

LOCATION OF INDUSTRIES IN INDIA

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FOREWORD

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FOREWORD

It is a pleasure and pride to honour the request of Dr T. R. Sharma to contribute a Foreword to this original and systematic work on the location, planning and redistribution of industries in India—a research project for the doctorate undertaken and completed under my supervision at the University of Lucknow. Most advanced countries in the world established their industries in the nineteenth century, haphazardly with slight reference to the patterns of resource and transport or to the social implications of industrialism. In countries intersected by artificial political boundaries and dominated by notions of nationalism and empire the rapid tempo of industrial development and mass production has been the root cause of industrial offensives, conflicts and wars. In Europe the boundaries of states cross natural industrial regions forcing upon them arbitrary industrial locations and economic policies that have brought them into conflict with one another. The Smithian principle of international division of labour took account principally of the natural resources, capital and markets of the leading industrial nations of the world and a regime of free trade and enterprise in an expansive world economy. Its world-wide application was responsible for mono culture, soil exhaustion and proleterization of the raw-material countries and insecure and lop-sided economic development of the advanced industrial countries with their chronic problems of unemployment and slum-life and social deterioration.

The orthodox theory of freedom of enterprise and *laissez faire* and global division of labour is now superseded by Weber's theory of industrial location as the basis of economic planning. Professor Sharma has, with much insight and objectivity used this theory in discussing the present uneven distribution of industries in India and their planned location. One by one he has taken the major industries of the country and with a vast wealth of statistics and carefully drawn maps argued for their regionalization and proper redistribution in the economic plan of the future. The conditions of future orientation and development of textile industries, iron and steel, sugar, and leather are all carefully analysed, the limitation of their present distribution indicated and the opportunities for a long term

planning and co-ordination on an all-India basis clearly set forth. Perhaps the cotton and sugar industries are the worst instances in India of misplanned, pell-mell development which has got to be corrected in the very near future in the interests of national efficiency. There will be bound to be resistance on the part of vested interests but independent India will have to visualize a national economic plan in the comprehensive long-term interests of the people. In the future national economic planning the pattern of transport, formerly developed with a view largely towards foreign trade and short-term interest of foreign investors will have to be re-oriented to the development of industries in the interior of the country, while canalization and inland navigation, so long neglected will aid regionalization and decentralization of industries.

There is no doubt that in a predominantly agricultural economy as that of India even under the regime of planned industrialization widely dispersed agricultural industries processing the raw materials of the fields will play a much larger role as in the small agricultural countries in Europe, than is at present realized. It must be remembered that about 85 per cent of the workers engaged in industrial occupations are now employed in small and cottage industries. This percentage will hardly be altered in spite of our coming industrial expansion. On the other hand the great industrial problem will be to introduce labour saving machinery and implements into small-scale and cottage industries and organize them into industrial co-operatives. The success of the Chinese Indusco should be an eye-opener for the industrial planner in India.

The possibilities of rural industrialization in India have greatly increased in recent years due to the development of certain multi-purpose regional projects for expanding irrigation, power development and navigation in the major river basins. The T. V. A. schemes hold indeed the key for planning and development in large parts of India. Some indeed are already on the way. In association with these regional electric grids comprising both hydel and thermal plants and power as well as irrigation-cum-power objectives will cover by their network the whole of India. Thus electricity will be the saviour of agriculture which is sub-marginal occupation of the considerable proportion of Indian workers and of rural industries so unhappily and helplessly facing their doom in the present epoch of unplanned industrialism. In planned industrialization, however, the

scope of industries in rural areas will be much expanded and diversified and there will be a flexible adaptation and integration of these to the structure of large-scale industries so that the latter will aid and not weed out the former. It is only this reorganization of relations between the big and small establishments in the industrial structure that can restore the balance between agriculture and industry in the country and bridge the yawning gulf between rural backwardness and lopsided, parasitical, urban growth. The interpenetration between agriculture and industry and between large- and small-scale industry provides promise of the quickest increase of national income and the adaptation of industrial development to the social pattern of an agricultural civilization.

These are wider issues of industrial planning in an agricultural country like ours where 'rurbanisation' or 'agro-industry' is indeed the principal means of correcting the present uneven distribution of population, industry and wealth and the disorder in technology that now spells social chaos and economic depression for the rural areas. But the more immediate issue of industrial planning is the development of a strong central authority that will control, redistribute and co-ordinate industries. In the coming Indian constitution that is now being shaped there is the greatest danger that the centre would be too weak for industrial planning. A weak and loose federation cannot lead India towards her industrial advance without which the present burden of poverty and rural depression cannot be lifted. This is the most significant lesson of Professor Sharma's important work that must be seriously considered by economists and politicians alike in the country's present political transition. If India becomes a first class industrial power in Asia the core of this development will be represented by the mineral region covering parts of Bengal, Bihar and the C. P. in which the heavy engineering, mechanic, machine-tool and chemical industries will be located. But this would introduce planned control and co-ordination of the basic industries by a strong Centre. The autonomy of the different provinces and the states should not be incompatible with large-scale planning from the Centre on the basis of regional groupings that overstep present artificial boundaries.

Regional planning in the major river basins and industrial areas of India should form the basis of all-India planning and the work of inter-regional and inter-provincial economic councils should

be dovetailed into central economic administration. Indian statesmen of the future must fully acquaint themselves with the geographical natural regions if they are to build for both political stability and industrial power and progress. Political freedom in the absence of industrial power will make India the magnet of foreign invasions and infiltrations. But freedom utilized for economic planning and increase of industrial power will make India the strongest bastion of peace in Asia.

Gwalior,
Janmashtami }
1946

RADHAKAMAL MUKERJEE

PREFACE

India is completing her first century of modern industrialization. The changed circumstances of the world after the Second World War (1939-1945) seem to offer her new avenues and opportunities of improving her economic organization. The political changes to come are sure to enable her to shape the economic and industrial destiny of her people according to their wishes.

Even before this war, certain technical changes in the generation and use of power and transport were already depriving the industrial concentrations of some of their advantages. The war has clearly demonstrated the advantages of industrial dispersion over industrial concentration from the point of view of military strategy. The concensus of opinion now appears to be in favour of decentralized industries. The question of the location and regional distribution of industries is a very vital one, as it affects not only the means of livelihood and well-being of a nation but rather the entire question of the distribution of the total population of a country. The countries of the world in general consist of industrial and non-industrial areas; the former are densely populated while the latter have sparse population. On account of this uneven distribution of industries there are prosperous areas co-existent with depressed areas in the same country.

In highly industrialized countries like England the major part of the population is urban while in India the majority of the people live in rural areas. From the point of view of proper and scientific distribution of population, both of these conditions are undesirable. A better distribution and decentralization of industry and a better distribution of population between rural and urban areas is very desirable. In India, particularly, we have to bring about 'rurbanization' by fusing the rural and urban occupations which can be achieved only by a well-planned dispersal and location of industries on a regional basis.

There is another consideration also on account of which dispersal of industries is desirable. In India there is no liaison between agriculture and industry up to this time as it exists in countries like Holland, Belgium and Russia. Agriculture as an industry and

occupation uses little produced by the industries, as no machinery or artificial and chemical manure is generally used in this country. On the other hand, the raw materials provided by agriculture are generally sent to far-off places (generally to foreign countries) for being processed and turned into useful articles. If this undesirable state of affairs is to disappear the industry supplying agricultural implements and tools, manures, etc, or producing flour, butter, fabrics, etc. must become *local*. This change requires dispersal and movement of industries from overgrown coastal and central towns into the heart of the agricultural regions. Thus the need for decentralization and dispersion of industries is not dictated by the flying fortress, the flying bomb and the atom bomb merely but is also made imperative by social and economic problems like the clearance of industrial slums, development of depressed regions, better distribution of population and the general welfare of the people as a whole.

An attempt has been made in this work to indicate the possibilities of the establishment of this new type of industrial order in India with decentralized and dispersed industrial units. I shall regard my labour fully rewarded if this work can induce people to think on similar lines. I am very much indebted to various industrialists and Government officials all over India for the help and co-operation I received from them in the course of my investigations. More particularly, however, I wish to express my thankfulness to the following :

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INTRODUCTION

The idea of regional distribution of industries and of population has been stressed in the industrial countries of the West for some time. During the present war especially, it has attracted still greater attention on account of the strategical dangers facing the great industrial centres. In England the question of regional distribution of industries has been examined by the Royal Commission on the Distribution of the Industrial Population of Great Britain and by the Regional Development and Location of Industry groups of P. E. P. The Commission unanimously accepted that the objective of national economic planning should be the encouragement of a reasonable balance of industrial development, so far as possible, throughout the various divisions or regions of Great Britain, coupled with approximate diversification of industry in each division or region throughout the country. The Report of the Political and Economic Planning (P. E. P.) group has also emphasized the need for balanced regional development. In the U. S. A. the question of regional planning has been very thoroughly examined by the National Resources Planning Board. In 1933 President Roosevelt created the Tennessee Valley Authority to serve as a model of the process of developing backward regions and to lead, as he said, to 'national planning for a complete river watershed involving many states and future lives and welfare of millions'. The experiment was a complete success and in 1937 Roosevelt proposed the creation of seven other public bodies similar to the T. V. A. for other regions of the U. S. A.; but on account of the opposition of the utility companies and the propaganda carried on against the idea by powerful vested interests led by Wendell L. Wilkie, the American Congress failed to take any action on his recommendation.

Regional planning in the case of Germany has been mostly industrial planning. In certain other countries, particularly in France and Sweden, before the last war it sought to harmonize the interests of large industrial cities, satellite towns, country towns and villages in a common scheme in which each has its place. In the U. S. S. R. the principle has, however, been applied

on a still wider basis. Industrial development in Soviet Russia has been carried out in such a way that the distinction between agricultural and industrial regions has been obliterated and backward villages and congested industrial centres have practically ceased to exist. Dr Radhakamal Mukerjee is probably the first notable Indian writer to stress the co-ordination of regional town and village planning in this country; and in his general sociological treatment associates the present disorder in technology in India with the disorder also in man's relations with his environment and his social and institutional set-up. Speaking about the Soviet planning he observes that 'in Russia, regional planning began with the proper placing of industries and transportation for the nation. Cities are so located and developed that these utilize land to the best advantage and do not overstep an appropriate dimension. Stalingrad is a good example of regulation of the size of cities on the basis of social and industrial efficiency.' He suggests for India the adoption of an economic plan like that of Russia for offering differential advantages in favour of industries in the raw material and undeveloped economic regions losing sight neither of the programme of inter-regional distribution of labour and resources nor of the present economic unbalance and over-crowding in agriculture in the backward areas.¹

From the economic point of view Dr P. S. Lokanathan has given a brief and general account of the locational trends of the Indian industries in his book *Industrial Organization in India*. But so far no attempt has been made to examine the distribution of industries on regional lines. In theory the policy of the Government of India regarding reconstruction planning for the post-war period, as reflected in the statement of Sir Ardeshir Dalal, ex-Member of the Viceroy's Executive Council for Development and Planning, appears to be based on regionalization. Sir Ardeshir, in a statement to the press on September 14, 1944, said: 'The Government is keen on regionalization and dispersal of industries, as widely as possible, subject, of course, to the availability of natural resources.' The Reconstruction Committee of Council of the Government of India, in their second report on Reconstruction Planning also admit the shortcomings of industrial planning and

1. See Preface to Planning in *Economic Problems of Modern India*, Vol. 2 by Mukerjee & Dey.

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development according to artificial political boundaries.

But in practice whatever little is being done in respect of post-war industrial planning and development seems to be going on on the basis of existing political boundaries of provinces and states. Even in the Memorandum prepared by the Office of the Economic Adviser to the Government of India on the 'Location of Industry in India' to serve as a basis of discussion, scant regard has been paid to the regional idea. All the statistical data in various tables are placed haphazardly on the political basis of provinces and states without any attempt at regional grouping. Sometimes (as in the case of jute industry) the word 'region' has been applied indiscriminately to the territorial units of vastly different sizes such as the French Settlements and the entire province of Bengal.

This shows that we have not found it possible as yet to move beyond the narrow limits set up by political divisions even in the matter of planning for the future economic and industrial development of the country. The various provinces and states are planning for themselves within the limits set up by their political boundaries. (These boundaries of provinces and states are the results of certain historical events, like wars, conquests and treaties.) They are absolutely arbitrary and are not related to the distribution of natural resources in any way. In the majority of cases they stand in the way of better economic and industrial development of the country. Even in Europe where the different countries comprise compact blocks of territory the political boundaries have created many insoluble economic and industrial problems. The electrification of the Upper Rhine Valley and the mutual dependence of Lorraine, Luxemburg, the Saar Basin and the Ruhr Valley for raw materials, power resources, market and credit conditions, etc. furnish some examples of such problems.

In India the confusion created by the myriads of political units is perhaps without any parallel in the world. The country is not only divided between the British Indian provinces and the Indian states, but some of the important Indian states like Baroda are interspersed with British territory; the territories of some of the big states like Gwalior and Indore are not contiguous; the Deccan and the Gujerat states cut the province of Bombay virtually in three parts while the Sikh states cut the province of the Punjab at its

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narrowest part along the Sutlej-Bias line into two parts; the province of Orissa is interspersed with the states of Eastern India Agency; some of the states of the Western and Central India Agencies are smaller (from the revenue point of view) than the estates of some of the Taluqdars of Oudh; and the province of Ajmer is a mere speck in the centre of Rajputana states. This arrangement of political units is anything but conducive to efficient economic and industrial development of the country. 'Schemes of regional development, agricultural and industrial, such as afforestation, flood control, drainage, irrigation, horticulture, super-power, decentralization of industry and co-operative organization are as important for India's economic future as inter-provincial and inter-regional undertakings of transportation and communications.' Without inter-regional and inter-provincial co-operation no such projects are feasible.

These schemes cannot be carried out piecemeal by different authorities in different sections of the same region; nor are they within the orbit of financial resources of smaller political units. They can only be undertaken by a regional group of a number of political units or administrative provinces. On the other hand, Indian federalism presents its special problems of regionalism and co-ordination. 'In a vast and heterogeneous nation like India, regional geography and ecology are central facts, and the tasks of statesmanship consist in co-ordinating the divergent lines of development and special interests of different regions and sections and bringing them all together in a common economic policy. On the one hand, the economic diversity between the regions of the U. S. A., the U. S. S. R. and India is one of the strongest binders fostering a national unity operating through regional division of labour. On the other hand, federalism as a political experiment is bound to fail in the absence of economic interpenetration and right balancing of the interests of different regions, localities and sections.'³

Economic necessity is, in fact, compelling India to move beyond the artificial political boundaries of the provinces and states to take concerted action for the development of economic resources and industries. At times, the different provincial and state authorities have co-operated in certain limited spheres. The irrigation project in the valley of the Sutlej river was financed jointly by the provincial

2. R. K. Mukerjee: *Man and His Habitation*, p. 298.

3. R. K. Mukerjee: *Social Ecology*, pp. 313-14.

government of the Punjab and the state governments of Bahawalpur and Bikaner; a joint sugar commission set up by the provincial governments of the U. P. and Bihar is controlling the sugar industry of the two provinces; the governments of the U. P. and the Punjab have agreed to develop the hydro-electric power on the Tons and Giri rivers jointly; the governments of the Hyderabad State and Madras have decided to finance jointly the construction of an irrigation-cum-power project at Malapuram on the river Tungabhadra; and there is also the possibility of a similar project being financed jointly by the governments of Bihar and Bengal in the valley of the river Damodar. It is remarkable that in all the above mentioned cases, with one single exception of the sugar industry of the U. P. and Bihar, the field of co-operative action has been provided by a river valley unit. The time has now come when the political units of the whole country should be grouped together in a number of suitable economic regions, and regional councils representing various interests should be set up to explore the possibilities of industrialization by undertaking extensive surveys of natural resources and to assist the industrial development of the country on regional lines. The broad economic regions may be further sub-divided, preferably on the basis of river valleys and mineral areas for the purposes of efficient survey and development.

A scheme, that might ultimately serve as a model of development on these lines for the whole of India, appears likely to be taken in hand. A multi-purpose project for developing the valley of the river Sone was also discussed at Delhi, at a meeting between the representatives of the Central Government and the Governments of the U. P., the C. P. and Bihar and certain Indian state representatives. The project is intended to utilize the waters of the river Sone for increasing irrigation, development of power, navigation and flood control. Irrigation engineers and other experts have visualized the possibility of installing electric plant for providing energy over an area of 175 to 250 sq. miles.

It is a modest scheme when compared with the Tennessee Valley project of the U. S. A., which covers an area of about 40,000 sq. miles. But it will be very important as a novel experiment, really the first of its kind in India, to be extended to other parts of the country, if found successful. In the development of river valleys on these lines, there exists a natural cycle of causes and effects. To obtain

facilities of cheap electric power, navigation and flood control means dams and reservoirs. To keep reservoirs deep and effective means erosion control, which calls for forest management. And the forest industries can be planned in suitable localities with electric power generated at the dams and reservoirs. To the industries in the plains it means the supply of cheap electric power and transportation; to the farmer it means the benefit of rural electrification; and to the people living in the deltas of such rivers it means freedom from the havoc to life and property wrought periodically by floods.

There is an organic inter-connexion between forests in the mountains, pastures on the mountain slopes and agriculture in the plains. Forestry in the hills, pasture farming in poor and cheap lands and scientific agriculture in fertile plains help one another. Full development of forest or mineral zones, stock raising zones, cereal, raw produce and agricultural zones, requires the establishment of varied types of industries to utilize the diverse resources of these zones by treating them all as parts of a single unified broad region for planning and development.

This kind of development of industries (including agriculture) on regional lines is a real departure from the nineteenth century destructive utilization of natural resources to the present-day economy of conservation. According to the nineteenth century conception economic balance was to be achieved on a world-wide basis through an international division of labour. Certain countries like England, rich in minerals like coal and iron, utilized their resources for the mass production of textiles, cutlery, and other machine made goods, while others like India devoted themselves to the raising of food crops like wheat and the production of raw materials like cotton, jute and oil-seeds and served as consumers' markets for the products of industrial countries obtained in return for their agricultural surplus. The same process was repeated on a smaller scale between the industrial and agricultural regions of different countries. This kind of economy is destructive in the sense that it leads to the exhaustion of the mineral wealth like coal or petroleum in the manufacturing country and the impoverishment of the land in the agricultural country on account of excessive exploitation of the soil for the purpose of raising cash crops and failure to return to the soil the necessary ingredients of plant food. The result of the process is misery of the people both in mining and

agricultural regions.

Regional economy seeks the goal of conservation in a reduction of the rate of disappearance or consumption of exhaustible resources and a corresponding increase in the unused surplus left at the end of a period for the purpose of benefiting posterity. The social aims of regional planning are to arrest the concentration of population and industry in a few super cities or metropolises and the growth of agglomerations or 'conurbations', i. e. the grouping of settlements which are attached to one another and are oriented to one big city or metropolis; to create independent little towns where a further increase of population in the region can be absorbed and people may live more harmoniously with nature and industry. Regionalism thus aims at a continuity of the vast current of resources, energies and services for the permanence of the community through conservation and implementation, not through exploitation, and the transformation of these resources, energies and services into higher values furnishing a permanent dynamics for human culture free from the artificiality and emptiness of the technological society. It establishes an equilibrium between the people and the heritage of the region.⁴

But the regional distribution and development of industrial and economic activity does not and cannot aim at anything like self-sufficiency. No region is rich enough or varied enough to supply all the requirements of all the industries necessary for modern civilized existence. The regional distribution of industries only aims at a more even development of the local resources of the country as a whole. Under this type of industrial distribution the industries would be varied and balanced locally in order to secure a varied and balanced life in different regions of the country.

The regional distribution of industries, as it does not aim at self-sufficiency of different regions or countries, cannot lead to stoppage or shrinkage of inter-regional or international trade. The surplus produce of every region will flow to the neighbouring regions and even beyond the national frontiers. The regional distribution will simply bring about a change in the composition of the streams of inter-regional or international trade. The pure streams of manufactured goods from industrial regions and of raw materials from agricultural regions will be replaced by mixed

4. R. K. Mukerjee: *Social Ecology*, pp. 316-18.

streams of manufactured goods and raw materials both ways.

The economic resources of India are vast and varied. She is, next to the U.S.A., the biggest producer of raw cotton, with an annual estimated production of seventy lakh bales (400 lbs.). She enjoys a monopoly of jute, the world's cheapest packing cloth, of which she produces ninety lakh bales per annum. Her supplies of wool are abundant. India today is perhaps the largest producer of oil-seeds. She ranks first among the world's tobacco producers. She produces the largest amount of cattle hides. Her forest resources are ample, covering an area equal to one-fifth of her cultivated area. She is equally well endowed with mineral resources. The total coal reserves are estimated at 600,000 lakh tons. Next only to the U.S.A. and France, India has the world's largest reserves of iron ore of the richest kind. She has the biggest reserves of manganese ore and three-quarters of the world's supply of mica. She is the world's main source of ilmenite, monazite and zircon. Chromium is available in sufficient quantities and there is no serious deficiency of tin, lead, copper and zinc. She is rich in aluminium ores and good reserves of sulphur have been discovered in Baluchistan. She is poorly equipped with petrol, but there is vast scope for the production of power alcohol from molasses and of producer gas from coal. Besides this her water power resources are only second to the U.S.A. With a few exceptions these resources are well distributed. What is really required to make India prosperous and industrially great is a proper utilization of these resources by developing industries of a varied nature, on a regional basis, throughout the country.

In the present work an attempt has been made to examine the locational trends and the regional distribution of six selected important industries of India. The first nine Chapters (with the exception of Chapter VI) have been devoted to these major industries. The earlier theoretical portions of all these chapters are based on Alfred Weber's theory of Industrial Location, as developed further by B. Ohlin in his treatise, *Inter-regional and International Trade*. In the later parts, after considering the existing distribution of these industries in different regions, suggestions have been made regarding the extension of these industries into other regions, taking into account natural resources, markets and other locational factors. Up to the time of the World War of

1914-18 industrial activity in India was mainly concentrated in the coastal regions around Calcutta and Bombay. But since then, on account of the gradual economic development of the regions of the interior, a considerable distribution of the industries into other regions has been taking place. As yet there is enough scope for encouraging the dispersal of industries still further in the post-war period.

With the exception of sugar and jute, the distribution of the remaining industries has been considered on the basis of five broad regions: (1) Western India, (2) Rajputana and C. I., (3) C. P. and Hyderabad, (4) Southern India and (5) Northern India. A certain amount of flexibility has been observed including the areas under these regions. The sugar industry has been treated on a slightly different basis mainly because it is closely related to agriculture and is dependent for its success, to a large extent, upon the natural environment. The climatic conditions in the tropical (southern) and sub-tropical (northern) regions of India affecting the growth and development of sugar-cane are widely different and give rise to different problems. On account of these differences the distribution of the industry has been discussed on the basis of two regions—Southern India (tropical) and Northern India (sub-tropical). The cultivation of the thick and the thin varieties of cane in Southern and Northern India respectively has also been partly responsible for the division of the country into these two regions. So far as the jute industry is concerned, it is mainly confined to the province of Bengal.

In arranging the distribution of industries on a regional basis a very great difficulty has been experienced on account of the lack, or unsuitability, of the statistical data. The Government of India while publishing the figures of production of certain selected industries give the production of all the states as one item in spite of the fact that some of them like Mysore are now industrially more advanced than the British Indian provinces of Assam or the N.-W. F. P.

Means of communication, especially the railways with their freight policies, have profoundly influenced the distribution and location of industries and have been mainly responsible for the congestion of industries in the port towns. These influences, along with the post-war development plans, have been examined in

Chapter X. The part played by skilled labour in assisting the localization of different industries in important centres has been discussed in Chapter XI. At the end of these chapters, constructive suggestions have been made for remedying the shortcomings.

In the rural areas of India, agriculture is the mainstay of the people and on account of the lack of subsidiary occupations the income of the rural dwellers is very low. The gap between the incomes of the inhabitants of rural and urban areas can be narrowed down by the extension of industrial activity into the rural areas of the country. In western countries, as pointed out earlier, the distinction between the agricultural and industrial regions is fast disappearing. While discussing this matter Prof. J. Russell Smith has observed: 'Perhaps the regional specialization of manufacture, like the regional specialization of agriculture has gone too far. There are signs that it has. We may yet have a renewal of manufacture for local needs as we are already having of agriculture for local needs. Two comparatively new factors make this possible. One is the wide distribution of electric power in town, village and home.....The second factor is standardization. These two factors make it possible to manufacture many small things in small villages, possibly even in farm homes. It may become easier to transport man's raw materials and his produce than his food. It is possible that we are at the beginning of an era of partial redistribution of manufacturing over the land where food production and climate and commercial access are good.'

In India also there is a great possibility of the extension of industrial activity into rural areas as a result of post-war hydro-electric development for providing power to these areas. The prospects of electric power development and rural industrialization have been discussed in Chapter XII. The earlier part of this chapter has been devoted to an examination of the possibilities of the establishment of regional electric power grids. It has been shown that the establishment of five regional grids and at least two inter-connected systems is a distinct possibility. In the later part of the chapter a number of industries, falling mainly into three groups—(1) Textiles, (2) Light metals, and (3) the processing of agricultural produce—have been suggested as being suitable for establishment in rural areas.

It is expected that these industries, when established in different

regions, will give rise to a number of towns of a moderate size, which will draw off the surplus population of the rural areas and will provide the necessary centres for the extension of banking, insurance, education and medical facilities, and certain amenities of social life such as reading-rooms, libraries, cinemas, etc. Such a change is likely to reduce the unusually high proportion of rural population and to bring about a better social structure.

Industrialization in India has not gone very far and the number of large industrial cities which give rise to problems such as those pertaining to rebuilding, slum-clearance and the restricting of their further growth, may not be more than a dozen. But the distribution of industrial activity in the different regions of India is extremely uneven, and the distribution of population between agriculture and industry is equally uneven. These disparities give rise to a number of social, economic and other problems. The last chapter has been devoted to a discussion of the hygienic, social, economic and strategic dangers and disadvantages arising out of the present uneven regional distribution of industries in India. The problems of stabilization of war industries and of the location and distribution of basic and light consumers' goods industries likely to be established in the post-war period have also been taken into consideration. As a solution of all these difficulties and problems, the necessity of a planned redistribution of industries on regional lines under the guidance of a Central Planning Authority has been emphasized. It is possible for India to avoid the evils of Western industrialization by planning her future industrial programme on regional lines.

In spite of the limited nature of the enquiry, confined to six important industries, the wide field of investigation extending nearly over the whole of India presented many difficulties. The suspension of certain important statistical publications, denial for reasons of security of information regarding the production of certain industries like iron and steel, and of certain new schemes like the hydro-electric projects, and the withholding from publication by the Government of certain important documents like the reports of the Grady Mission, the Handloom Fact Finding Enquiry Committee, the Committee of Power Engineers, etc. created many obstacles.

Despite these difficulties and obstacles an attempt has been

made to present a clear picture of the existing distribution of the industries, selected for study, in the various regions of the country; the shortcomings of such distribution have been pointed out and remedies suggested. It is hoped that the work will serve a useful purpose as a basis for further investigations regarding the regional distribution of other industries.