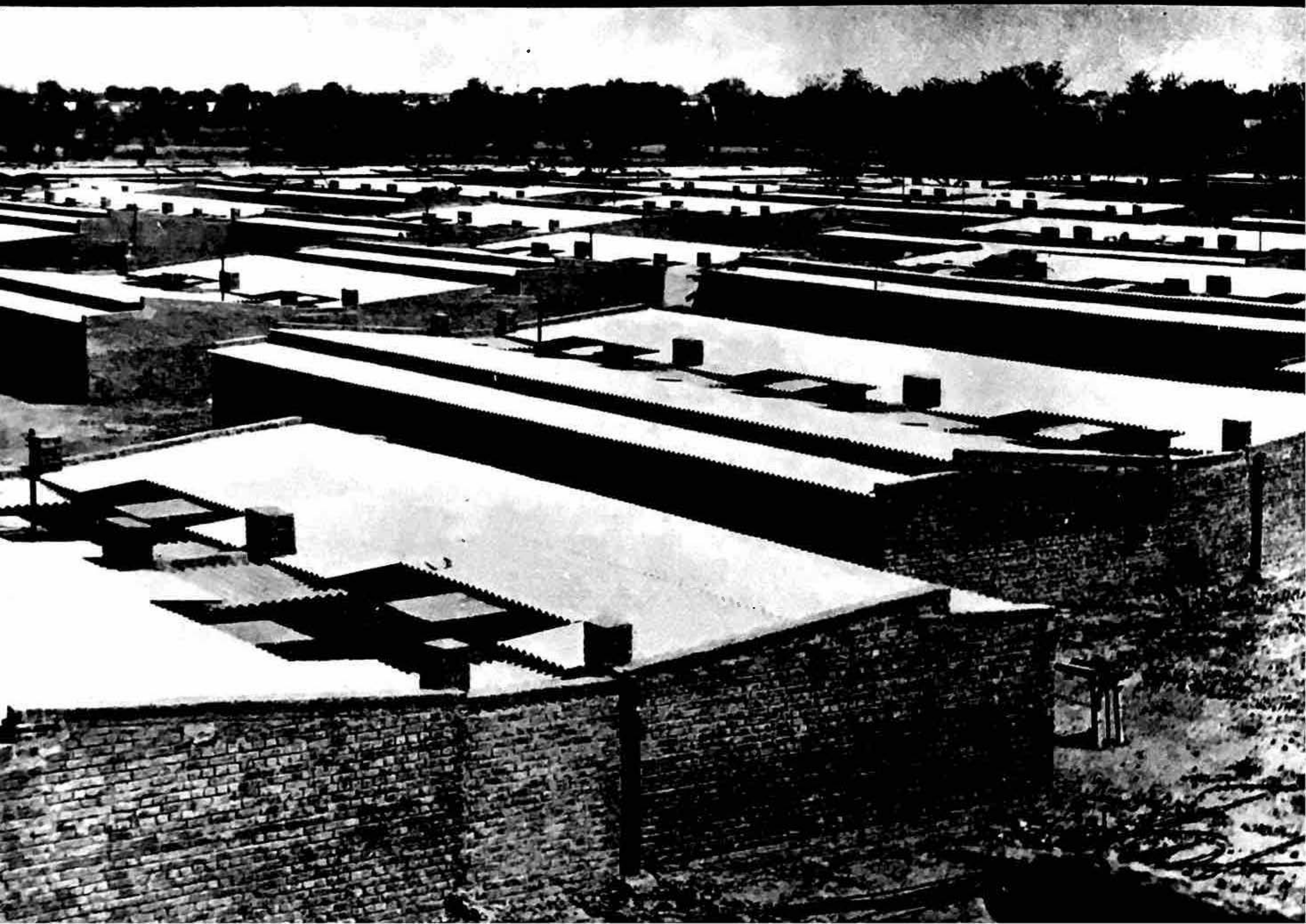


standards of environmental hygiene and essential services. The Slum Area (Clearance and Improvement) Act, 1956, was enforced in Delhi in 1957, through the Municipal Corporation of Delhi. Since 1966, the programme is being implemented by the Delhi Development Authority. Nearly 50,000 squatter families have been resettled and 130 squatter settlements have been improved.

2.10.2 In Bombay, action for improvement of slums was initiated in 1969 by the Bombay Municipal Corporation. Under the Maharashtra Slum Area (Improvement, Clearance and Redevelopment) Act, 1971, the work of improvement was entrusted to the Housing Board and the Bombay Municipal Corporation. These authorities have carried out improvements by providing water taps, street paving and lighting, latrines etc.

2.10.3 For Calcutta, the Government of India provided massive financial assistance for the "Bustee" Improvement Scheme to the newly established Calcutta Metropolitan Development Authority (CMDA) in 1970. CMDA commenced work on 100 different projects during 1971. Initially the projects were farmed out to a number of State government engineering units and agencies. In 1973, CMDA started executing most of its projects through its four broad sectoral wings—water supply, sewerage and drainage; traffic and transportation; and Bustee Improvement and Area Development. Until the end of 1973-74 fiscal year, CMDA had utilised nearly Rs. 1200 million in arresting further decay of the city and in providing infrastructure for future growth.

2.10.4 The Tamil Nadu Slum Clearance Board established in Madras in 1970 provided protection to the slum-dwellers from eviction and provided alternate temporary accommodation till new tenements could be



constructed. The Board made a survey, identified the slum-dwellers and issued identity cards with photographs of each family and provided tenements in the same area within a period of nine months. The economic rent of each unit (nearly 20 sq metres) is Rs. 44 per month out of which the occupant has to pay only Rs. 15, the rest being subsidised by the State Government. The total subsidy borne by the Tamil Nadu State Government was of the order of Rs. 40 million per year.

2.10.5 However, the present approach has given rise to a number of problems. New squatter colonies are not integrated with the rest of the metropolitan city. It is being felt that emphasis should be given on the provision of adequate infrastructure, community facilities etc., which have social relevance and do not dislocate the people from their occupation and place of work. Some of the authorities are considering the location of future squatter population on selected areas in a planned manner.

2.10.6 'Vaasna' in Ahmedabad, Gujarat, is a squatter rehabilitation-cum-community development project. It has provided homes to 2,250 families who had been traditionally squatting on the banks of the Sabarmati river and were rendered homeless during the floods. In addition to the construction of houses, the following programmes have been started to motivate and educate the people to become self-sufficient.

- (a) Social Programmes: Identification of leaders, enrolment of children in schools, medical check up and health services, training in leadership and formation of cooperatives, family planning programmes, education etc.

Land-use Structure of Urban Settlements

PERCENTAGE OF DEVELOPED AREA TO
TOTAL AREA OF TOWNS AND CITIES

City Size	Average Area (hectares)	Per cent developed area to total area
1 million & above	11,692	74.0
500,000 — 999,999	10,271	53.9
200,000 — 499,999	3,964	69.0
100,000 — 199,999	2,811	56.9
50,000 — 99,999	1,372	50.0
20,000 — 49,999	847	50.4
Less than 20,000	853	23.5

SOURCE: Govt. of India, TCPO, Land-use Pattern in Indian Cities & Towns, 1966 (mimeo.)

- (b) Income supplementation programme:
Organisation of savings, crochet training and production centre, “ambar charkha” (cotton spinning), training in carpentry, applique work, allotment of shops to the settlers, loan assistance for small entrepreneurs, loan assistance for the purchase of bicycles etc.

2.11.1 A majority of the rural settlements in India have grown on their own and many of them have become small towns today. The land use pattern in urban settlements has become largely irrational, with land being distributed unevenly between various uses. Even those urban settlements which were meticulously planned have subsequently grown without adequate comprehensive planning.

2.11.2 A survey conducted by the Town & Country Planning Organisation on land-use pattern of India's cities and towns reveals that nearly 47 per cent of the developed land is under residential use, 13 per cent under roads and streets, 12 per cent under public and semi-public use, six per cent under industries and nearly four per cent under commerce. Only four per cent of the developed land consists of parks and play grounds.

2.11.3 Rural and urban settlements are experiencing the impact of economic and social development. Although, housing stock is being supplemented and improved, transportation is being expanded and organised, better water supply, sanitation and electrification is being provided, the achievements, though remarkable, are not keeping pace with the ever growing requirements of the population.

Some components
of
environmental
quality in
human
settlements

Type of services		Rural (Percentage of population)	Urban (percentage of population)	
*1. Water Supply (March 1974)	(i) Protected	4.3%	83%	
*2. Sewerage (March, 1974)	(i) Water borne	Negligible	38%	
*3. Drainage	Complete or partially covered	Negligible	36%	
*4. Electricity (March, 1974)		40%	86%	
*5. Housing (March, 1971)	(i) Type of houses			
	(a) Pucca (durable)	18.9%	63.8%	In metropolitan cities nearly 25-35% population lives in slums and in squatter settlements.
	(b) Semi-pucca (Semi-durable)	37.6%	23.5%	
	(c) Kachcha (non-durable)	43.5%	12.7%	
	(ii) Over-crowding (population percentage)			
		<i>Occupancy rate</i>		<i>Occupancy rate</i>
	(a) one room	39.6%	4.7 persons	41.7% 4.6 persons per room
	(b) two room	28.8%	2.8 persons per room	28.1% 2.9 persons per room
	(c) three room	14.2%	2.2 persons per room	13.6% 2.2 persons per room
				<i>Cities with over one million population</i>
			36.2%	4.9 persons per room
			23.0%	2.9 persons per room
			10.0%	2.2 persons per room

(Continued)

Type of services	Rural	Urban
6. Transportation	<p>Indian transport system largely consists of railway and road transport. Railway transport is common to both rural as well as urban settlements but in metropolitan cities like Calcutta, Bombay, Delhi, Madras etc. it is also used for intra-urban and suburban traffic.</p> <p>Considering the size of rural population and the dispersed villages, the network of roads and other transportation media for linking the villages to the service and marketing centres is inadequate. In majority of cases the type of roads connecting the villages with the nearest centre for transport, communication, education or health centres are foot paths and unsurfaced roads.</p>	
7. Other characteristics affecting environment.	<ul style="list-style-type: none">a) Fragmented land holdings, inadequate administrative mechanism and fiscal institutions etc.b) Chronic unemployment, underemployment and seasonal employment forcing migration to urban areas.c) Lack of afforestation, flood control measures etc. resulting in soil erosion and subsequent productivity loss.	<ul style="list-style-type: none">a) Unorganised spot developments and extensive derelict land.b) Urban blight, dilapidated buildings in older parts of the city.c) Obsolescence of building bye-laws planning regulations, norms and standards.d) Disappearing landscape features and urban development spreading over extensive areas because of low density patterns.

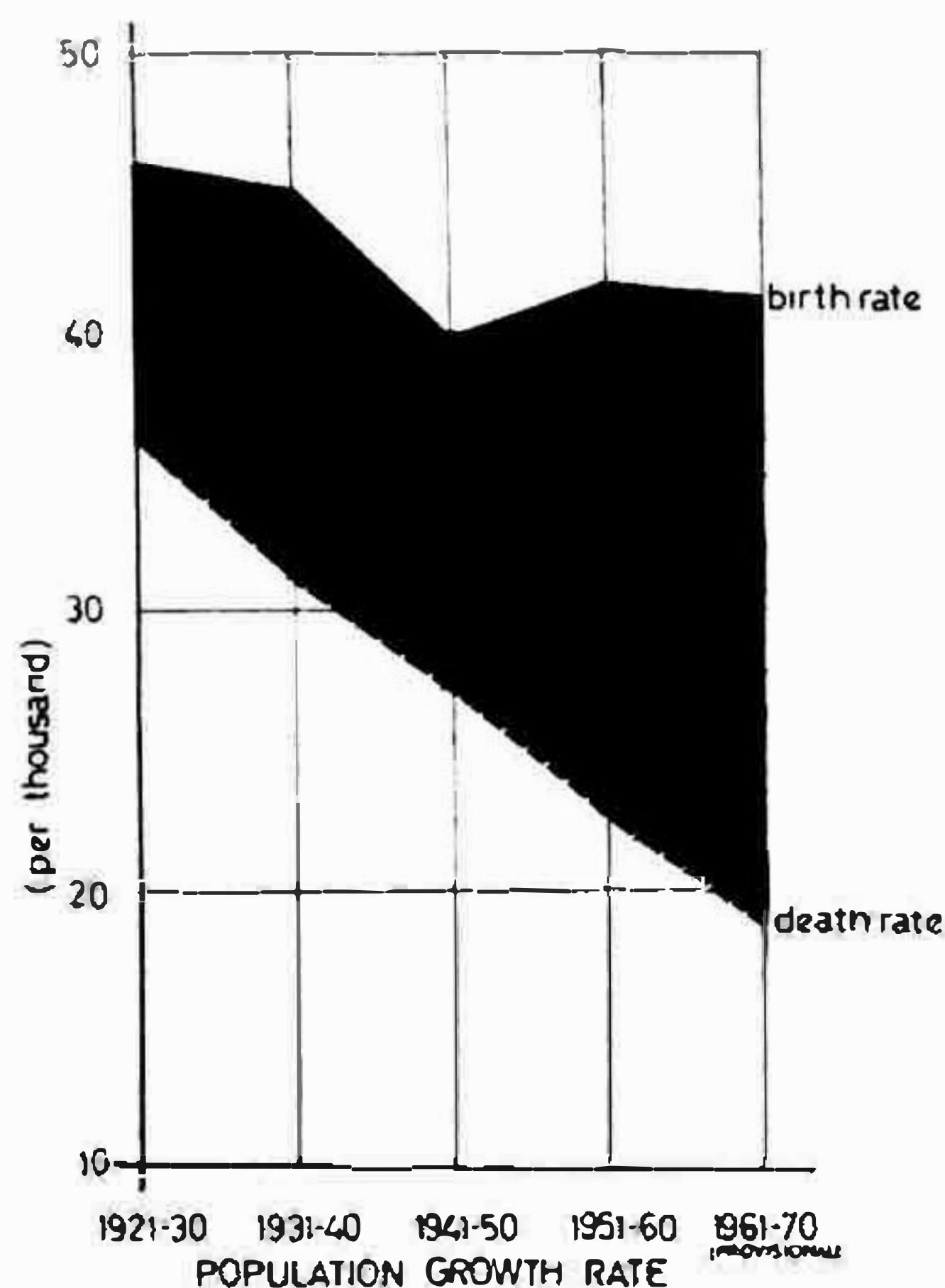
*SOURCE—National Buildings Organization, Ministry of Works, Housing & Urban Development, Government of India—1975.

“The failure of a number of areas to have their due share in the development process owes itself to a combination of factors. In several cases, relative stagnation is attributable to historical reasons. Under colonial rule, the areas which were unimportant from the point of view of British commercial and political interests received less attention compared to others. The areas under the Indian princes and those under the zamindari system in one form or the other had often more unfavourable conditions for development initiatives, stimulation of entrepreneurial abilities and capital formation. Some of the areas have unfavourable land-man ratio. The deficiency is compounded when a poor endowment in respect of other natural resources makes it difficult to develop diversified economic activities. Poor infra-structure and the resulting absence of external economies are an important casual factor for backwardness. The problem being many-sided and varied, it does not admit of a fragmentary or schematic approach. It requires an appropriate package of development policies and measures suited to the specific conditions.”

*“Approach to Fifth Plan—1974-79”
Planning Commission.*

national policies
and programmes
relating to
human settlements

Family Planning Programme



Based on India 1975, Min. of Information & Broadcasting

3.1.1 The population of India has grown from nearly 250 million in 1921 to 548 million in 1971.

The rate of population growth was fluctuating and slow until 1921 as both the birth and death rates were high. In 1911-21 the birth rate was 48 and the death rate was 47 per thousand.

During the next four decades, mortality rate declined steadily to 22.8 in 1951-61 and 16.9 per thousand population in 1972. The birth rate also declined during these years but at a much slower rate—from 41.7 in 1961 to 36.6 per thousand in 1972 (according to Sample Registration Scheme, SRS).

The population growth rate which was moderate during 1921-51, ranging from 11.0 per cent to 14.2 per cent per decade, recorded a phenomenal increase during 1951-71. India's population grew 21.6 per cent during 1951-61 and 24.8 per cent during 1961-71. The annual geometric growth rate recorded for 1961-71 was 2.2 per cent. This increase was largely due to decline in mortality rate. The available evidence, suggests that the death rates may decline further and this may accelerate the population growth in future years unless birth control measures are adopted by a large population more seriously.

3.1.2 The Five Year Plans aim at reducing the birth rate from 39 per thousand in 1969 to 30 in 1979 and 25 by 1984 alongwith improvement in the health conditions of the people. During the annual Plan (1968-69), Family Planning Programme was described as the "kingpin" in the process of development. In the Fourth Plan, the programme was accorded "highest priority". The approach during the Fifth Plan is to integrate family planning services with general health, nutrition, maternal and child care.

CUMULATIVE ACHIEVEMENTS OF FAMILY PLANNING PROGRAMMES

(Upto March, 1975)		(in million)
1.	Sterilisation operations	16.25
2.	IUD Insertions	5.44
3.	Conventional Contraceptions used.	2.43
4.	Birth averted by various measures.	26.60
5.	Percentage of eligible couples aware of family planning.	70-80 %
6.	Eligible couples currently protected.	16%

SOURCE: Department of Family Planning, Ministry of Health and Family Planning.

Economic Policy

Poverty level has been defined in terms of a minimum level of consumption. In the Fifth Plan it has been defined as the personal consumption of Rs. 40.60 per capita per month based on 1972-73 prices.

National Programme of Minimum Needs

3.1.3 Family Planning in India is voluntary in character. It is for the people to decide when and how one should take to any of the methods of contraception. The Medical Termination of Pregnancy Act came into force from April 1, 1972. It provides for termination of certain pregnancies by registered medical practitioners in well-equipped institutions.

3.2.1 While laying emphasis on 'self-reliance', the government realises that the country has a very large number of people living below the 'poverty line'. Although economic development during the two decades (1951-71) has resulted in a sizable increase in average per capita income, a large number of people still remain poor. Elimination of poverty requires that a large number of persons living below the poverty level must be enabled to have access to the minimum personal consumption. The government realises that the composition of growth should favour the rural and urban poor. The pattern of production needs to lay emphasis on food and other articles of mass consumption.

3.2.2 It is in this context that the National Programme of Minimum Needs was designed with accent on uplift of backward classes, development of backward regions. It envisages a public procurement and distribution system to ensure availability of essential goods to the poorer sections of the population at reasonable prices. The programme aims at:—

- (i) Providing elementary education for children upto the age of 14 at the nearest possible place to their homes;

Social Services—1951-74

EDUCATION		1950-51	1960-61	1971	1974
1. Literacy Rate		16.7	24.0	29.5	38.8 (for ages 5-59 years)
2. Number of pupils studying at Primary School level (millions)		19.15	35.0	61.43	
3. Percentage thereof to total population in age group 6-11.		42.6	62.4	81.9	
4. Number of pupils studying at Middle School level (millions)		3.12	6.70	14.08	
5. Percentage thereof to total population in age group 11-14		12.7	22.5	35.3	
6. Number of pupils studying at High School/Pre-University level (millions)		1.22	2.89	7.08	
7. Percentage thereof to total population in age group 14-17.		5.3	10.6	20.8	
8. Number of pupils studying at the University Level—arts, science and commerce (millions)		0.36	0.89	2.93	
9. Percentage thereof to total population in age group 17-23.		0.8	1.8	4.0	
10. Percentage at pupils studying science at University level.		37.8	26.9	43.8	
HEALTH		1941-50	1951-60	1961-70	1974
Expectation of Life at Birth	—Male	32.45	41.90	47.10	
	—Female	31.66	40.60	45.60	
Primary Health Centres		725 (1951-56)	2,800 (1956-61)	4,919 (1966-69)	5,288 (Dec. 31, 1974)
Hospital Beds		113,000	186,000	270,000	366,000
COMMUNICATION		1941-50	1951-60	1961-70	1974
Post Offices in Rural Areas		30,810	69,513	88,023	105,491 (March 31, 1974)
Post Offices in Urban Areas		5,284	7,326	10,520	11,313
Telegraph Offices		8,205	11,729	15,460	16,710 (March 31, 1973)

- (ii) Ensuring a minimum availability of public health facilities including family planning and nutrition in all areas and more so in backward and undeveloped areas.
- (iii) Supplying drinking water to villages suffering from chronic scarcity or having unsafe sources of water.
- (iv) Provision of all-weather roads to all village settlements of 1500 persons or more.
- (v) Provision of developed home-sites for landless labourers in rural areas.
- (vi) Carrying out environmental improvement of slums, and
- (vii) Ensuring the spread of electrification to the rural population.

Twenty-Point Programme

- ★ *Reduction of Prices; display of stock position*
- ★ *Agricultural land ceiling; redistribution of land*
- ★ *Housing sites in rural areas*
- ★ *Abolition of bonded labour*
- ★ *Liquidation of rural indebtedness*
- ★ *Minimum wages for agricultural labour*
- ★ *Better irrigation for greater productivity*
- ★ *More power for greater production*
- ★ *Development of handloom sector*
- ★ *Better cloth for more people*
- ★ *Socialisation of urban land*
- ★ *Property valuation; punishment for tax evasion*
- ★ *Confiscation of smuggler's properties*
- ★ *Liberalisation of investment procedures*
- ★ *Worker participation in industry*
- ★ *National permit scheme for road transport*
- ★ *Income tax relief to the middle class*
- ★ *Essential commodities at controlled prices for students*
- ★ *Controlled prices for text books and stationery*
- ★ *Increased employment and training opportunities*

3.2.3 The minimum needs programme has gained further urgency following the announcement of the 20-Point Economic Programme by the Prime Minister, on July 1, 1975. The package programme lays stress among other things, on speedier distribution of surplus land and compilation of land records, stepping up of the provision of house sites for the landless and weaker sections, liquidation of rural indebtedness, review of laws of minimum agricultural wages, and bringing of an additional five million hectares of land under irrigation. The programme also focuses attention on (i) economic development with a closer interaction between different sectors and (ii) access of public services to different sections of population. To help the urban middle income group, legislation has been initiated to impose a ceiling on the ownership of vacant land, to restrict the plinth area of new dwelling units and to socialise urban land.

Land Policy

3.3.1 According to the Indian Constitution, land is a 'State subject', which means that each of the States in the country can devise policies regarding the use of land according to its own problems and objectives. At the national level, the policies being considered aim at conservation of land and allocation of macro-use of land for agriculture and for forests etc. to maintain the ecological balance. In relation to human settlements, the main emphasis has been on the socialisation of limited land.

Urban Land Policy

3.3.2 In order to prevent speculation on urban land and to optimise its use, the Fourth Plan emphasised the adoption of an Urban Land Policy. It had recommended large scale acquisition, development and disposal of land in and around cities and towns. The recommendations on urban land policy lay down the following objectives:

- (a)** Achieve an optimum social use of urban land;
- (b)** Make land available in adequate quantity at the right time and for reasonable prices to both the public authorities and to individuals;
- (c)** Encourage cooperative community effort and bonafide individual builders for the development of land, housing and construction; and
- (d)** Prevent concentration of land ownership in a few private hands and safeguard the interest of the poor and under-privileged sections of urban society.

Rural Land Policy

3.3.3 In rural areas, land reforms have been emphasised since the initiation of the Five Year Plans. The specific programmes concentrated on the abolition of

intermediary interests between the State and the tiller of the soil, regulation of the rent, provision of security of tenure for tenants with a view to conferring ownership rights, imposition of ceiling on agricultural holdings, distribution of surplus land among the landless and bringing about consolidation of land holdings. Until now nearly 20 million tenants have been brought directly into contact with the State. Until 1974, nearly 35.6 million hectares of land was consolidated which is nearly 25 per cent of the total agricultural land. Almost all the States have implemented land reforms with varying emphasis. Legislation for consolidation of holdings either compulsorily or voluntarily have been enacted. The States of Punjab, Haryana and Uttar Pradesh have undertaken large scale programmes.

Backward Areas Development

3.3.4 In the Third Five Year Plan, steps for the extension of economic programmes to the less developed regions and wider diffusion of industry into such areas was suggested. The Fourth Plan took a comprehensive view of the factors resulting in the backwardness of an area and proposed a Multi-directional Area Development approach. Another significant input has been directed towards the preparation of 'district plans' on the basis of 'felt needs' outlining selective and integrated strategies for development of such areas.

3.3.5 Special development programmes have been identified for areas such as the development of drought prone areas, the tribal development, and the hill and border development. At the same time, in order to disperse industries and strengthen the economic base, special incentives are being offered for setting up industries in such areas.

Industrial Location Policy

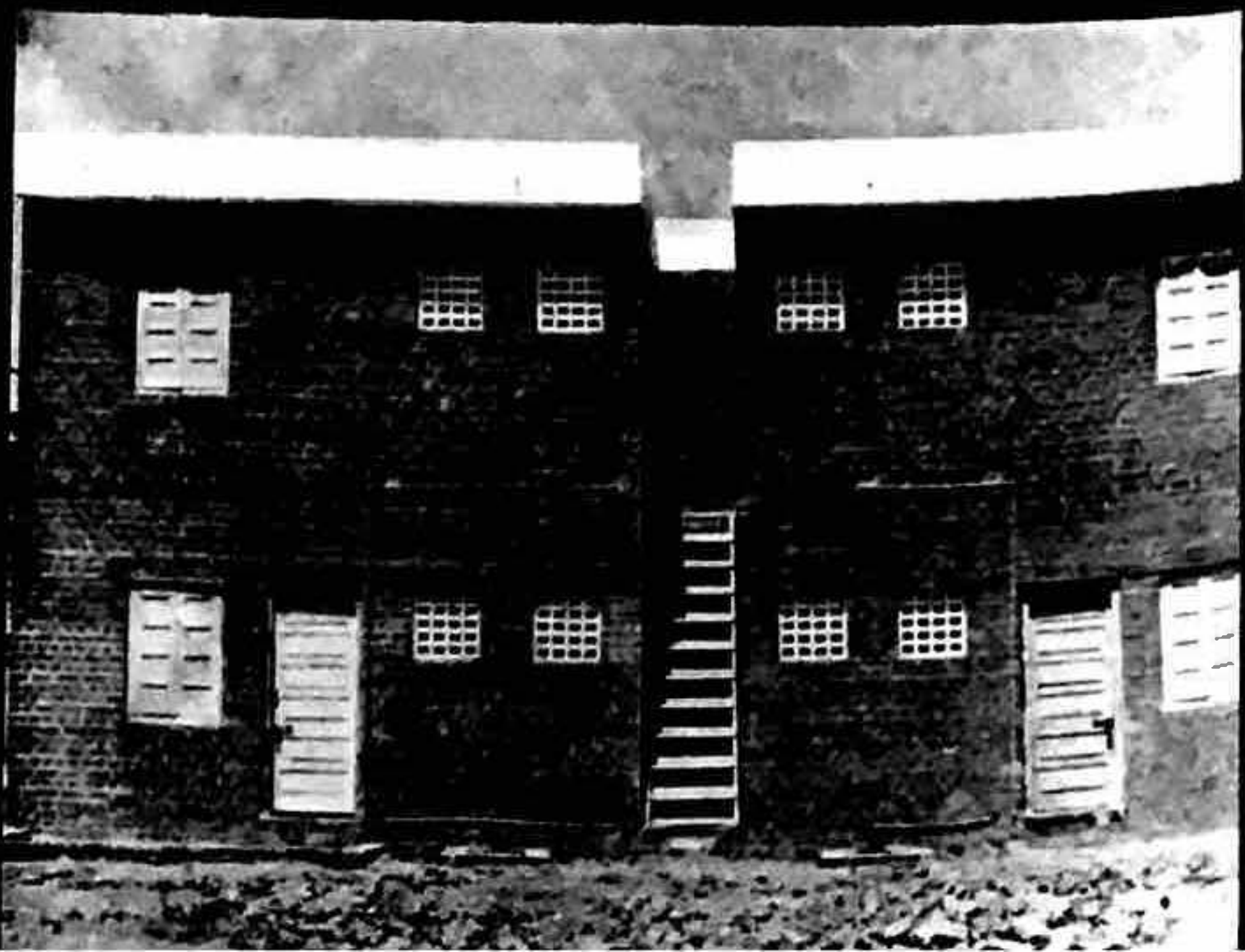
3.4.1 Even before planned development was initiated the Central Government had set forth in its resolution of April, 1948, the policies proposed to be pursued in the industrial sector. The Industrial Policy Resolution of 1956 continues to be the basis of industrial development in the country. However, after the report of the Monopolies Commission (1965) and the Industrial Licensing Policy Enquiry Committee (1969), changes in the industrial licensing policy have been considered necessary with a view to achieving more effectively the economic and social objectives of industrial development. The National Five Year Plans have also recognised the need for avoiding over-concentration of industries in a few areas specially in the metropolitan cities. A gradual deconcentration and re-location of these industries and location of new industries outside the metropolitan regions especially in backward areas, was among the recommendations, which include:

- (a) The location of basic industries has generally to be based on technical and economic considerations;
- (b) The general approach will be to avoid further concentration of industrial activity in areas where considerable development has already taken place or has been planned. Expansion of existing industries in such areas will not necessarily be ruled out, if it is in keeping with the overall economic strategy. As far as possible, new industries will be set up away from large and congested cities; and
- (c) The government will encourage the private sector to locate industries in underdeveloped regions through its industrial licensing policy and by the provision of economic and other incentives like, water, power, transport and communications etc.

Guidelines for Urbanisation

3.5.1 As components of public policy for guiding urbanisation the following have been generally accepted, and also practised to the extent possible:

- (a) Large size cities, especially those with more than one million population, should not be allowed to expand any further. As far as possible new industries and other economic activities which accentuate growth should be located away from these centres;**
- (b) New urban centres in the proximity of the metropolitan cities should be developed as counter-magnets for migrant population. In order to promote growth in these alternate centres, industrial and other activities are to be channelised by providing initial investments and incentives in the form of land at concessional rates, power, water and other facilities;**
- (c) New urban nuclei should be planned in resource rich areas to generate growth in those areas. For this purpose, the large industrial towns that have been established during the last two decades are being utilised;**
- (d) The medium sized towns in the population range of 50,000 to 300,000 are to be provided with adequate services and amenities, housing, and properly laid out industrial estates so that they could attract new growth; and**
- (e) The location of these growth centres are to be chosen within the scope of the integrated regional or area development plans.**



**Housing
Policy and
Programmes**

3.6.1 A review of the housing policy is made every year by the State Ministers of Housing. Most of the funds for housing and urban development, are provided by the Central and the State Governments. The Life Insurance Corporation of India also supplements private and governmental efforts. The Central Government has set up a revolving fund to be administered by the Housing and Urban Development Corporation (HUDCO), which advances loans to state governments, State Housing Boards and Housing and Urban Development Authorities.

3.6.2 The Housing and Urban Development Corporation (HUDCO) observed that in a country where 93 per cent of the families live on incomes lower than Rs. 600/- per month, it is imperative that any mass housing programmes should cater largely to the needs of the poor and be available to them within their paying capacity. As such it has adopted a system of differential rates of interests on hire-purchases for economically weaker sections of the society. For people having income below Rs. 350 per month the interest charged is five per cent; for low income groups drawing upto Rs. 600 per month it is seven per cent; for the middle income group with income upto Rs. 1500 per month it is nine and a half per cent and for others it is eleven and a half per cent. HUDCO also lends for commercial schemes at 14 per cent. Thus the interest charged from the upper income groups and commercial developments is used to subsidise the poor.

3.6.3 In its endeavour to ensure that its funds assist as many families as possible to acquire homes, HUDCO has evolved economical designs for various categories of housing. These designs are recommended to borrowers, who have generally been receptive to such

<i>Low Income Group</i>	
<i>Housing for Economically weaker section</i>	<i>Middle Income Group Housing</i>
<i>Low Income Group Housing</i>	<i>Housing for Economically weaker section</i>

***HOUSES FINANCED BY HUDCO**

(as on March 31, 1975)

Economically weaker Sections	52,879
Low Income Group	24,842
Middle Income Group	14,532
High Income Group	448
<hr/>	
Total	92,701

*Vth Annual Report 1974-75, HUDCO

suggestions, adapting them, if necessary, to local conditions. In making its designs HUDCO has to bear in mind the requirements of the building codes, the need to standardise components and construction techniques and to minimise the use of scarce building materials like cement and steel. It also assists the setting up of building materials industries which replace steel and cement or increase the production of bricks, secondary wood species, etc.

3.6.4 (a) In the four and a half years of its active existence, HUDCO has financed over 14,000 dwelling units and 20,000 plots in 99 cities and towns all over the country which will house more than 620,000 people in 240 housing schemes worth Rs. 1420 million. Over 83 per cent of these houses will be for those earning less than Rs. 600 per month.

(b) HUDCO is now undertaking the demonstration of cheap housing projects jointly with the State housing agencies. One such project in band is at Agra in collaboration with the Uttar Pradesh Housing and Development Board. The cost of the individual house is expected to be about Rs. 4,000.

Research and Development

3.6.5 The resource limitation, and the need for creating substantial employment have led to the adoption of labour intensive technology, with less sophistication and utilisation of indigenous materials. Low cost techniques in house construction are being promoted. Under the social housing programmes and financing schemes of the Housing and Urban Development Corporation, ceiling limits have been prescribed for the cost and plinth area of houses to be constructed. The National Building Code has incorporated the minimum technical specification required for safety and economy in

construction. Local authorities are expected to adopt the specifications while approving building plans.

3.6.6 In scrutinising building plans emphasis is being placed on functional utility and aesthetics rather than on luxury. This approach is expected to result in discipline and economy in the use of land and building materials. In the design of mass housing, appropriate technology suited to the indigenous materials and the range of skills available in the different parts of the country is being adopted.

3.6.7 Research into building techniques and new methods of house construction is also being encouraged by the National Building Organisation (NBO). Established in 1954, NBO is an advisory and co-ordinating body for technical matters concerning building and housing. The organisation sponsors research work on various aspects of building construction, improvement of and utilisation of building materials and on the sociological and economic aspects of housing. Five rural housing wings at Anand, Bangalore, Calcutta, Chandigarh and New Delhi are functioning under NBO for research, training and extension work in rural housing and village planning. It also functions as a United Nations regional housing centre for the ECAFE region.

3.6.8 The Council of Scientific and Industrial Research (CSIR) with its network of laboratories and research institutions is another instrument of scientific and industrial research under the auspices of the government. It also supports research in universities and other centres of learning. The laboratories run by CSIR and associated institutions are grouped into six distinct disciplines. The laboratories connected directly

to major aspects of human settlements are: the Central Road Research Institute (CRRI) at New Delhi whose work includes road safety and standards for road building, plant and machinery; the Central Building Research Institute (CBRI) at Roorkee, with field stations at Calcutta and extension cells at Ahmedabad and Bhopal, undertakes work relating to building management and functional efficiency. The designs prepared by CBRI have already brought about economy in cost ranging from 20 to 30 per cent. The Structural Engineering Research Centre (SERC) at Roorkee and Madras does research in specialised design and structural problems connected with buildings, bridges and other structures and develops computer programmes for analysis and design of "repeatable" structures like multi-storeyed buildings, pre-stressed beams, shell roofs and folded plates etc. The National Environmental Engineering Research Institute (NEERI) at Nagpur with its zonal laboratories at Ahmedabad, Bombay, Calcutta, Delhi, Hyderabad, Jaipur, Kanpur, Madras do research in sanitation and disposal of sewage and industrial waste, industrial hygiene and pollution.

3.6.9 Several Public Undertakings like National Industrial Development Corporation (NIDC), National Building Construction Corporation (NBCC), Engineers India Ltd., (EIL) etc. undertake large scale consultancy and construction work at various levels for national and at times, international needs.

Social Housing Programme

3.7.1 The Social housing schemes introduced by Ministry of Works, Housing and Urban Development are implemented by the State Governments and through their designated agencies, such as State Housing Boards. The Housing Boards are statutory bodies constituted under the State legislature. The responsibility for



exercising control is primarily that of the State Governments concerned. So far thirteen States of Andhra Pradesh, Assam, Bihar, Gujarat, Kerala, Madhya Pradesh, Maharashtra, Orissa, Punjab, Rajasthan, Tamil Nadu, Uttar Pradesh, West Bengal and three Union Territories of Chandigarh, Goa, Daman and Diu and Pondicherry, have set up Housing Boards.

3.7.2 A number of social housing programmes have been taken up and strengthened through the Five Year Plans.

- (a) Integrated subsidised housing scheme for industrial workers and economically weaker sections of the community operating since 1952, provides loans and subsidies for construction of houses for industrial and low paid workers whose income does not exceed Rs. 350 per month. Recently this income limit was increased to Rs. 500 per month subject to specified conditions.
- (b) Low income group housing schemes started in 1954, provides loans to persons or to members of co-operatives whose income is less than Rs. 7,000 per year. The amount of loan is restricted to 80 per cent of the cost of the house including the cost of developed land;
- (c) A scheme of slum clearance and slum improvement programme was initiated in 1956 with a view to removing slums and rehousing the population. Subsequently it was revised in 1972 for improving the environmental sanitation and conditions in slum areas which are not likely to

Social housing schemes

(Progress since their inception to 30th June, 1975).

Scheme	Dwelling Units 30th June, 1975
A State Sector	
1. Integrated Subsidised Housing Scheme for Industrial Workers and Economically Weaker Sections of the Community.	1,82,233
2. Low Income Group Housing Scheme.	2,44,009
3. Middle Income Group Housing Scheme.	34,322
4. Rental Housing Scheme for State Government Employees.	23,701
5. Village Housing Project Scheme.	59,659
6. Land Acquisition and Development Scheme. Land Acquired, Land Developed.	26,928
7. Slum Clearance/Improvement Scheme.	95,812
8. Subsidised Housing Scheme for Plantation workers.	4,085
B Central Sector	
9. Free Housing Sites for Landless Workers.	5,762,000
10. (a) Expenditure incurred on Central Scheme for Environmental Improvement in Slum Areas.	Rs. 164.9 million
(b) Projects sanctioned.	Rs. 246.0 million
11. Dhuggi and Jhowpri Removal Scheme (Plots/tenements).	59,048 (September, 75).

SOURCE: Ministry of Works, Housing and Urban Development, December 1975.

be cleared in the next ten years. This programme aims at providing drinking water, sanitation, lighting, drainage, paved streets and similar facilities to improve the living environment of the slum population. During the past two years of its operation, it has benefited 3.3 million slum dwellers in twenty urban centres.

3.7.3 Nearly 530,000 houses had been constructed upto April 30, 1974, by State governments and administrations in Union Territories under various social housing schemes, excluding slum clearance and improvement schemes. In addition, over 11,000 hectares of land were acquired by State governments and over 6,000 hectares of land developed for housing purposes.

**‘Sites and Services’
Programme in
Urban Areas**

3.7.4 In preparing new urban development plans, land within urbanisable limits has been allocated according to the projected income-mix of the population. The intention is to develop ‘sites and services’ and encourage the low income groups and economically weaker sections of society to utilise their own resources for house construction. Even in the establishment of new housing colonies by public authorities, emphasis is being laid on allocating adequate number of developed plots or reserving an adequate proportion of houses for such classes. Open plot development scheme in Madras and the “Jhuggi Jhonpri” Scheme in Delhi are examples of ‘sites and services’ programmes. In Delhi, the transitional squatter settlement programme has enabled settlement of nearly 50,000 families. A similar scheme is in operation in the States of Maharashtra and Gujarat.

Rural Housing Programmes

3.7.5 To assist the villagers in improving their housing conditions, a scheme was introduced in 1957, under which loans upto 80 per cent of the cost of construction were made available.

3.7.6 Since 1972, the landless workers in rural areas, who do not possess a house or house site of their own, are being provided with a 'free of cost' developed house plot of approximately 80 sq. metres. Subsidy is also being provided for the construction of houses. In certain sectors, like plantation, coal or mining industry, the owners of the management have been made responsible for providing residential accommodation for its low paid workers.

3.7.7 Some of the State governments have also launched massive rural housing programmes to provide houses for the weaker sections of the community, the landless agricultural workers, scheduled castes and tribes. The State of Kerala has a scheme of providing 100,000 houses to the landless. This scheme envisaged the distribution of 100 houses in each of the 960 'panchayats', (lowest unit of administration having elected members) throughout the State. Thus the total number of houses required was 96,000. About 1800 hectares of land were required for the scheme in the 'panchayat' areas which was acquired in record time. The selection of sites was made by the elected local committees following the guidelines given by the State Town Planning Department. In each 'panchayat', five different sites, each one sufficient to put up 20 houses were acquired. Each house site would be about 200 sq. m. Preparation of typical layouts and the type design for the dwelling unit was done by the Town Planning Department. The construction was made under the supervision and guidance of the local

Panchayat Committees, co-opting voluntary services of technical officers in government service as well as the staff and students of engineering colleges and polytechnics. Many voluntary organisations came forward with financial help as well as voluntary labour. The involvement of citizens, from school children to the highest paid officer, is a notable feature of the scheme.

Transportation Policy

3.8.1 Transportation networks mainly consists of railways, roads, coastal shipping, airways, inland waterways and pipe lines. On an average these systems move an estimated 200 billion tonne km. of freight and 270 billion passenger km. per year. Railways and road services provide for over 95 per cent of transport in India, with other means of transportation contributing marginally.

3.8.2 The Indian Railways is the largest government undertaking in the country. The responsibility for the administration and management rests with the Railway Board under the over-all supervision of the Union Cabinet Minister for Railways. This arrangement provides the Railways with a fair amount of autonomy in their operation.

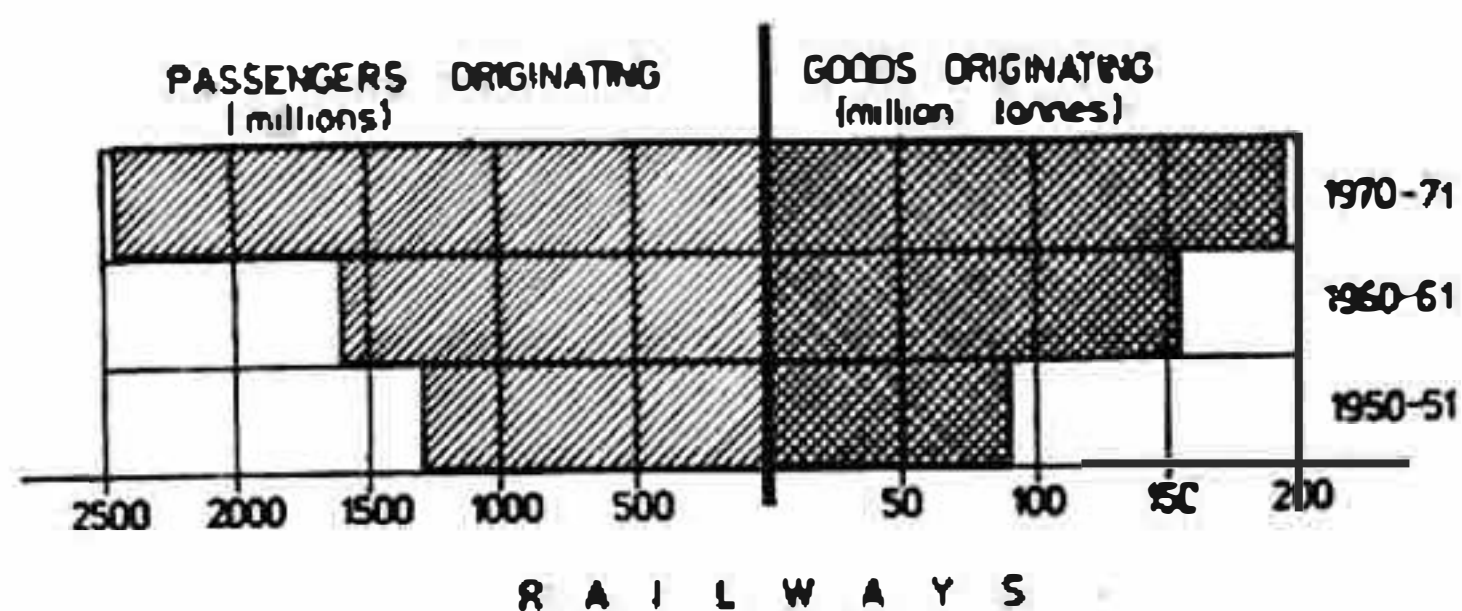
Corporate Plan for Railways

3.8.3 The planning process of the Railways consists of Five Year Development Plans in harmony with the national five year plans. The Ministry of Railways has been promoting an integrated rail, road transportation strategy and consider that railways' strength lies in moving bulk goods and long and medium distance freight and passenger traffic. Indian Railways are engaged in the preparation of a long range

Corporate Plan with a time horizon upto year 1988-89.
Some of the objectives of the Corporate Plan are:—

- (i) to provide rail transport for both passenger and goods, adequate to meet the demand, in such areas for which railway operation confers optimum benefits to the economy, having due regard to government's policy of development of backward areas;
- (ii) to provide such rail transport at the lowest cost consistent with—
 - (a) the requirements of the railway users and safety of operation;
 - (b) adequate provision for replacement and some provision for development of business, and
 - (c) the least amount of pollution of the environment;
- (iii) To work in association with or utilise other modes of transportation, such as pipelines and road transport corporations, and to engage in ancillary activities necessary to subserve the above objectives.

3.8.4 In the past two decades the freight carried by the Indian Railways has increased three fold in tonne km and the passenger traffic has also doubled in terms of passenger km. It carries nearly 7 million persons and 500,000 tonnes of freight on a network of 7,000 stations by means of nearly 11,000 trains everyday.



3.8.5 The passenger traffic by rail has increased from 67 billion passenger km in 1951 to about 135 billion passenger km in 1973-74. The growth rate has been primarily in inter-urban, medium and long distance traffic, for which railways are well suited. On short distance non-suburban traffic the rate of increase has been less than two per cent for railways as against six to seven per cent for road. The passenger traffic by road has grown from 23 billion passenger km in 1951 to about 130 billion passenger km in 1973-74. The share of traffic by road (in terms of passenger km) has grown from 25 per cent in 1951 to 48 per cent in 1971. This trend is expected to continue, with more and more of short distance non-suburban traffic shifting to road.

Road Transportation

3.9.1 The long-term plan (1961-81) for highway development as proposed by the State Chief Engineers for Public Works Department in 1957 is being carried out at present. The total road network in India comprises of—

- (a) *the route lengths* of highways running through the length and breadth of the large administrative areas, districts and states, connecting all nodal areas/centres of traffic;
- (b) *the nodal lengths* of roads within the limits of areas under the local authorities such as Urban Area Committees, Municipalities, Cantonments, Port and Railway Authorities; and
- (c) the lengths of *access roads* within project areas for exploiting resources such as forests, irrigation, hydropower etc.

Rail & road infrastructure

Years	* R A I L W A Y S				** R O A D S		
	ROUTE LENGTH IN KILOMETRES			Railway track	Surfaced Road (000) Km	Unsurfaced Road (000) Km	Road length (000) Km
	Electrified	Non-electrified	Total				
1950-51	388	53,208	53,596	59,315	157	243	400
1960-61	748	55,499	56,247	63,602	263	261	524
1970-71	3,706	56,060	59,766	71,669	421	543	964
1971-72	3,953	56,115	60,068	73,225	472	658	1,130
1972-73	4,055	56,094	60,149	73,644	474	680	1,154

*Vehicles on Road

(As on March 31, 1972)

	Motor Cycles Scooters etc.	Private Motor Cars.	Auto- Rickshaws And Taxis.	Buses	Goods Vehicles	Misc.	Total vehicles registered.
Number	645,608	671,283	108,133	99,960	363,916	143,469	2,032,369
Percentage	31.76	33.02	5.31	3.91	17.95	7.05	100

*India 1975, Min. of Information & Broadcasting.

66 **Transport Research Division, Ministry of Shipping & Transport—December, 1975.

3.9.2 Of these, the route lengths are categorised by the Highways Departments into the following four classes based on their functions and the nature of traffic. The authorities are responsible for their construction and maintenance ensuring uniform minimum standards for each class throughout the country, allowing however, variations in the specifications according to the actual volume of traffic:

**Guidelines
for
Highways**

- (i) The National Highways:** these function as arterial roads for uninterrupted inter-state as well as international traffic. They connect national and state capitals, the major ports, rail junctions and foreign highways, they include the border and other strategic roads required for the defence of the country. Parts of these roads which have to pass through highly industrialised areas are provided with higher specifications based on access and volume of traffic and are distinguished as the expressways of National Highway System.

- (ii) The State Highways:** these function as the branch roads of the State and National Highways to facilitate within the district an uninterrupted traffic between the centres of production and marketing. They traverse the interiors of a district connecting its areas of production and marketing with the State and National Highways and the Railways. The aim is to have such roads within three km reach of every village in all highly populated areas and within about eight km reach of all other areas of the district.

- (iii) **The Village Roads:** these are classified to function as the feeder roads of other highways and as roads for inter-village communication.

Urban Transportation

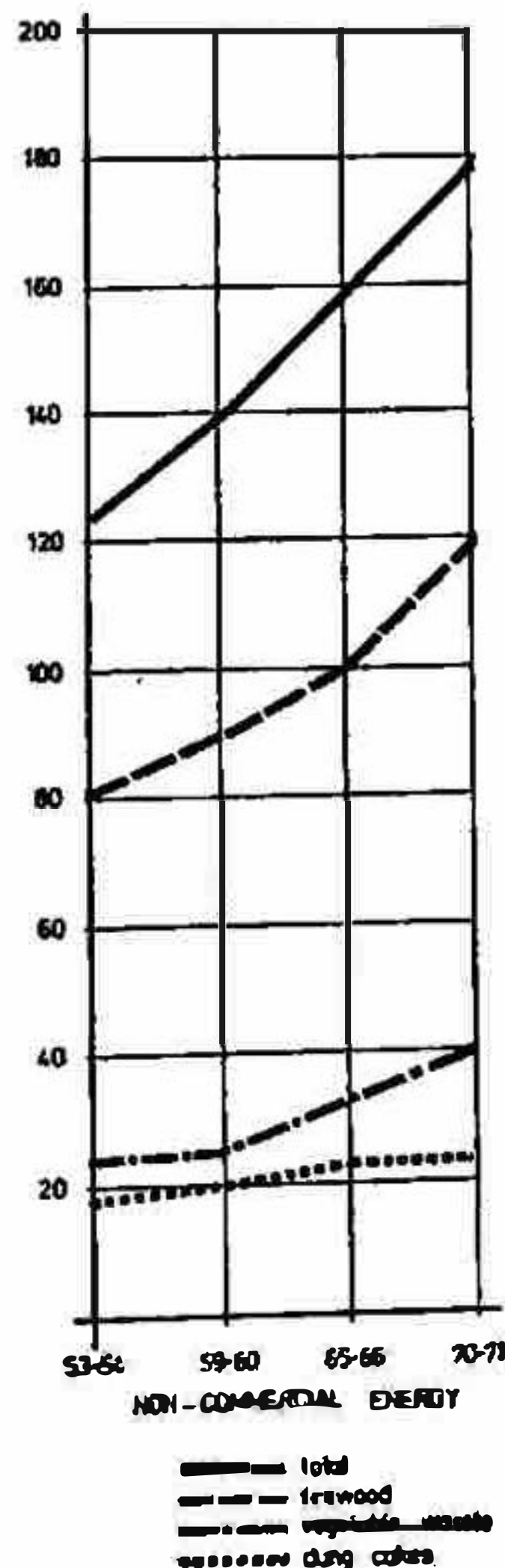
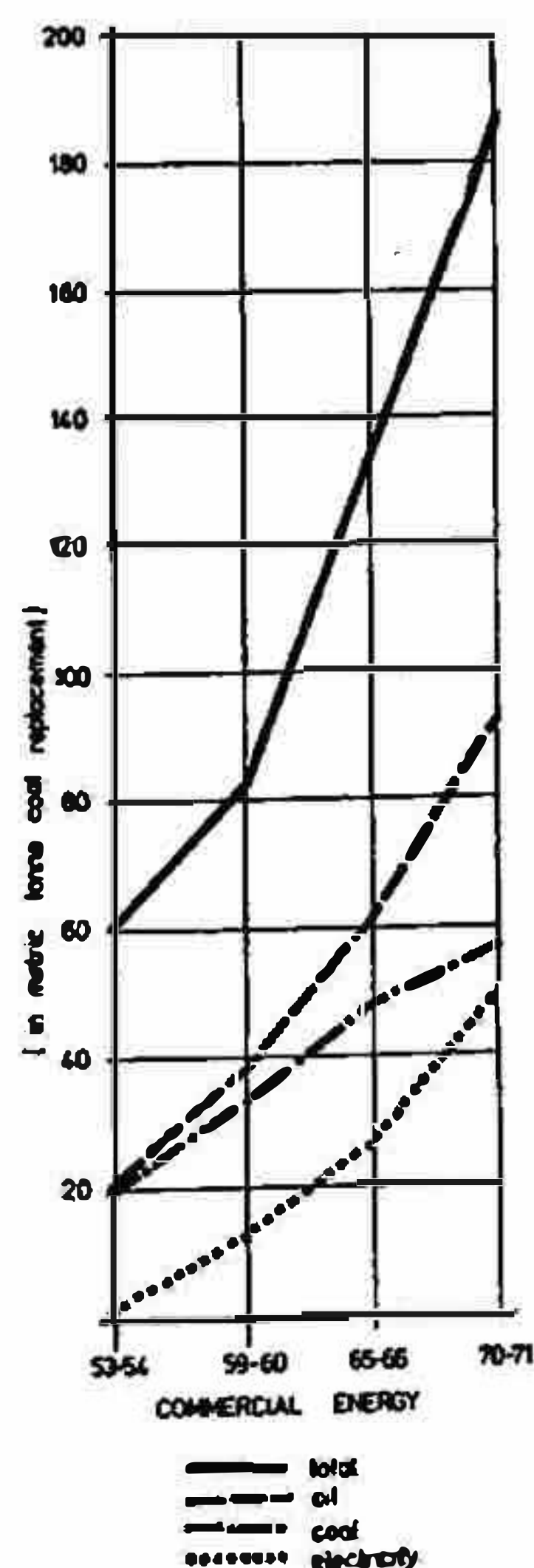
3.9.3 Inter-urban and intra-urban passenger traffic in India is highly heterogeneous. They include electric trains, buses, cars, taxis, three-wheeler auto-rickshaws, cycle rickshaws, tongas (horse-carriages), bullock carts and bicycles. For short distances, roads provide a better service, road traffic has accounted for a growth rate of seven to eight per cent against two per cent for railways. While the railway system is totally under government control, only 50 per cent of the bus services are operated by the public sector, the rest being run by private agencies.

3.9.4 In metropolitan cities, however, the demand is much higher and the existing suburban rail system along with the bus system needs to be coordinated to meet the future demands. Mass transit by rail is cheaper and as such rail-based urban transportation is being envisaged for nine metropolitan cities. Calcutta has already started implementing such a system. Legislation for setting up a unified traffic and transportation authority has been introduced in Calcutta and similar efforts are underway in other major cities. Statutory Corporations have been set-up under the Road Transport Corporation Act, 1950 in several States. In others, the nationalised services are operated by departmental and municipal and municipal undertakings or registered companies.

Guidelines for Energy Policy

3.10.1 It is essential that the policy relating to development, distribution and utilisation of energy is formulated with great care as it has a direct bearing on the way of living of any community. Formulation of a comprehensive policy for energy development in India has to keep in view the following aspects, some of which are peculiar to this country:

- bulk of the Indian population lives in rural areas and they are relatively poor.
- of the total energy consumed in India, domestic sector accounts for about 57 per cent and most of it is utilised for household lighting and cooking.
- bulk of the energy consumed in the domestic sector comes from the so-called “non-commercial sources” which contribute 47.5 per cent to the total energy consumption some of which is gathered ‘free of cost’ as firewood, agricultural waste, dung cakes etc.
- India has limited reserves of coking coal and sizable reserves of non-coking coal which is of poor quality.
- proven resources of oil in India are meagre, though there is large potential; oil explorations now underway may lead to location of larger resources.
- there is sizable unexploited hydro-potential in various regions of the country.



3.10.2 In the domestic sector, use of non-commercial fuels like fire-wood, cow-dung cakes and agricultural waste can be expected to continue in the foreseeable future. The policy measures would have to be directed towards—

- (a) ensuring availability of adequate quantity of fire-wood without leading to deforestation by planting “social” forests with fast growing wood that can be used as fuel;
- (b) Popularisation of ‘gobar’ gas (biogas) plants to ensure utilisation of cow-dung both for production of fuel and as nutrient for agricultural purposes; and
- (c) discouragement of use of agricultural waste like bagasse for fuel since it has industrial application.

3.10.3 Kerosene has been the most popular fuel used in the domestic sector both for lighting and cooking. In view of the phenomenal increase in the cost of petroleum in recent years and the consequent effects on the balance of payments, it is essential to adopt measures which would discourage use of kerosene in the domestic sector. In this context, availability of other fuels to substitute for kerosene is important. In view of the availability of sizable quantum of poor quality non-coking coal, policy would have to be directed towards making available soft coke cheaper to domestic consumers, particularly in the urban areas. As electricity can be produced almost entirely from indigenous sources and it is the most convenient and versatile form of energy for illumination purposes, its use must be encouraged in the rural areas also.

Environmental Legislation

3.10.4 As far as commercial forms of energy are concerned, coal will in future be the primary source of energy. The future programmes of coal-mining will have to take note of the fact that coal and its products would be required as substitutes for oil to the extent possible.

3.10.5 The development of commercial energy would need to be consistent with the objectives of environmental protection and reduction of pollution. The research and development efforts would be directed towards development of sources like solar energy, wind power and tidal power for application wherever feasible. Considering that resources of energy in India are limited compared to the pressure of population, an early exploitation of these sources is of significance to improve the per-capita availability of energy.

3.11.1 The Water (Prevention and Control of Pollution) Act, 1974 was passed by the Parliament in March, 1974. The Act applies in all Union Territories administered by the Central Government and in States. This legislation sets up Statutory Boards, possessing broad powers to regulate activities which generate pollution and to monitor and report on the state of water pollution in areas within their jurisdiction. The Boards are being equipped with their own experts and laboratories. The new industries must obtain the consent of the Board before disposing off their effluents in any water body; existing industries must also act within a specific period of time to conform to the requirements of the legislation. The Boards are also empowered to set standards for effluent quality taking account of local conditions, water use patterns etc.

3.11.2 A Central Bill on Air Pollution is also being processed and this will be presented to Parliament in the near future. The purpose of this legislation will be to bring under the purview of governmental environmental agencies all activities which might threaten air quality.

3.11.3 The Wild Life (Protection) Act, 1972 was passed in September, 1972. This Act enables the Government to control the sale or export of the products of threatened or endangered species of fauna and flora. A schedule of such species has been drawn up and is continually under review of the Indian Board for Wildlife. The legislation is, like those relating to water and air pollution, administered by each State.

National Urbanisation Policy

3.12.1 The National Urbanisation Policy under consideration recognises the rapid rate of urbanisation and possible acceleration of the process due to economic compulsions. It recognises such urbanisation as a means of achieving redistribution of population over the next two decades to bring about a better balance between the rural and urban population. The policy conceives rural and urban settlements as a continuum and aims at the following objectives:

- (a) evolving a spatial pattern of economic development based on regional planning and location of a hierarchy of human settlements

consistent with the exploitation of the natural resources in the region, and ensuring functional linkages *inter se*;

- (b) securing the distribution of population between rural and urban settlements within each region on a long term as well as short term perspective;
- (c) securing the distribution of economic activities in small and medium sized towns and in new growth centres in order to include the desired population distribution and achieve maximum economic growth for the future;
- (d) controlling and, where necessary, arresting the further growth of metropolitan cities by dispersal of economic activities, enactment of legislative measures and establishment of new counter-magnets in the region to reduce social and economic costs and to improve the levels of living; and
- (e) providing a minimum level of services for improving the quality of life in rural and urban areas and gradually reducing the difference between rural and urban life style.

3.12.2 The adoption of such an urbanisation policy will require a total integration of key factors such as the industrial and agricultural policies, family planning and population policy, the urban development and locational policies, working force and employment policy, and the trade and commerce and financial policy, since the programmes of development in all these sectors foresee the attainment of broader social and economic goals.

Urban Land Ceiling

3.12.3 The Urban Land (Ceiling and Regulation) Bill, 1976, as passed by both Houses of Parliament, received the assent of the President on February 17, 1976. The Act is being published in the Gazette Extraordinary and comes into force immediately in the Union Territories and the States of Andhra Pradesh, Gujarat, Haryana, Himachal Pradesh, Karnataka, Maharashtra, Orissa, Punjab, Tripura, Uttar Pradesh and West Bengal. The Act seeks to :

- (i) impose a ceiling on holding of vacant land by persons in the urban agglomerations falling within these States. A person can have upto 500 sq metres in category 'A', 1,000 sq metres in category 'B', 1,500 sq metres in category 'C' & 2,000 sq metres in category 'D', of urban agglomerates in these States as specified.
- (ii) regulates the transfer of urban property within the urban agglomerations specified above and
- (iii) restrict the plinth area of dwelling units to be constructed to 300 sq metres in A and B categories and to 500 sq metres in C and D categories of the urban agglomerations specified above.

Category

- 'A' — *Metropolitan cities of Delhi, Bombay, Calcutta and Madras.*
- 'B' — *Urban agglomerations with a population of one million and above excluding the four metropolitan cities.*
- 'C' — *Urban agglomerations with a population between 300,000 to one million.*
- 'D' — *Urban agglomerations with a population between 200,000 and 300,000.*

The Act would thus cover 46 urban agglomerations in 11 States to which it applies immediately and in addition Delhi and Chandigarh urban agglomerations in the Union Territories.

The Act would also be applicable in the peripheral areas ranging from one kilometre to eight kilometres around the urban agglomerations specified above.

".....I have spoken of the unfinished revolution in our countries. I am now convinced that this can be taken to its culmination when it is accompanied by a revolution in social thinking in 1968, at the 14th General Conference of UNESCO the Indian delegation, along with others, proposed a new and major programme entitled "A Design For Living". This is essential to grasp the full implications of technical advance and its impact on different sections and groups. We do not want to put the clock back or resign ourselves to a simplistic natural state. We want new directions in the wiser use of the knowledge and tools with which science has equipped us. And this cannot be just one upsurge but a continuous search into cause and effect and an unending effort to match technology with higher levels of thinking. We must concern ourselves not only with the kind of world we want but also with what kind of man should inhabit it."

*INDIRA GANDHI
UN Conference on Human Environment
Stockholm—1972.*

an approach to
human settlement
policy in india



Magnitude of Population

4.1.1 The future evolution of human settlements in India to a large extent will depend upon the population growth, availability of resources and their appropriate distribution. The change in values, in expectations of the people and in technologies employed will shape the quality of life of the people. While it is recognised that the dynamics of settlement growth and pressures are not always amenable to detailed planning, it is through proper management of such factors that acceptable quality of life for a large population can be realised. To some extent this is dependent on the framework of policies adopted for national development at various levels. It is essential, therefore, to assess the requirements and the potentialities of the country in its immediate future before arriving at coherent policies for human settlements.

4.1.2 The population of India is expected to increase from 548 million persons in 1971; to 668 million in 1981; about 800 million in 1991 and to nearly 945 million in the year 2001. The assumption of birth, death and fertility rates used in these calculations, while being reasonable, may need further revision and updating in view of the unexpected changes in the present perspective. In this context of expected population growth during the next 25 years, the change in distribution of population between various types of settlements and their demands on resources would depend partly on the momentum of the current demographic patterns and partly on the development in the national policies for economic opportunities and social change.

4.1.3 The proportion of rural population in India today is large, and according to the present trends it is expected to remain large even by the end of the century. The trends suggest that 60 to 70 per cent of the

ASSUMPTIONS FOR GROWTH OF POPULATION

	1971	2001
	per thousand	per thousand
Birth-rate	39	26
Death-rate	17	10
Fertility-rate	167	110

SOURCE: Population of India, 1974—World Population Year
CICRED Series.

GROWTH OF POPULATION AND ITS RURAL URBAN DISTRIBUTION—DURING 1961-2001

Year	Population (in million)		
	Total	Urban	Rural
1961	439	79	360
1971	548	109	439
1981	668	150	518
1991	801	205	596
2001	945	278	667

SOURCE: 1) Actuals as given in Census of India, as of 1961 and 1971.

2) Estimates are based on the population of India, 1974 World Population Year, CICRED Series.

population will be living in rural areas in the year 2001 as against 80 per cent today. It implies that nearly an additional 130 to 225 million people will be added to the rural population and 175 to 270 million to the urban population in the coming 25 years. The overall density of population is expected to increase from 178 per sq km in 1971 to nearly 288 persons per sq km in 2001.

4.1.4 Because of constraints on the availability of land and its use, increasing pace of economic development and growth of population, the urban population may increase faster than anticipated. One of the estimate suggests that urban population may have to be increased to nearly 47 per cent to maintain the present levels of living and to ensure the increased productivity needed for providing nearly full employment by the end of the century. It may, therefore, be reasonable to assume that in India the proportion of urban population is bound to increase substantially in the coming two and half decades.

4.1.5 These trends also indicate that the future growth of population may lead to highly concentrated settlements which may face problems of disposal of large quantities of industrial and human wastes in urban settlements and exert further pressures on agricultural land in rural areas. The increase in population density may lower the per capita availability of resources—natural as well as man-made and generate additional problems of environment unless appropriate scientific and technological measures are adopted sufficiently in advance to meet the challenges of the changing society.

Availability of Resources

4.2.1 India has more than 14 per cent of the world's population in a land area constituting a little more than two per cent of the world. Land is a limited resource and has to be put to a variety of uses. Usability of land is

further limited by soil conditions, terrain and its location. The first charge on land is necessarily the production of food for which adequate area will have to be reserved. In addition land will be needed for non-food agricultural products like cotton, jute and other fibres, for grazing of animals and production of fodder, and for mining etc. A certain proportion will be needed for forests, preservation of flora and fauna and for the development of human settlements.

4.2.2 The pattern of land utilisation projected for the end of the century incorporating the national forest policy to keep nearly one third of the total land under forests would further restrict the availability of land for non-agricultural purposes. On the basis of projections made for the year 2001, it is estimated that human settlements may use nearly 2 per cent of the total land. During the past decade, land under human settlements has increased from 1.2 per cent in 1961 to 1.8 per cent in 1971. As such, a coherent policy for proper management of land needs to be evolved. In evolving such a policy, consideration has to be given to the Indian political situation such as the primary authority of the State governments on the use of land.

4.2.3 Better management techniques to reclaim unusable areas, ravines, saline-land and water-logged areas; for the protection of suitable land from erosion or desertification; and for the use of derelict, blighted and undeveloped or under-developed land in human settlements will require extensive scientific and technological inputs ensuring optimum ecological balance between human activities and natural environment. Further evaluation of ownership of land and land tenure may also need to be considered to prevent its exploitation.

PATTERN OF LAND UTILISATION (million hectares)
During 1970-71; 1985; 2000

	1970-71	1985	2000
AREA UNDER FOREST	66.0	70.0	70.0
AREA NOT AVAILABLE FOR CULTIVATION	45.4	54.0	56.0
i) area under non-agricultural uses	16.2	21.5	26.0
ii) barren & unculturable land	29.2	32.5	30.0
OTHER UNCULTIVABLE LAND EXCLUDING FALLOW LAND	33.8	32.5	29.0
i) Permanent pastures & other grazing land	13.3	14.0	15.0
ii) land under misc. tree crops & groves not included in net area sown	4.4	5.0	5.0
iii) culturable waste	16.1	13.5	9.0
FALLOW LAND	19.7	16.5	13.0
i) other than current fallows	8.6	7.0	5.0
ii) Current fallows	11.1	9.5	8.0
NET AREA SOWN	140.4	145.0	150.0
TOTAL REPORTING AREA	305.3	318.0	318.0
AREA FOR WHICH NO RETURNS EXIST	22.7	10.0	10.0
TOTAL GEOGRAPHICAL AREA	328.0	328.0	328.0

SOURCE: National Commission on Agriculture 1976
Min. of Agriculture & Irrigation.

Water

4.2.4 According to the studies conducted by the Central Water Commission, the average annual precipitation over the country excluding evapotranspiration and soil moisture storage has been estimated to be 179 million ha m resulting in surface run-off and ground water recharge included in the annual hydrological cycle. On account of the limitations of topography, physiography, geology, dependability, quality and the present state of technology, only a part of this will be utilisable water. It has been roughly assessed that about 67 million ha m of surface water and 26.5 million ha m of ground water can be eventually utilized. The National irrigation Commission has recommended (1972) that domestic requirements should have the highest priority in the allocation of water, followed by industry and then by irrigation. As between irrigation and power generation, the Commission recommends that priority be given to irrigation.

4.2.5 The unexpected changes in the population perspective, the uneven distribution of water today and the quality and quantity of water available are major aspects to be considered for its optimum utilisation. Management of water as a resource needs scientific thinking and requires technological measures for optimising its use. Presently, consideration is being given to recycling of water in human settlements, for tapping of underground sources and for the preservation of underground and surface water loss from evaporation.

Labour Force

4.2.6 India has one of the largest potential of man-power. Even after assuming labour intensive technologies for increasing agricultural production and increase in area sown, a large surplus of rural population is expected to join the non-agricultural labour force by the end of the century. It becomes necessary to utilise this resource in

relation to a phased strategy of national development. Such a strategy takes into account fruitful utilisation of this population in both rural and urban sectors ensuring efficiency, productivity and balanced distribution of the labour force.

Other Resources

4.2.7 Human settlement planning has also to consider availability of resources which are of economic value and are renewable or non-renewable. Although, India has adequate reserves of iron ore, manganese, and bauxite, yet it has shortage of non-ferrous metals like copper, and of petroleum which are of significance to human settlements. Programmes for survey, exploration and development of such resources have long been underway.

Energy, Transportation and Distribution

4.3.1 In devising policy framework for human settlements, it is important to foresee the implications of energy as a factor in the optimum utilisation of the resources and in facilitating mobility of the people, goods etc. It is also important to consider institutional mechanisms for optimal distribution of socio-economic benefits accruing from national development to a large number of people.

Energy

4.3.2 According to one of the estimates made for the consumption of conventional fuels in India the total commercial energy for the year 1990-91 is expected to be of the order of 339 million tonnes of coal, 77.5 million tonnes of oil and oil products and 385 billion kilowatt-hours of electricity. The consumption of non-commercial fuels is expected to be of the order of 122 million tonnes of fire-wood and charcoal, 53 million tonnes of animal dung cakes and nearly 46 million tonnes of agricultural and vegetable wastes.

4.3.3 The consumption of non-commercial fuel is at present high and is not likely to change drastically in the

near future. This may have serious repercussions leading to ecological degradation and depletion of forest resources. As such, consideration has to be given for the propagation of the use of biogas and for planting of the 'social forests' to continuously replenish the supply of fire-wood. In addition, incentives may be needed for encouraging mass transportation in urban settlements to conserve energy.

4.3.4 Non-conventional sources of energy like solar, geothermal etc. and renewable sources like hydro and nuclear from which electricity can be generated may have to be considered in future as sources of supplementing energy generation. Consideration is already under way for the development of such sources of energy and for their utilisation. In evolving such policies, environmental aspects like pollution and disposal of wastes need consideration.

Transportation System

4.3.5 Mobility becomes important in view of the uneven distribution of resources in the country. According to one of the studies, the passenger traffic by roads and by rail is expected to be doubled by the end of the century. Over one half of the additional traffic is estimated to be handled by road transportation. Consideration has also to be given to transportation hardware—such as production of trucks, buses, cars, railway-wagons, locomotives etc. and the needed quantum of infra-structure like roads, railway networks etc. in the forthcoming years. As such, for a better distribution of the social and economic benefits of development a co-ordinated distribution and transportation system needs to be integrated with policies for human settlements.

Distribution System

4.3.6 Human settlements represent various magnitudes of population. The distribution system in India works through a number of government, semi-government,

voluntary organisations and private agencies. The distribution and collection of goods and services is provided through a framework of institutional mechanisms such as political, administrative, fiscal etc.— as well as through physical movement. At the national level, broad policies for commodities like food, fertilizers, minerals and fuels are formulated, while their management, procurement and distribution is handled by the State governments, Block development authorities and Local authorities. In certain areas co-operative societies and private agencies undertake similar functions. In developing efficient distribution networks, considerations have to be given to streamlining the present institutions with incentives for the weaker sections of the society.

4.4.1 In the process of development, India has evolved several policies relating directly or indirectly to the quality of life in human settlements. Today, efforts are being made to evolve a coherent policy framework which takes into account the existing policies, resolves conflicts between them, [if any], and considers ways and means to bridge the gap at various levels. In evolving such a framework, the diversity of conditions in the country has to be considered. This framework would envisage certain amount of autonomy of action to accommodate regional variation and provide flexibility for being adopted in the varying situations. Considerations that may govern future actions would include:—

(a) human settlements represent society's cultural, technological as well as political aspirations. The process of development should subserve human needs such as biological, social, economic and environmental—without adversely affecting ecological balance,

(b) human settlements, both rural and urban are

Policy framework for Human Settlements

centres of resource generation, distribution and consumption. The symbiotic relationship between these types of settlements needs enhancement for ensuring better quality of life for the people, and

- (c) economic development has to be pursued without alienating people from their life style or nature from its recuperative qualities.

4.4.2 The present trends indicate that the process of urbanisation is irreversible. To a large extent, it is a condition for and a consequence of rapid economic development and industrialisation. It may be desirable to deal with the problems of human settlements both urban and rural and their environmental requirements simultaneously. It would require that programmes and policies for agricultural and rural development are well co-ordinated with those for industrialisation and urbanisation ensuring balanced development in the holistic sense. Desirable objectives for such an integrated planning approach include:

- (a) minimisation of the existing differentials in the standard of living and services between rural and urban settlements, to make each equally attractive from the social, economic and environmental point of view;
- (b) minimising of the process of migration by establishing better linkages between rural and urban areas and by developing service centres and growth centres to provide adequate distribution of goods and services;
- (c) co-relating investment mechanism with environmental programmes to arrive at criteria for location of human settlements;
- (d) providing incentives for the development of the

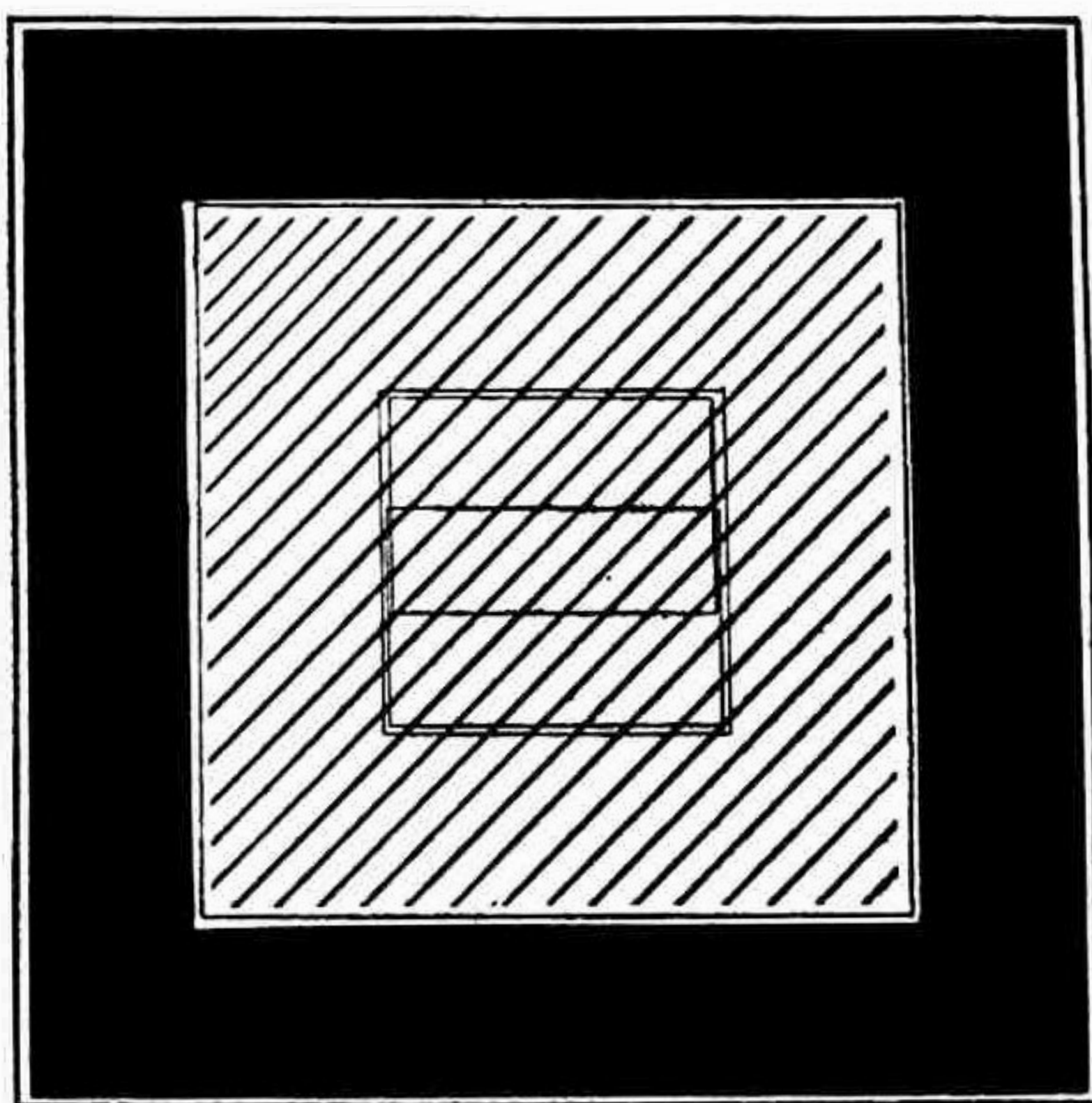
less privileged sections of the society and for the under-developed areas to provide greater economic opportunities and social justice; and

- (e) identifying criteria for appropriate distribution of a large population in a scientific manner for optimum utilisation of existing resources.

4.4.3 Planning of human settlements transcend functional allocation of activities and, encompasses social and cultural dimensions, natural environment and controlling mechanisms such as legislation and forms of government to control human behaviour. At the same time it establishes harmonious relationship amongst various components of human settlements. In evolving such an intricate framework of human settlement planning, it is essential to apply scientific systems which will ensure validity of the organism for future. Considerations that may require attention in formulating planning strategy may include:

- (a) Structuring of the development process at the national, regional and local level consistent with the demographic and environmental goals.
- (b) Recognition that planning of physical environment of the settlement is important for the planning of investment and that both should be undertaken as a part of a single planning process to enhance the quality of life.
- (c) Ensuring the availability of adequate shelter (places of living, working, education, health etc.) and its accessibility to the infrastructure— (transportation; energy grids, communication etc.); and to services (hygienic water supply, sewerage drainage etc.) through proper management (institutional frameworks, financial mechanisms etc.) with built-in incentives for the less privileged sections of the society.

National Level



NATIONAL LEVEL
• population distribution policy.

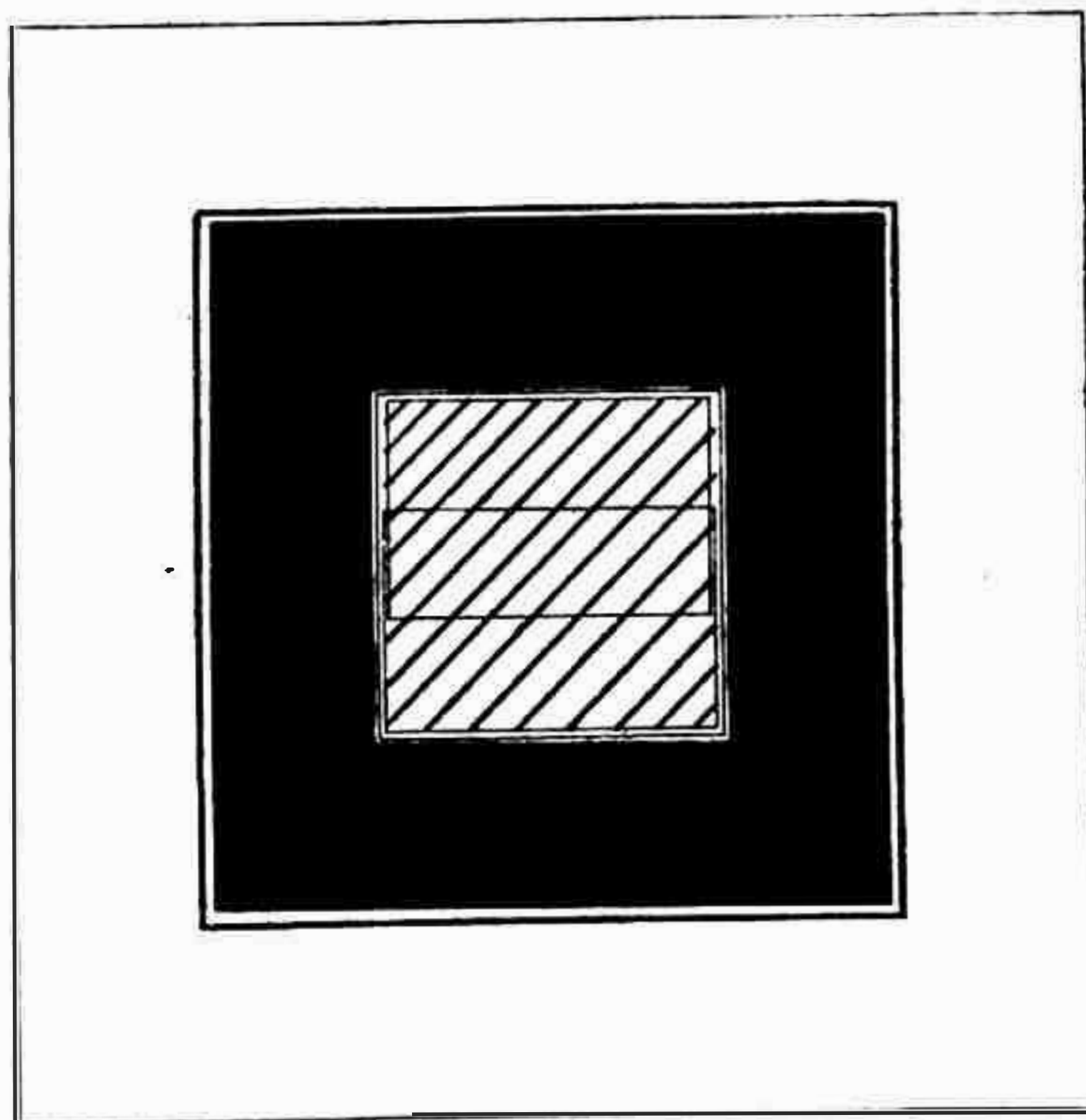
Regional Level

4.5.1 In addition to the current family planning programme and the national commitment to control the growth of population, there is some thinking on the future distribution pattern of population. It would provide for a rationale of population distribution within which regional or sub-regional policies for human settlements could be organised. At the National Level, the Population Distribution Policy will provide guidelines for optimum utilisation of resources, energy generation and its use in relation to distribution mechanisms and transportation networks. It will also define areas of action at the Regional/State level within which each state will be able to organise its actions. Considerations that may govern formulation of the Population Distribution Policy at the National Level include:

- (a) **RESOURCE POLICY**—for optimum utilisation and conservation of natural and man-made resources;
- (b) **ENERGY POLICY**—for optimum utilisation of conventional as well as non-conventional energy sources which may be renewable or non-renewable;
- (c) **CO-ORDINATED POLICY FOR INFRASTRUCTURE**—for optimising efficiency of the distribution system in conjunction with transportation and communication networks to provide equitable socio-economic benefits to the population.

4.5.2 At the regional or state level, policy framework for human settlement should set out guidelines for the “location of human settlements” in relation to the National Population Distribution Policy. It should

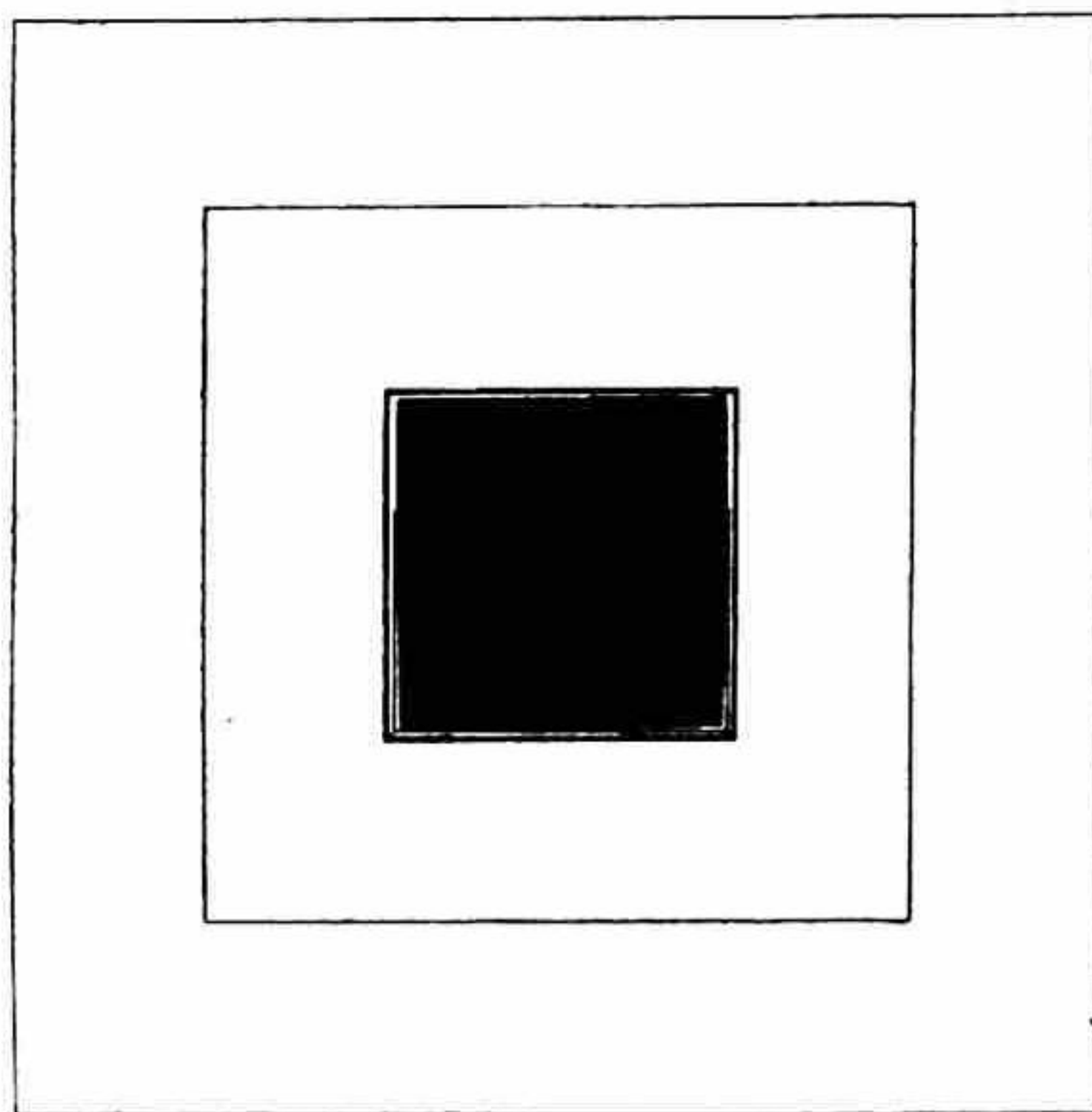
outline broad guidelines for locating economic activities, such as production centres, marketing centres etc. based on the availability of resources and infrastructure. The policy framework at the state level, should identify (a) mechanism for implementation of policies and special programmes (if any); (b) concept of development with adequate flexibility for interaction, adaptability and adjustment; (c) priority areas for immediate action—such as overcrowded cities, barren land etc; and (d) areas of inter-lap where action by the centre is needed to subserve the national interest. Such a framework will require organisation of appropriate policies for land utilisation; for adequate provision of infrastructure and services and for optimum conservation of resources. Considerations that may govern action at the regional or state level may include:—



STATE / REGIONAL LEVEL
• settlement location policy.

- (a) POLICY FOR LAND—for its consolidation, reclamation, appropriate distribution, ownership and tenure—and for LAND USE—such as agriculture, forests, extractive industries, major industries and for human settlement,
- (b) Co-ordinated policy for INFRASTRUCTURE—for transportation, communication, energy utilisation inter-related with the distribution mechanisms,
- (c) Integrated policy for SERVICES—like hygienic water supply, proper drainage, sewerage etc. and for social services like education, health, recreation etc.
- (d) Policy for CONSERVATION OF NATURAL RESOURCES, cultural heritage and places of scenic beauty—for PROTECTION of air, water and land from pollution.

Local Level



LOCAL LEVEL
• structure plans
for rural & urban
settlements.

4.5.3 Under the present system, action at local level is taken at block development level for rural settlements and at municipal level for towns and cities. However, it is being felt that it is important to organise the development of areas in-between. These areas could be developed service centres or growth centres depending upon the policies adopted at the sub-regional level or local level. At the block development level, programmes for development shall be structured as a part of the regional level policy. The structural plan shall outline policies, priority programmes and institutional mechanism for implementation and feed back. It is to be supplemented by a series of studies indicating areas of immediate action for conservation, preservation and development of resources. This may also indicate measures for ensuring efficient and functional linkages between socio-economic development and natural eco-system.

4.5.4 For urban areas, actions at the local level need to adopt the metropolitan regional planning approach as a part of the regional policy framework. "Structural Plan" shall organise types of activities and intensity of activities in relation to the environment within the socio-economic framework. It may involve considerations of energy conserving systems, recycling techniques for the utilisation of wastes and efficient intra-urban mass transportation system. Action programmes for optimum utilisation of existing infrastructure, services and land shall require scientific techniques for appropriate management of available resources. Considerations for urban land policy may include further thinking on ownership, taxation, type of use and intensity of use of land.

4.5.5 Specific actions at Local Level may include consideration of:—

- (a) POLICY FOR SHELTER—including places of work, living and for social services such as health and education.**
- (b) POLICY FOR INFRA-STRUCTURE—including types of transportation and its routing, road and rail networks, energy grids and communication system,**
- (c) POLICY FOR SERVICES—including availability of hygienic water supply, drainage, sewerage, waste disposal and its possible utilisation,**
- (d) POLICY FOR MANAGEMENT—including streamlining and reinforcing of existing institutional framework and legislation for optimising the distribution of socio-economic benefits to optimum number of people,**
- (e) POLICY FOR THE PROTECTION OF ENVIRONMENT—including conservation, preservation and utilisation of areas of cultural heritage, scenic beauty, environmental aesthetics and measures for pollution abatement and control.**

Epilogue

4.6.1 In India, human settlements vary in age from 2000 years and more to 20 years and less; in population size from over 9 million to isolated homesteads; and in densities from more than 3000 persons per hectare to several hectares per person. The cultural diversity, the concentration of resources in certain areas, the historical background, and the size of the population make any situation difficult to handle in a coherent manner. A whole generation of technical people, administrators and decision makers has exerted in the last 30 years. India has realised certain diversities, discrepancies and differentials between the developing and developed societies. It is being recognised that to provide greater social justice and economic opportunities, India needs to evolve a coherent policy framework for human settlements which will consider magnitude of requirements, availability of resources and mechanisms of distribution without affecting the natural environment.

4.6.2 Since Independence in 1947, several new cities have been built, old cities have been extended and villages provided with better irrigation facilities, communication systems and needed technological inputs. A large number of persons have been made literate, expectation of life has increased and the economy of the individual improved. The food production has increased from 51 million tonnes in 1951 to about 110 million tonnes in 1973-74, but the net per capita availability of food per day has only increased from 395 grams in 1951 to 467 grams in 1971. While percentage increase in national income has been nearly 49 per cent during 1961-74, the increase in per capita income was only 11 per cent. It is being realised that a major portion of the increase is neutralised by the population growth which has largely occurred because of reduction in mortality rate. The population growth has to be controlled

through further propagation and adoption of family planning programme in addition to improving health conditions of the people.

4.6.3 Even though the problems, may appear to be formidable, one feels optimistic in view of the efforts made in the past and the lessons learnt. India does not envisage that all the problems in future will be solved by the end of the century but it does feel that the country should be able to provide a better quality of life to its people in both rural as well as in urban settlements. As it goes along the road of development, it finds many gaps in information and in understanding of the character and pattern of growth of human settlements. Effort has to be made in the organisation of its investment in a more efficient and integrated manner to provide a basis for administrative and political decisions. India recognises that research needs to be promoted, better training has to be provided and more efficient mechanism of implementation has to be evolved, but in this process it would like to feel confident by arriving at a sound framework of policies based upon scientific knowledge and technological thinking "without alienating people from their heritage and without de-spoiling nature of its beauty, freshness and purity so essential to our lives."

