PART I
CHAPTER ONE. PLANNING AND INDUSTRIAL ESTATES IN INDIA

I. DEFINITION OF INDUSTRIAL ESTATE

The concept of industrial estate is a recent addition to the list of institutional techniques that have been applied more or less successfully to the basic problems of initiating and sustaining the development of small and medium scale industry and creating new industrial centres or fostering development in regions which would lag behind if left to themselves. It belongs properly to a new branch of technology - "the social technology of development" - which can be applied to public administration, economic development, planning and management of enterprises, etc.

Industrial estate introduces a new method of organising, housing and servicing industry. In a broad sense, the term industrial estate refers to a developed plot of land which according to a comprehensive planning and zoning of area facilitates the bunched development of an industrial community. William Bredo defines an industrial estate as "a tract of land which is subdivided and developed according to a comprehensive plan for the use of a community of industrial enterprises." An estate provides for installation of utilities and access to transportation. It may provide factory buildings or worksheds on lease or sale; and furnish other facilities and services. Experience in both developed and underdeveloped countries reveals that either private groups or

or Governmental bodies can pioneer an industrial estate, occupy a tract of land, develop it, and create an industrial atmosphere in the area with the provisions of water, electricity, transport facilities, marketing of goods, etc. Afterwards entrepreneurs are invited to set up their industries within the estate where plots are offered on the basis of outright sale or lease or hire-purchase. Sometimes the estate authorities provide ready-built factory accommodation also. Besides housing factories, an industrial estate makes arrangements for accommodating banks, post offices, telephone exchanges, insurance offices, employment exchanges and also for some social services such as community canteens, shops, dispensaries, clubs and recreation facilities and reading rooms, etc.

In physical terms, therefore, an industrial estate may be defined as an improved tract of land - large enough in area to provide sufficient economies of scale - accommodating a cluster of factories owned and managed by separate individuals. Economically, it represents an attempt to provide basic facilities, such as good factory accommodation and certain common facilities to small industrialists, who, otherwise, will not individually be able to secure these facilities at reasonable prices. In sociological terms, an industrial estate, by bringing together people engaged in the same or similar types of economic activity, having to deal with common problems and aiming at common objectives, may be expected to develop a community of interest among those people and promote habits of co-operation and pooling of resources.

The term industrial estate, however, is a large genus, of which there are a variety of species. In
American usage, we get the connotative terms "Organised Industrial Districts", "Industrial Parks" and "Industrial Tracts". An 'Organised Industrial District' or an 'Industrial Park' conforms more or less to the description of an industrial estate given above and both of them are synonymous, 'Industrial Park' possessing some park-like character. At the Dartmouth College Conference on Industrial Parks, an industrial park was defined as "an industrial district with the characteristics of openness (or low density occupancy) plus a park-like character, with protective restrictions that are written into deeds or lease".² An 'Industrial Park', therefore, is a district planned to ensure compatibility between the industrial operations therein and the existing activities and character of the community in which the park is located. 'Industrial Tract' refers to a tract of land where arrangements are made for necessary land improvements, installation of utilities and construction of access roads and streets, but where neither buildings nor other services are provided.³

In the United Kingdom, the terms 'Trading Estates' and 'Industrial Estates' are in common use. A fully-packaged industrial estate of the British type provides factory buildings, a wide variety of additional facilities and industrial services, complex restrictions regarding the use of land and facilities, operation by a Public or Private Corporate or Governing Body, and other devices for maintaining control over the tenants.

In Puerto Rico's 'Industrial

'Subdivisions' arrangements are made for improvements of land, installation of utilities, provision of highway access and even industrial buildings for a small group of enterprises. But the peculiarity of an Industrial Sub-division which distinguishes it from other forms is the absence of any special services and facilities provided to it.⁴

Of these variants, India, however, has accepted the British concept of Industrial Estate. There are perhaps two reasons for this. Firstly, the idea of adopting industrial estates as a tool for industrialisation has been borrowed from the British experiment in this field. It is, therefore, quite natural that while adopting the British scheme, India has also chosen the British term. Secondly, the connotation of an Industrial Estate is highly comprehensive and descriptive, implying all possible provisions of utilities and services on an improved tract of land together with factory buildings.

Before referring to the main features of the programme it may be worthwhile to explain the connotation of the term Industrial Estate as it has come to be used in India. In physical terms an industrial estate in India is a developed area provided with various basic facilities and services including electricity, water supply and roads, and with a number of factory buildings available for rent or hire-purchase to prospective industrialists. The purpose is to enable the entrepreneur to install his machines and start operations without spending money and time on the construction of a factory building. In the words of Dr. P. C. Alexander, Development

⁴ Ibid, p. 3.
Commissioner, Small Scale Industries, Ministry of Commerce and Industry, Government of India, who has made a comprehensive survey of the programme of industrial estates in India, it can be defined as "a group of factories constructed on an economic scale in suitable sites with facilities of water, transport, electricity, steam, bank, post offices, canteen, watch and ward and first-aid and provides with special arrangements for technical guidance and common service facilities". By industrial estate, we would refer, therefore, to the collection of a number of workshops or factories brought together within a suitable and marked area where the Government creates conditions favourable to the growth of small scale units.

An industrial estate in this sense is to be distinguished from an 'industrial area'. The main difference is that while all the basic facilities and services are supplied in an industrial area, factory accommodation is not provided by Government authorities, but is to be constructed by the entrepreneurs. Broadly speaking, industrial estates are intended primarily for small entrepreneurs while the industrial areas are developed mainly for the large and medium entrepreneurs who themselves can, and would like to, invest in the construction of factories according to their individual requirements.

A third term currently in use is 'industrial township'. These are similar to industrial areas in regard to the provision of basic facilities and services.

but an additional feature is the inclusion of housing accommodation and other amenities associated with a town.
II. THE ROLE OF INDUSTRIAL ESTATES IN THE PERSPECTIVE OF INDUSTRIALISATION

The industrial estate, as explained in the preceding section, is usually an organisation set up to assemble, improve and subdivide tracts of land, and frequently to erect factory buildings, in advance of or following demand, which are either for sale or for lease to prospective occupants. But the purposes of industrial estates are as varied as the motives behind them. The major objectives with which industrial estates have been established in different countries will be discussed in the next chapter. Particularly in the developing countries, industrial estates have been intended as a device for expanding, strengthening and locating small or medium scale industries as part of a broad programme of industrialisation, and as such have a unique role to play in their economic and social development.

A characteristic feature of the programme of industrial estates in India is that it has been initiated with the primary objective of modernising and developing the small scale industries which, as the planners have clearly recognised, have a vital role to play in the economic development of the country. The Small Scale Industries Board, at its meeting held in January, 1955, adopted the programme of industrial estates as a specific measure aimed at the

development of small scale industries. The principal objectives of the industrial estates, as the Planning Commission has observed, has been "to enable a number of small scale units to have the advantage of common services and other facilities such as water, gas, steam, compressed air, railway sidings, watch and ward etc."

The role of industrial estates, however, in the context of development policies and programmes would be underestimated if it is visualised for developing small scale industries only. Its primary importance has consisted mainly in acting as a means of deliberate growth of industries in some particularly needed areas following the pattern of some balanced geographical distribution of industries throughout the country. In fact, as part of the programme for developing small industries, India is using industrial estates as an integral mechanism to guide the location and development of industry in order to achieve two basic objectives: industrial development and dispersal of industries. Industrial development policies use industrial estates to accelerate industrialisation and employment opportunities, to foster and modernise small firms, and to relieve hardship in depressed areas by expanding and diversifying the industrial base. Industrial dispersal policies use industrial estates to divert population from large urban centres, to provide an economic base for a new town or growing suburb of a metropolitan area, to encourage the development of rural and under-developed regions. In essence,


8. The Planning Commission, Government of India; The Second Five Year Plan, p.452.
industrial estates in the perspective of Indian industrialization are connected mainly with the problem either of shifting industries from large cities to or of locating new industries in the areas which are lagging economically behind. They may be regarded as an instrument for regional development of backward areas; town planning and control of urban overgrowth.

Until 1951, when the First Five Year Plan was inaugurated, industrial development in India had taken place on an unplanned basis. The insufficient development of infrastructure has been a major bottleneck in industrial planning; and consequently there has been a marked tendency for the industries to locate themselves in and around big towns mainly due to ready availability of a large number of external economies on account of the prior development of ancillary services and facilities like banking, transport and communications, etc. As a result of such haphazard and unplanned growth pattern, there has been heavy concentration of population and industrial activity; and the towns catering to these needs have grown into what are called metropolitan areas to the sheer neglect of other regions. On the one hand, several towns have grown into big cities and the excess pressure on them is almost reaching a breaking point; on the other hand, there are large areas untouched even by the slightest degree of industrialisation and modern techniques. The names of about half a dozen towns will complete the list of important industrial centres in India, whereas most other settlements are villages and rural areas with population below 10,000. Most of the villages do not have
electric power and are not likely to have it in the near future. According to the estimate of the Third Plan, only about 43,000 villages and towns are expected to have electricity by the year 1966. Besides, there has been insufficient development of roads, communications, buildings and other essential services. In addition to the rural areas, there are vast areas that can be characterised as 'backward' regions in the sense that there is high density of population in these areas in relation to development of productive resources and employment opportunities even when compared to the rural areas of the country. As the Planning Commission observed: "There are large areas or regions of the country which are underdeveloped even in relation to the rest of the country and there are classes of population which are almost untouched by modern progressive ideas and techniques". Under the circumstances it is essential to disperse industry and population throughout the country so as to restore the balance in the level of economic development as between different regions.

Quite naturally, the tendency towards regional inequalities appears to be stronger in an underdeveloped economy than in a developed one. If things are left to market forces unhampered by policy interference, industrial production, commerce, banking, insurance, shipping and almost all the economic activities in a developing economy tend to cluster in certain favoured localities which offer special facilities for the economic activities concentrated there, leaving the rest of the country in a backward state.

Within broad limits, however, the power of attraction of a centre today owes its origin mainly to the historical accident that something was once started there and

not in a number of other places where it could equally or better be started, and that the start had met with success. It may reasonably, therefore, be expected that if somehow or other a primary change occurs as a check to the tendencies of regional inequalities, a process of circular causation may be started with its cumulative effects. If it is decided, e.g., to locate an industry in an underdeveloped region with proper consideration to the social and economic environs of the area concerned, it may give a spur to the general development of the area. Opportunities of employment and higher incomes would be provided for those unemployed before or employed in a less remunerative way. Local business can flourish as the demand for its products and services increases. Labour, capital and enterprise would be attracted to these areas for exploiting the expanding opportunities. The establishment of new business or the enlargement of an old one widens the market for others and generally increases the incomes and demand. Rising profits increase savings but at the same time investment goes up still more, which again pushes up the demand and the level of profits. And the expansion process creates external economies favourable for sustaining its continuation. Thus a "simple model of circular causation with cumulative effects, released by a primary change", as G. Myrdal observes, may be "more typical of actual social processes than the intersection of demand and supply curves at an equilibrium price which has become symbolic of much of our reasoning in economic theory".  

Particularly in an underdeveloped economy, it appears to be very difficult to introduce such primary change in the rural and underdeveloped parts of the country without any Government intervention and initiative. Government initiative may be extremely effective in moulding the geographical pattern of industrial distribution either directly or indirectly. The upward cumulative process discussed above, for example, may further be accelerated by a reduction in local tax rates and freight rates by Government. In many countries, including the highly developed economy of the U.S.A., where Governments have resorted to policies of restoring regional balance, as will be discussed in the next chapter, a lower rate in the local tax has been chosen as a means of creating extra incentives for business and workers to emigrate to the community. Naturally if the local tax rate is lowered, and the amount and quality of public services are enhanced, both changes make the community more attractive to business and workers with the result that the local finances are again boosted, with similar results on the tax rate, public finances and so on.

Once an industrial estate is set up in a given locality, therefore, having regard to such factors as population density, present and potential resources, trade prospects of the surrounding area, it gets the potentiality of serving as an industrial nucleus or economic base for the community as a whole. When, for example, factories are constructed and served with highways, communications, power, water, sewerage and fire protection, industrial estates are likely to generate some secondary growth or radiation effects.
"Related industries may spring up to take advantage of highway facilities or rail stations, or newly laid utility lines or other new facilities introduced on the estate. Growth may also result from attempts to fill the gaps in facilities offered by the estate. In this sense the estate serves as a magnet for firms providing services for industry; these may include services relating to equipment, repair, wholesale and storage facilities. Personal service establishments catering for the estate employees will also tend to cluster in the vicinity of the estate, if these are not provided within the estate itself. All these will stimulate employment opportunities on its fringes and this, in turn, will result in demands for increasing housing and community services as well as for expanded and improved passenger and goods transportation. In the United Kingdom, it has been estimated that three people are employed in the provision of services for every two employed in manufacturing industry.\textsuperscript{11} In the United States, the Chamber of Commerce has estimated that, when 5,000 industrial workers are employed in manufacturing, this actually means 15,000 more people, or 5,600 more households and 5,035 new automobile registrations.\textsuperscript{12} Thus when the families and dependents of both the direct and indirect employees are totalled, this can mean a sizeable increase in population, and can possibly result in creating the equivalent of a new town. Demands will be made on the various public utilities and the employees must be provided with residential, commercial and recreational


\textsuperscript{12} United States Chamber of Commerce, "What New Industrial Jobs Mean to a Community" (Washington, D.C., 1954).
facilities, and schools and hospitals must be constructed and maintained. In this way, when an industrial estate is set up in an ideally selected place, through its secondary and cumulative effects of circular causation, it may turn the entire adjacent area into a busier hub of industrial activity stimulating thereby a growing township. "An industrial estate", as William Bredo rightly states, "provides a complex sufficiently large to make it economical to provide good transportation and communication services...(it) will provide the means for creating economic nuclei for spearheading industrial decentralization... whereby the local infrastructure and the external economies demanded by entrepreneurs as a precondition for industrial clustering can be deliberately created and used for executing an industrial dispersal programme".13

The effectiveness of industrial estates, however, as part of a dispersal and decentralization policy is to a large extent related to their location. In other words, it may be said that a site for industrial location or in our case a site for industrial estate cannot be chosen without attaching weight to the principle of comparative costs or of manufacturing the right product at the right place. From the entrepreneur's point of view, the best location for an industry is that which facilitates the securing of the highest return. The total 'cost of doing the business' of an entrepreneur may be divided into two categories: processing cost, i.e., the cost of transforming the materials into products, and the

13. William Bredo, "Industrial development and Urban Growth, with particular reference to Industrial Location", Seminar on urbanization in India, University of California, 1960 (Paper No.9).
transfer cost, i.e., (a) the cost of purchasing and bringing the materials to the processing site, and (b) the selling and delivery costs. The cost of processing remaining the same, the relative economy in the cost of purchasing and bringing the materials to the processing site, i.e., the procurement cost, and the selling and delivery costs, i.e., the distribution costs generally tend to make the industry, in the simplest case when the producer uses a single material from a given source and produces one kind of product selling at a single market, either materials-oriented or market-oriented.

The actual basis on which production will get oriented within a location figure depends, however, upon two factors: the type of materials used, and the nature of their transportation. According to their type, raw materials may be divided into ubiquitous materials which are available everywhere, e.g., brick, clay and water, etc. and localised materials which are confined to certain localities or regions, e.g., cotton, wool, pulp, sugarcane and minerals, etc. Quite naturally, the localised materials exert greater influence on industrial location than the ubiquitous materials. The ubiquitous materials, however, generally give the producer an incentive to produce as near the market as possible in order to reduce distribution costs. The localised materials may be classified, following Alfred Weber, as 'pure materials', e.g. cotton, wool, or 'gross materials', e.g., sugarcane, minerals, 'Pure materials' are those which add either whole or most of their weight to the finished product; and these are not likely to attract production to their place of deposit, as the transport cost in their cases remain the same whether they are transported as raw materials
or as finished products. On the other hand, gross materials are weight-losing in the sense that a major portion of their total weight is lost in the process of manufacturing through combustion or waste. The weight-losing materials, if freight rates per ton are anywhere near the same on material or product, tend to pull industry to their sources, as production at the place of their deposit would avoid all transport costs incurred in transporting that part of materials which would get lost in the process of production. Thus the proportion of the weight of the materials to that of final product exercises a determining influence on the location of manufacturing industries. If this proportion (which Alfred Weber calls 'Material Index') is high, production tends to be attracted to the places of deposit and, if low, it lies at the centre of consumption. That is to say, the relation between the gross weight of the localised materials and weight of the final product should always be regarded as an important determinant of industrial location.

The basic answer to the question as to whether the product will be market-oriented or materials-oriented would depend, thus ..., upon its material index, i.e., the proportion of the weight of the materials to that of final product and the relative freight rates of the material and the product. Now orientation to materials may be determined either by the weight-loss in the process of manufacturing or by higher transfer costs per ton-mile on materials than on products. Similarly, orientation to markets may be based either on the weight-retention in the process or on higher transfer costs per ton-mile on products than on materials.
Industries, however, rarely use only one material or turn out a single product. In most cases the processing establishment draws from several material sources and sells to more than one market. Under such circumstances, when the situation will be more complicated, intermediate points such as transhipment points or junctions may offer special advantages unless a single force (measured by marginal procurement or distribution cost per added mile per unit of product) exceeds the sum of the others.  

The advantages of a site from the point of view of processing cost depend on two things: (a) the prices of factors of production and (b) the amounts of those factors needed per unit of output. To determine the location for most efficient processing, therefore, the rent or price of land, the rate of wages, tax rates and interest rates are all relevant. A producer while locating a processing unit presumably looks for the site where the combination of productive services necessary to make the product can be had at minimum cost per unit of output. This means that the prices of productive factors help to determine the relative advantages of different possible processing locations.  

While selecting the site of an industrial estate, therefore, proper weight should be given to these locational factors. An industrial estate at an ideal site may provide the basis of geographical location of industry in accordance with the objectives of dispersal of industries and

broad regional development. Since the dispersal of industries and regional development are connected, in turn, with diverse problems of planned growth such as reduction of economic inequalities, generation of employment, development of potential entrepreneurs and slum clearance etc., any ideally located industrial estate may serve each of them.

**Reduction of economic inequalities**

In the early phase of growth, economic development has a tendency to be associated with growing inequalities of income and wealth. As a rule, the process of industrialization tends to enlarge opportunities for well-established firms to expand their size and enter new fields of enterprise. As compared to new undertakings or to smaller enterprises, they enjoy advantages in organisation and expertise, in access to the capital market and ability to secure foreign collaboration and, generally, in the resources which they are in a position to deploy. The gains of development, as a result, accrue more and more to a small class of businessmen at the cost of exploitation of the masses. Thus in an under-developed country, unless special measures are taken in the first phase of economic development, there is a tendency for differences in levels of income to become widened day by day.

"The problem before under-developed countries embarking upon development at this late stage", therefore, as the Planning Commission observes, "is so to plan the alignment of productive resources and of class relationship as to combine development with reduction in economic and social inequality; the process
and pattern of development has, in essence, to be socialized. It is expected that in the way of socializing the pattern of development and securing justice for all, social and economic, industrial estates will have an important role to play. They may help in equitable distribution of national income by ensuring broad-based ownership in industry, wide diffusion of enterprise and extending liberal facilities for new entrants. The process of reducing inequalities is a two-fold one: it must raise incomes at the lowest levels and it must simultaneously reduce incomes at the top. Industrial estates can serve both these ends; first, by opening opportunities for a large number of new entrants in the industrial field, and secondly, by preventing the growth of monopolies through wide diffusion of industries throughout the country. On the one hand, they may tend to bridge the gap between the higher and the lower incomes and, on the other, to raise the level of minimum income through diversification of the economy.

Generation of employment

Balanced regional development through industrial estates will, needless to say, generate additional opportunities for gainful employment. In an urban area, an industrial estate may widen the opportunity of work for the educated middle class and skilled and semi-skilled labourers. One of the objectives of the Indian planners in drawing up the programme of industrial estates was to ease the problem of the

educated unemployed in the urban areas. As the Planning Commission has observed in the First Five Year Plan: "In the U.K. the Government took initiative in encouraging private capital to provide building up these estates after the great depression to reduce unemployment and to bring about better distribution of industries. While the objective of dispersal of industries is only a long term process, the idea of trading estates can be experimented upon if it can help to some extent solve the unemployment problem of the educated classes".16

From the point of view of employment, however, industrial estates clearly have a more significant role to play in the rural or semi-rural areas than in areas which have already been industrialised and urbanised. About 83.3% of the total number of people in India live in rural areas and depend, other opportunities being absent on the village level, mainly on agriculture for their livelihood. It puts an excess pressure on land, making thereby the per capita productivity and income very low. Industrial estates may act as a counteracting force by diverting the surplus labour force from land into productive channels. They may help to create broad-based industrial villages which will combine industry with agriculture in a socially organised way, with the full aid of machinery and technical knowledge. Seasonal migration of agricultural workers to industrial centres take place every year in India. Establishment of industrial estates in rural areas would, among other things, contribute towards stabilising their population

and preventing periodic overcrowding of urban centres by widening opportunities for non-agricultural work at the village base.

Development of potential entrepreneurs

One significant contribution of a comprehensive plan of industrial estates would be to serve as a seed-bed of local entrepreneurship and latent talent for organisation and management. Particularly in an underdeveloped country like India, the key to widespread industrial growth is the rise of an energetic and skilful group of creative, innovating, achievement-motivated entrepreneur-managers throughout the country. It often happens that new techniques and new plans cannot be worked out because of a dearth of suitable entrepreneurs at the local level. One authority believes that "good management is even more important for the development of small industry than are efficient and appropriate production techniques"; secondly, that "no amount of capital equipment, no number of enthusiastic Government planners, and no teams of foreign consultants can compensate for a lack of individuals eager and able to seize opportunity to develop"; and thirdly, that "development may come most rapidly when resources are used not merely to provide land, buildings and equipment, but also to encourage potential entrepreneurs and to prepare entrepreneurs for management".¹⁷ Industrial estates, providing land, buildings and equipment, would encourage local

talent to avail itself of the manifold facilities provided to it by the Government authorities. Men with limited business knowledge and means, who do not like to take much risk, may be encouraged to start their manufacturing work within the shelter of industrial estate. Gradually they would gather experience and be turned into efficient entrepreneur-managers to start risky ventures on their own initiative. To the extent this is feasible, industrial estates may be looked upon as the training ground or nursery for entrepreneurs.

Slum clearance

Metropolitan industrial estates would have the effect of regulating the inflow and local development of industry which, in such localities, often takes place in a disorderly fashion. Also, they might be a desirable counterpart to urban renewal programmes, in particular, slum-clearance projects. Dispersal of industries in small urban centres and rural areas adjacent to large cities would help to remedy some of the evils of concentration in city life. The Committee on Plan Project recommended that "the new estates should be self-sufficient and self-contained in regard to housing, means of communications, power, water supply and environmental hygiene. This would enable the shifting of small industries now located in the heart of the towns and the area vacated by those may be profitably utilised for the accommodation of displaced persons from slum areas. "Whenever possible the industrial estates schemes may be co-ordinated with slum clearance schemes."

On the whole, therefore, an industrial estate can make a decided contribution to improving the general planning of a community in an area where there is no framework of comprehensive planning and where decisions regarding land use are unco-ordinated and not wholly consistent. An industrial estate, however, cannot, by itself, be an instrument of spontaneous growth. The establishment of industrial estates, either in large or small centres, is not a substitute for an economic development policy of broader scope. It is only one of the devices which can be helpful in co-ordinating industrialization and urbanization policies. It is a method of organising land uses economically for industrial development. For a successful industrial project it is necessary to be integrated with general development plans and programmes. Common sense indicates that integration at the level of the region provides the most suitable framework for co-ordinating local development programmes with overall planning for national development. That would enable our industrial estate to be fitted or rooted in the socio-economic structure of the local level. On the whole, however, it may be concluded that planning for the establishment of industrial estates should not be an isolated one, rather it must be a part of a total planning process concerned with maintaining a balance between an industrial and an agricultural economy. The returns should be considered in terms of benefits to the community as a whole in the broad area surrounding the industrial centre; they would be measured not only in terms of the value of the goods produced, but also of the number of jobs created, increase in income, and secondary effects on trade, service and even agricultural activities.
III. INDUSTRIAL ESTATES AS A MEANS OF PROMOTING SMALL SCALE INDUSTRIES

India, along with many other underdeveloped countries, has decided to use the device of industrial estates, as has already been pointed out, for promoting small scale industries. The estate, combined in itself some of the important schemes of assistance to small industries and provides an ideal tool for integrated development. Since the entire programme of industrial estates is vitally linked with the problems of small scale industries and their solution, it is necessary to discuss the latter briefly before proceeding any further.

We may ask ourselves, given the need for industrialization, what part can small scale industry play in the process?

First, it may make possible economies in the use of capital. A given amount of capital invested in small scale industrial undertakings is likely to provide more employment than the same amount of capital invested in large scale undertakings. This is a very important matter for an underdeveloped country with surplus labour for which the shortage of capital makes it difficult to find jobs. But while a small firm nearly always uses less capital per worker employed, it is not certain that it typically uses less capital than large scale industry per unit of output.19 Secondly, besides making possible

economies in the use of the existing stock of capital, small scale industry may call into being capital that would not otherwise have come into existence: "The enterprising small manufacturer has to scrape together capital wherever he can find it. But he and his relatives and friends oftentimes do find a surprising amount... Furthermore,... this capital probably would never have come into existence as productive capital had it not been for the small enterprise. The equivalent would not have been invested in Government bonds and would not have been put in banks or loaned for the use of others".  

Thirdly, large scale industry calls for a great deal of managerial and supervisory skill - foreman, engineers, accountants and so on. Like capital, these skills are in very short supply in underdeveloped countries. Small scale industry provides a way of generating these, and at the same time provides industrial experience and serves as a training ground for large numbers of small scale managers, some at least of whom may develop the capacity for managing large scale undertakings. Besides, "the growth of an economy usually requires a large number of small changes, each taking advantage of local opportunities and availability of resources, and each in turn making further growth possible. Dispersal of savings and dispersal of entrepreneurship are important aspects of economic development even in countries in which the State has played an important part as provider of capital and manager of business enterprises".  

not only managerial and supervisory skills that are in short supply in under-developed countries, but many types of skilled labour as well. Small industry may be better able than large industry to take advantage of existing traditional skills with some modification, if necessary. Finally, encouragement of small-scale industry may help to preserve a healthy balance between the rate of economic growth in urban and rural areas. Small scale industries in rural areas can serve to counteract seasonal unemployment or under-employment in agriculture, and thus to make use of labour which might otherwise be wasted.

Thus it may easily be concluded that in a newly industrialising country like ours, with her more abundant labour, less abundant capital, greater difficulties of transport and communication, and loss of the special skills and traditions required in large scale industrial organisation, the potential contribution of small industry, provided it can be helped to adopt modern techniques, may be immense. The systematic development of modern small industries, under the conditions of most of the developing countries, offers opportunities for economic growth and for advancement in productivity, income and employment.

In India, over the past two decades, a large number of small industries have sprung up, but there has been hardly any considered and co-ordinated programmes of development and improvement. As a result of such unplanned process of growth, small industries in India, inspite of having their immense importance in the national economic development, lack in some elements that make for efficiency and stability. In fact, they
have been suffering, in particular, from some financial and organizational weaknesses, and as a result "many small industries are now facing a crisis, deteriorating in output and employment, and increasingly unable, because of declining demand and production, to pay better wages, or lift the standard of living of its employees". 22

There is therefore, enough ground on which the Government of India should have undertaken a comprehensive scheme of assistance for modernising and developing small scale industries through industrial estates. Industrial estates, if properly planned, might be a potent tool for bringing the fruits of modern science and technology to the small units and raising them up to their potentialities discussed above.

It is proposed here to discuss some of the weaknesses of small units that industrial estates seek to remove, or rather some of the benefits that may be extended to a small firm through the instrument of industrial estates. First, the difficulty in finding suitable factory accommodation has been one of the major handicaps in the development of small industries in India. Even when the entrepreneurs are able, somehow or other, to make arrangements for starting production, they fail to organize themselves due to lack of proper working accommodation. In fact, small factories in India are often housed in cramped, dark and dirty quarters which are not conducive to good work by human beings or by

machines. A team of Technical Experts from Western Germany, who were on a short visit to India from March 24 to May 14, 1965, reported that the majority of the units in small scale industry suffer from inadequate working space, poor lighting at working places, poor ventilation of premises, lack of measures for dust control and lack of sanitary and safety measures. These facilities are not only difficult to be arranged, but also consume a large slice of the finances of the small entrepreneurs. Industrial estates may act as an effective means of combating these difficulties and ensuring healthy growth of small industries. They seek to provide built-up accommodation to the entrepreneurs quite in conformity with safety regulations and health laws. "The industrial estate" as Dr. Eugene Staley has pointed out, "relieves the small industrialist of the oftentimes arduous task of getting titles to land, having a building constructed, arranging for electricity connections, and the like. The advantages may also be factors in attracting foreign investment". Secondly, industrial estates may serve as an indirect way of providing financial assistance to small industrialists. As is well known, small industries in India, along with other underdeveloped countries, suffer from acute financial difficulties. Apart from the narrowness of the capital market for small industry, there is a tendency on the part of the banking institutions to favour large enterprises in the granting of loans. The purpose of special loan and credit

Facilities, however, is to help small firms solve their financial problems by increasing the supply of funds available to them. Another approach to this problem might be to take steps that will reduce the amount of funds they need. Industrial estates may serve the purpose by reducing the amount of initial fixed capital needed by an individual who wishes to start a small business. "It is as good as a loan," as Staley remarks, "if otherwise the enterprise would have to finance its own building." It enables industrialists to hire, instead of having to buy land, premises and certain types of equipment. In a number of countries industrial estates have been set up in which physical facilities can be hired by small businessmen on reasonable terms. India may follow the example.

Thirdly, such grouping of small enterprises on an industrial estate may enable the individual firms to obtain some positive benefits. The benefits are in the nature of some external and internal economies that are directly or indirectly connected with the problem of reducing their manufacturing and business costs.

1. External economies

The external economies accrue to a firm from environmental facilities and reduce the 'cost of staying' in business. The main benefits arise in the form of improved services, both human and material, to the entrepreneurs.

'When a sponsoring agency, either public or private, establishes an industrial estate, a number of common services including common facility workshops, tool works, testing laboratories, central warehouse, transport, banking, fire protection and recreational facilities are attracted to the area concerned. They can either be provided by the sponsoring agency on no-loss, no-profit basis or the small units crowding together find themselves in a better position to set up common facility services co-operatively. Such facilities release a part of the funds of the small entrepreneurs. Besides, a properly planned estate managed by competent administrators and occupied by well-serviced and assisted industries should be considered by lending institutions, including commercial banks, as a sound business proposition presenting a minimum of risk. The traditional recourse of small industrialists to money-lenders, wholesale traders or relatives, therefore, could be, if not obviated, at least appreciably reduced. On the whole, therefore, in the words of Dr. E. Staley again, "industrial estate provides an excellent location of representatives of advisory and information services and research services, financing services, training programme and common facilities to a group of industrial establishment". The benefits from such facilities are likely to improve the technical know-how and skills among workers and management, and encourage thereby mutual inspiration. It will not be economical, particularly for any small unit, to have such facilities for itself alone. Another unique type of external economies may emerge in the form of inter-trading and interservicing amongst the small firms themselves. For example,

27. E. Staley, op. cit., p. 38.
a sample unit manufacturing cycle parts or sewing machine parts can get its products finished by the electroplating or enamelling unit nearby. If there are two units, one manufacturing plastics and the other electrical accessories, the former can make all the plastic parts required by the other. Similarly, a foundry unit can manufacture castings required by nearby units, and so on. Moreover, inter-trading may also be undertaken by the units in the form of collective purchase of raw materials and sale of finished products etc. This sort of inter-trading and inter-servicing brings down the cost of manufacturing considerably, loading to attractive prices for the commodities. This is a feature that is possible in an industrial estate alone.

(2) Internal economies or economies of scale

Economies of scale refer to the reduced costs of operation that is generally associated with the increasing size of a business or its volume of production. This type of economies is commonly achieved by a large firm, as is well known, because of the existence of indivisible factors. With increase in the scale of output of the firm, the indivisible factors may come to be more and more fully utilised and the resulting economies are reflected in increasing returns. This may also happen in an industrial estate. The distinction between internal and external economies is, in a sense, arbitrary and the same set of economies may be called 'internal' or 'external' depending upon one's point of view. An estate sheltering a large number of small industries, all of them enjoying some advantages in common in the form of overhead ancillary facilities, may take the character of a single large firm. Up to a certain extent it
may be expected that costs of estate development and administration would decline per unit of each facility with the increasing size of the project. This declining cost would be shared by all the entrepreneurs taking accommodation in the estate, thereby reducing their costs of operation. These are the obvious economies of scale that are derived from centralised planning, construction and installation of facilities and lay out. Thus if a large number of small firms herd together through industrial estates, there may be a greater possibility of maintaining them without diseconomy than when they are widely dispersed. As P.S. Florence points out, "a localisation of many medium or smaller plants offers similar economies (e.g., juxtaposition between auxiliary services and the main process) to those found within a single large plant". To the extent that this is true, a certain degree of clustering of industries encourages the development of small productive units, and such concentrated dispersal of industries through industrial estates, instead of working in the direction of small scale industry, tends to pull in the opposite direction.

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