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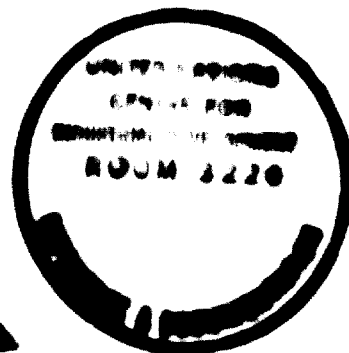
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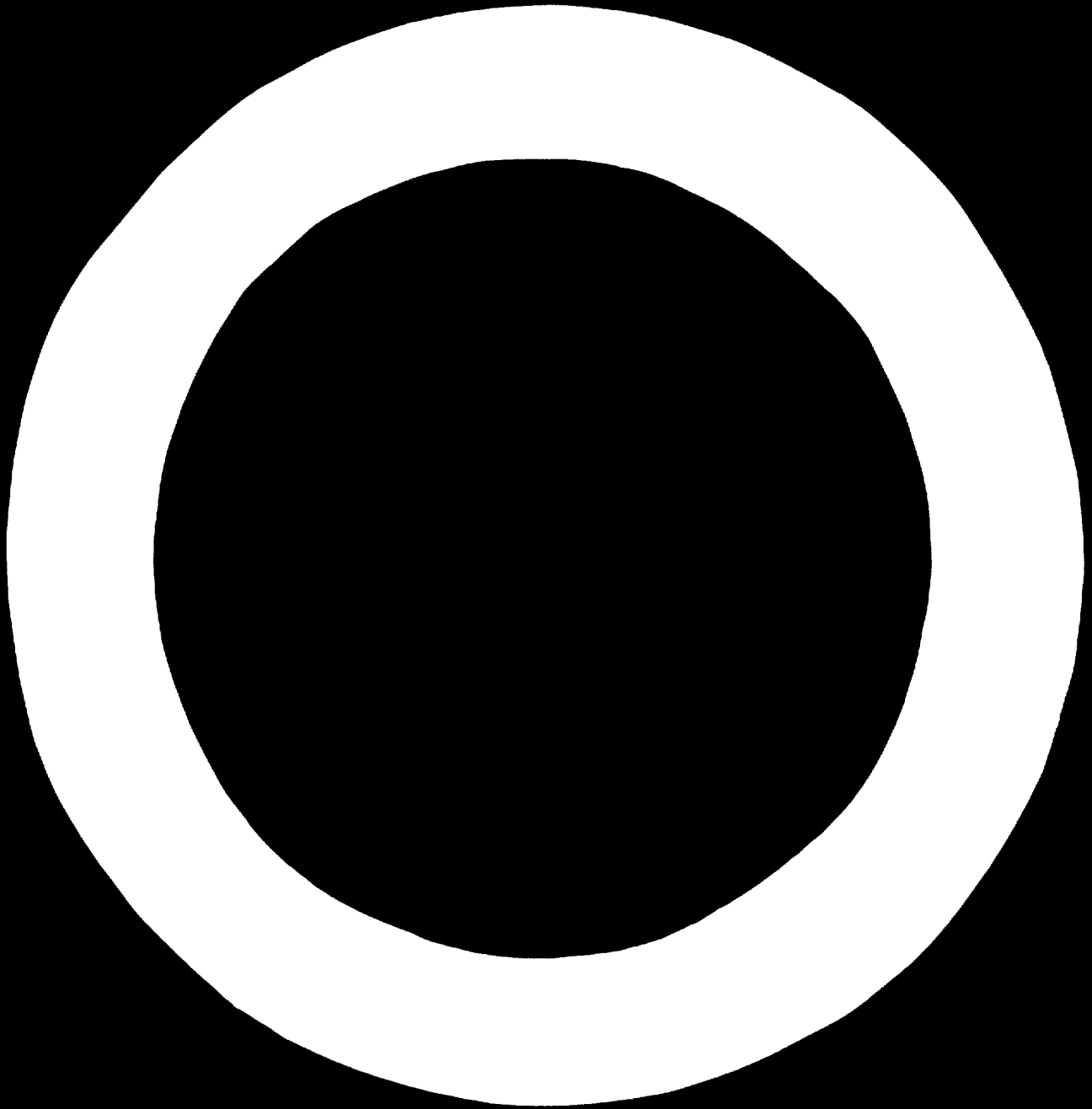


INDUSTRIAL ESTATES:
Planning, Plans and Progress



INDUSTRIAL ESTATES

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Department of Economic and Social Affairs

INDUSTRIAL ESTATES: Policies, Plans and Progress

**A Comparative Analysis
of International Experience**



**UNITED NATIONS
New York, 1966**

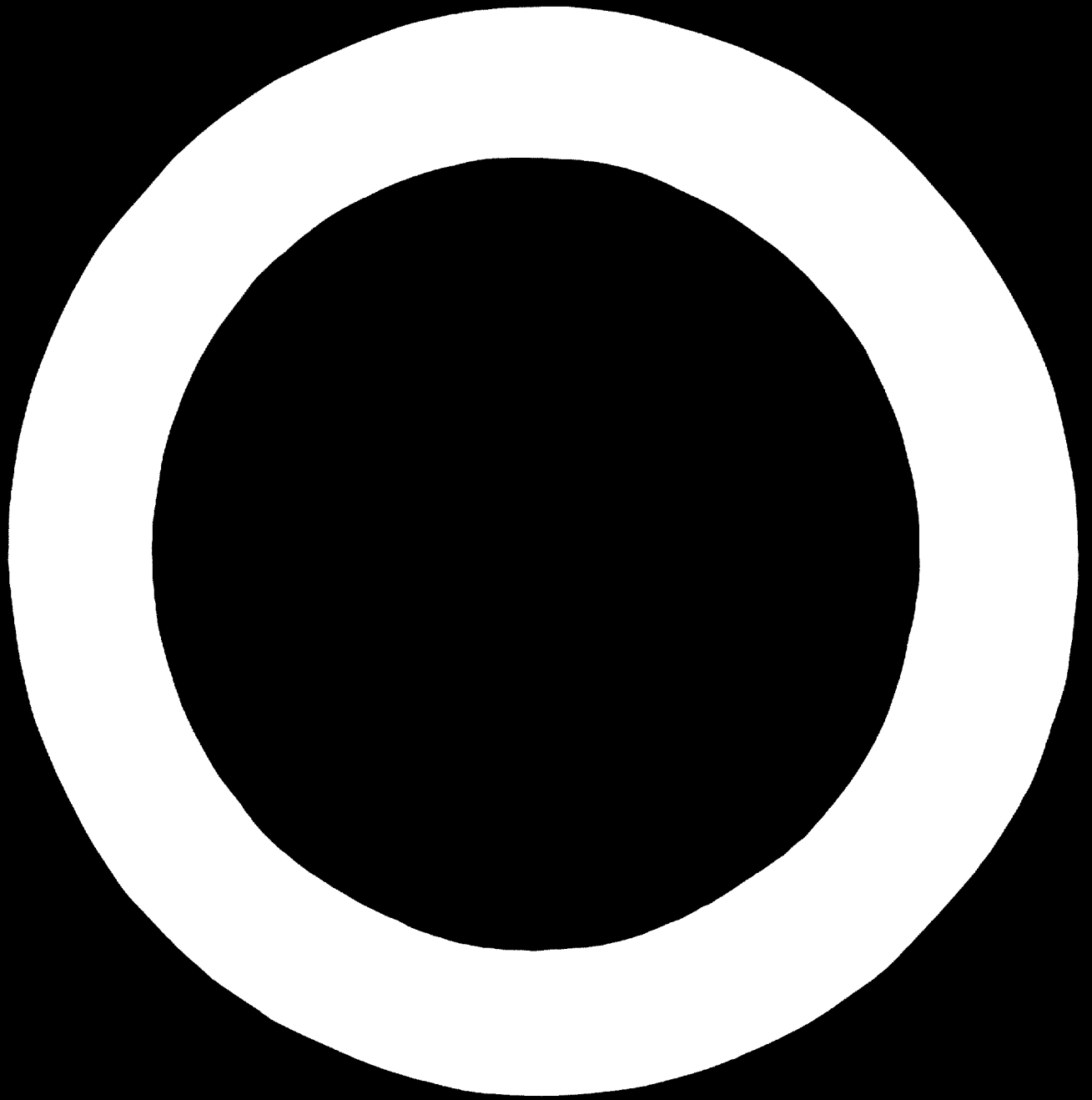
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CONTENTS

| | |
|---|-----------|
| Preface | 1 |
| Introduction | |
| Chapter | |
| I. Objectives and Policies | |
| Industrialization | 5 |
| Regional development | 8 |
| Area and community development | 10 |
| Changing trends in industrial estate policies and programs | 11 |
| II. Planning and Organization of Industrial Estates | |
| Sponsorship | 17 |
| Types of estates | 18 |
| Size of industrial estates | 20 |
| III. Management of Industrial Estates | |
| Administration | 29 |
| Admission and occupancy policies | 34 |
| Services and facilities | 35 |
| Sales and lease policies and charges for services | 36 |
| Special inducements | 38 |
| IV. Financing of Industrial Estates | |
| Government financing | 46 |
| Municipal financing | 47 |
| Industrial foundations | 49 |
| Private financing | 50 |
| International financing and assistance | 50 |
| | |
| Annexes | |
| I. Questionnaire on Industrial Estates | 53 |
| II. Countries and Territories which Applied to the Questionnaire | 58 |
| III. References | 59 |



Preface

In accordance with the mandate given to the Economic and Social Council Committee for Industrial Development, the United Nations Secretariat has carried out research studies, organized seminars and stimulated technical co-operation projects in the field of industrial estates.

In the past five years, four reports on industrial estates were published by the United Nations Establishment of Industrial Estates in Under-developed Countries (1961) (Sales No. 60.II.B.4), ~~the Physical Aspects of Industrial Estates (1962) (Sales No. 62.II.B.4), Industrial Estates in Asia and the Far East (1962) (Sales No. 62.II.B.5), and Industrial Estates in Africa (1963) (Sales No. 63.II.B.2).~~ Two regional seminars on industrial estates were held in the Far East and the Far East in Madras, India, in 1961, in co-operation with the Economic Commission for Asia and the Far East (ECAFE), and in Africa, in Addis Ababa, Ethiopia, in 1964, in co-operation with the Economic Commission for Africa (ECA).

In February 1964, the Centre for Industrial Development of the United Nations Department of Economic and Social Affairs addressed a questionnaire on industrial estates to the Governments of those Member and non-member States which, according to available information, had plans or projects in this field. ^{1/} At the request of participants of the Seminar on Industrial Estates in Madras, the Centre also sent the questionnaire, in May 1965, to those Governments for which had not received it earlier. The purpose of the inquiry was to elicit information from countries, developed and less developed, on their policies, plans and progress in the field of industrial estates, with a view to deriving, from a analysis of their replies, some guide-lines for the establishment of industrial estates in the developing countries. At its fourth session held in March 1964, the Committee for Industrial Development expressed interest in receiving a comparative analysis of international experience emerging from the replies.

Replies were received from fifty-six countries, most of which contained valuable information on experience in the development of industrial estates. ^{2/} With a view to broadening the scope of the inquiry, the present study, prepared by the Small-Scale Industry Section, Policies and Programming Division, Centre for Industrial Development, takes into consideration not only the replies, but also previous studies, papers and reports of regional seminars, reports of technical co-operation missions, and other material and publications in the field of industrial estates. ^{3/}

- ^{1/} The questionnaire is reproduced in annex I.
- ^{2/} The countries which replied to the questionnaire are listed in annex II. Twelve of these countries have no industrial estates in existence or have no plans for the establishment of industrial estates.
- ^{3/} A list of references is given in annex III.

The study is intended primarily for authorities in charge of industrial development in the developing countries and for technical assistance experts in the field of industrial estates. The United Nations expects to utilise the findings in its continuing technical cooperation programmes and its future research work.

Introduction

Although the concept of the industrial estate originated about fifty years ago - the first estates were established in the United Kingdom and the United States towards the end of the last century - progress in this field has been slow and halting until the 1950's and largely confined to these two countries. Since the 1950's however, there has been a very rapid growth of industrial estates all over the world. At present, thirty-six countries - twelve in Europe, three in North America, eleven in South America, sixteen in Asia and the Far East and fourteen in Africa - have either established industrial estates or have programmes under way. There is a sustained and growing interest in industrial estates both in the industrial countries which still account for the largest number of estates, and in developing countries, where they are considered as a major industrialization tool.

Over 80 per cent of the more than 1,000 industrial estates in existence in the United States were established after 1949. In the United Kingdom, a majority of the more than 100 industrial estates and areas were established during the last twenty years. As against seven industrial areas in 1950, all established in the northern part of the country, Italy has established or is planning to establish fifty-two industrial areas and industrial nuclei, of which thirteen are in the North and thirty-nine in the relatively under-developed South. There are 260 industrial estates and areas in France and about 100 in the Netherlands. In Belgium, a programme of regional development of industries, including the establishment of industrial estates, is under way. Among the less developed countries of Europe, Ireland has three estates and Malta two, and programmes are under way in Greece, Turkey and Cyprus. Canada and Puerto Rico have seventy-four and thirteen industrial estates respectively, as against only one each before 1950. Among the countries of Latin America, only Brazil had one industrial area in 1950. Today, Mexico has four industrial estates, Jamaica two, Trinidad and Tobago five, and programmes are under way in Argentina, Brazil, Chile, Colombia, Costa Rica, Ecuador, Peru and Venezuela. In Asia, the Far East, the Middle East and Africa, industrial estates have been established only during the last decade or so. India has 130 industrial estates already functioning and 211 others under construction or being planned. Japan, 55; Malaysia and Singapore, 24; Pakistan, 14; Hong Kong, 4; Australia and China (Taiwan), 3 each; Nepal and the Philippines 2 each; and Ceylon, Iran, the Republic of Korea and Thailand, one each. Ghana, Israel, Nigeria, South Africa, Southern Rhodesia, the United Republic of Tanzania and Zambia have a few industrial areas or industrial estates. An industrial estate is under construction in the United Arab Republic, two others are being planned and eight others are proposed to be established during the next five years. Plans are being made in the Gambia, Kenya, Mauritius, Somalia and Uganda.

✓ Besides the countries listed in annex II which replied to the questionnaire, some information was available on programmes in Argentina, Brazil, Chile, Costa Rica, Colombia, Ghana, Iran, Italy, Nepal, Somalia, the United Arab Republic and Venezuela.

Several factors are responsible for the rapid growth of level-plot industrial estates. In the advanced countries, the scarcity of industrial land near the major urban centres has long been a factor in the establishment of level-plot industrial estates. In the past few years, the interest of both the authorities in urban planning and the level-plot industrial estate, including rehabilitation of depressed areas, has provided a new impetus to the creation of level-plot industrial estates. In the level-plot industrial estates in the advanced countries, industrial estates have received attention as one of the important devices in programmes for the level-plot industrial estate. In the advanced countries, industrial areas are also established to encourage the establishment of industries of all sizes.

In this study, the term "industrial estate" is used as the generic term to designate a planned clustering of industrial enterprises, level-plot sites, pre-built factory accommodation and provision of services and facilities to the occupants. Terms such as "industrial park", "industrial district", "industrial subdivision" and "trading estate" are employed in different countries to denote the concept of an industrial estate. While all these terms are synonymous, they should be distinguished from two other terms, namely "industrial area" and "industrial zone". An industrial area is a piece of land offering improved sites as an inducement for the establishment of industrial enterprises. An industrial zone is an area restricted to or reserved for industrial use, on which no improvements are made. An industrial estate and an industrial area should in general form part of an industrial zone. The present study covers industrial estates and industrial areas, but is not concerned with zoning and urban planning problems.

The purpose of this study is to analyse information on policies, plans and progress in the field of industrial estates in different countries, with a view to deriving some guidelines for the establishment of industrial estates in developing countries. The study is confined to objectives, policies and methods relating to establishment, operation and development of industrial estates. It is not concerned with physical planning, ^{2/} urban planning, housing, education, traffic, social welfare and other related aspects. The even more meaningful differences between developed and developing countries, and between different regions, have been highlighted in the analysis.

The study is divided into four chapters. The first chapter contains a analysis of objectives and policies in the establishment of industrial estates in the context of the requirements of both developing and developed countries. The second chapter deals with planning and organization of industrial estates, including sponsorship, types of estates and size of estates. The third chapter is concerned with management problems such as administration, admission and occupancy policies, services and facilities, sales and lease policies and charges for services, and special inducements. The fourth chapter deals with problems of financing of the establishment and development of industrial estates.

^{2/} See in this connection an earlier study, The Physical Planning of Industrial Estates, (United Nations publication, Sales No. 62.II.B.4), an article, "Physical Planning of Industrial Estates" by P.S. Vedagiri in Industrial Estates in Asia and the Far East (United Nations publication, Sales No. 62.II.B.5) and an article, "Planning, Design and Construction of Industrial Estates with Particular Reference to India" by Mr. E.D. Mills, in Industrial Estates in India (United Nations publication, Sales No. 66.II.B.2).

Chapter I

Objectives and Policies

The earliest industrial estates established in the United Kingdom and other countries were private profit-motivated, commercially operated real estate ventures. Industrial estates set up in Canada, South Africa, the United States and New Zealand were also private profit-motivated, commercially operated real estate ventures.

In a more recent period, which began in the 1930's in the United Kingdom, the 1940's in Puerto Rico and the 1950's in Australia, Canada, India, Italy, Malaysia, Nigeria, Pakistan, South Africa, the United States and many other countries - both developing and developed - the establishment of industrial estates has been influenced by a number of objectives and policies, among which considerations of profitability have been the least important.

A clear distinction may be made between industrial estate development in industrially advanced countries and industrially less developed countries. In the advanced countries, such as the United States, the United Kingdom, the countries of western Europe and Japan, accelerated industrial recovery and growth after the Second World War, accompanied by the growing interest of public authorities in regional development, area and city planning, decentralization of industry from congested metropolitan areas and bigger cities, provision of fuller employment and incomes in depressed areas, and so on have provided the impetus for the establishment of industrial estates. In the developing countries of Asia, Africa, Latin America, the Middle East and southern Europe, on the other hand, industrial estates have received attention as one of the important devices, in a planned programme of development, for stimulating the establishment and modernization of small scale and medium-sized industries. Broadly speaking, industrial estates are principally used in the industrially advanced countries as a device for the planned location of industry, and in the industrializing countries as an instrument for industrial development. In many cases, however, these two principal objectives are combined.

The objectives and policies governing the establishment of industrial estates in various countries will be considered under the following three groups: industrialization, regional development, and area and community development.

Industrialization

The principal objective of industrial estate programmes is to promote small-scale industries by stimulating entrepreneurship and providing guidance and assistance to small industrialists at every stage of establishment, operation and management. Industrial estates and industrial areas also serve to promote industry of all types and sizes; to stimulate the establishment of certain types of industries; to attract foreign capital and entrepreneurship, and to provide industrial facilities in ports or airports.

Promotion of small-scale industries

In the developing countries, for instance, in Ceylon, China (Taiwan), India, Nepal, Nigeria, Pakistan, the United Arab Republic and Venezuela, industrial estates are a major instrument for encouraging and supporting the creation, expansion and modernization of small-scale industries through provision of factory accommodation, common service facilities, and assistance and servicing throughout all stages of establishment and operation. While the main consideration is promotion of industrial activity, location is necessarily considered, varying priorities being usually assigned to the development of regions, provinces, towns or rural areas. A chief merit of industrial estates is that the grouping of small industries permits the integration of various measures of technical, financial, managerial and marketing assistance. The clustering of units permits the achievement of economies of scale and efficiencies of specialization, as well as intertrading and interservicing among occupants.

Many newly independent countries with economies principally based on agriculture stress the role of industrial estates in achieving a breakthrough of indigenous entrepreneurship into small-scale and medium-sized industrial activities. In Kenya, Tanzania and Uganda the main objective of industrial estate programmes is to achieve African participation in the industrialization of the country. The industrial estate programmes are part of a comprehensive system of promotion of and assistance to small-scale industries. In some countries, for instance, in Ecuador, an important objective is to facilitate the transformation of artisan undertakings into modern small-scale industries.

A few examples of industrial estate policies aimed at promoting small-scale industries are given below.

India's industrial estate programme is part of that country's small-industry development plan. In its reply to the United Nations questionnaire, the Government of India stresses the role of small-scale industries in economic development. The establishment of small-scale industries provides employment, tends to achieve a more equitable distribution of the national income and facilitates mobilization of resources of capital and skill which might otherwise remain unutilized.

The need to reduce progressively disparities in levels of development between different regions is emphasized in the Indian reply. It is considered that some of the problems that unplanned urbanization tends to create will be avoided by the establishment of small centres of industrial production all over the country. One of the aims of national planning is to ensure that the facilities of power, water supply and transport are readily made available to areas which are at present lagging behind industrially and where there is a special need for creating employment opportunities, provided the location is otherwise suitable. Thus, the establishment of industrial estates is expected to facilitate industrial decentralization.

Importance is given to the role of industrial estates in overcoming the initial handicaps of small-scale industries. Next to finance, the principal difficulty which a small industrialist has to face is to find suitable accommodation. The existing small-scale enterprises are generally located in congested areas with no space for expansion. The new enterprises experience

difficulties in getting land and buildings in suitable areas with power, water, transport and other prerequisites. Where available, these facilities absorb a very large slice of the limited finances of small entrepreneurs. Industrial estates with fully improved sites and standard factories for rent are an effective means of alleviating these difficulties.

Finally, the Indian reply stresses that the grouping of small-scale industries in an industrial estate affords external as well as internal economies. It permits the establishment of common servicing centres, the introduction of modern techniques, collective purchase of raw materials and sale of finished goods. It makes it possible for the small units to use the goods and services of one another and fosters relationships of interdependence and complementarity between them. An estate helps to develop a community of interests among the units and to promote habits of co-operation and pooling of resources. Also, the grouping of industries in an estate makes it feasible for the various agencies to extend their services more effectively. The industrial estate thus provides an ideal tool for integrated development.

The reply from Pakistan stresses the role of industrial estates in stimulating the establishment of new industrial enterprises; in modernizing existing industrial units relocated on the estate, through technical assistance and guidance; in associating small industry development with urban planning, in particular, slum clearance programmes; in developing skills in new and relatively complex technological processes through training within industry; in increasing productivity through advisory services, and the provision of tooling and other common production facilities; in promoting standardization through quality control of raw materials and pre-shipment inspection, and in facilitating subcontracting relationships between large and small industries by assisting the latter in producing standardized components and parts of good quality, competitively priced and delivered on time.

Promotion of industries in general

In Australia, Ecuador, Ireland, Italy, Japan, Malaysia, Malta, Mexico, Pakistan, Puerto Rico, South Africa, Southern Rhodesia, Uganda and the United Kingdom, industrial estates for small-scale industries are often combined with industrial areas offering improved sites for heavy and large industries. In some cases, for instance in Malaysia and Singapore and in the New Towns in the United Kingdom, such facilities are part of new large-scale urban or suburban developments. The integration of industrial estates and areas presents advantages from an urban planning standpoint, affords economies in construction and operation, and stimulates the establishment of small-scale industries by opening up opportunities of subcontracting with large industries. In some cases, an industrial area may be a sufficient inducement to the establishment or expansion of small-scale industries able to put up their own factory buildings.

Attraction of foreign capital and enterprise

In a few developing countries - Ireland, Malta and Puerto Rico - the establishment of industrial estates and the provision of fiscal incentives are the main elements of a programme of industrial promotion aimed principally at attracting foreign capital and enterprises. The attraction of foreign enterprises to industrial estates is an important objective in some other countries also, for example, Australia, Canada, Malaysia, Nigeria, South Africa, Southern Rhodesia and Trinidad and Tobago.

Puerto Rico's "Operation Bootstrap", has succeeded within the decade 1950-1960 in attracting more than 700 plants from the United States, a large number of them located in the industrial estates. While tax concessions and other industrial incentives have greatly contributed to this large foreign investment, the ready availability of standard buildings in industrial estates and facilities for constructing special buildings therein are considered to have been a major inducement. The experience in the Free Airport Industrial Estate, Shannon, Ireland, and the government industrial estates in Malta has been similar, though on a smaller scale.

Promotion of particular segments of the industrial sector

The objective of some industrial estate programmes is to provide facilities for the development of specific types of industry. In Korea, an industrial estate is planned exclusively for light export industries to be operated by Korean entrepreneurs now resident abroad whose capital and entrepreneurship will thus be attracted to the country and whose activities will contribute to increasing export earnings. Industrial estates have been set up for the development of port and airport freight traffic and/or the promotion of entrepôt industries in China (Taiwan), India, Ireland, Italy, Japan, Puerto Rico, Singapore and the United States. India and Japan have established industrial estates exclusively for ancillary small-scale industries working as subcontractors for large-scale industries. "Functional" industrial estates for small industries manufacturing parts and components of a given product have been set up in India.

Regional development

Regional development policies governing the establishment of industrial estates are particularly significant in industrially developed countries which have been increasingly concerned with relieving congestion in metropolitan areas and, particularly since the great depression of the 1930's with problems of employment and growth in depressed areas. Many developing countries too, are motivated by regional development considerations in the location of industrial estates, in combination with the major objective of promoting industrialization on a small or medium scale. In these countries, regional considerations are usually subsidiary, unless the programme is sufficiently comprehensive, as is the case in India, to have a nationwide impact on the distribution of industry. The countries of western Europe provide the most comprehensive experience in regional development, the United Kingdom being a pioneer in this regard, the movement for the development of depressed areas having started in the 1930's.

concerted efforts in their western European countries since the end of the post-war period.

Since the 1930's, the Government of the United Kingdom has encouraged the establishment of industrial estates as one of the instruments for the development of depressed areas, under the Special Areas legislation of 1934 and 1937, the Distribution of Industry Acts of 1945 and 1950, the Town and Country Planning Acts of 1947 and 1954 and the Local Employment Act of 1960. The establishment of industrial estates has formed part of a comprehensive programme including investment in overhead facilities, grants and loans, temporary exemption from taxes and rates, subsidies of rent and restrictions on building construction in congested areas.

Before the war a principal objective of the industrial estate programme was to contribute to the creation of employment opportunities in specific designated areas of England, Wales and Scotland. In the post-war period, a national-wide policy of distribution of industry was adopted. The Government assumed full location control under the Town and Country Planning legislation, with a view to avoiding congestion in heavily industrialized and populated areas, and inducing new industries to settle in the Development Areas, the Unemployment Areas, the New Towns and Northern Ireland. Under the Local Employment Act of 1960, which replaced earlier legislation on distribution of industry, government action is mainly directed towards the development of areas of unemployment. Promotion of industry is the principal tool of this policy, and the provision of industrial estates plays a significant role in the programme.

In Italy, the industrial estate ("zone") of Naples was founded as early as 1904 by the Municipality under a special state law, seven industrial estates were established between 1917 and 1949, in the industrially developed northern part of the country. It is only in 1953 that an estate was opened in the underdeveloped southern part of the country, at Catania, in Sicily. In 1957 and 1959, the Government passed two laws on the development of southern Italy which stressed the role of industrial estates in the industrialization of that region and set forth uniform rules for their establishment. Under these laws, the Government assists in the creation of large areas of industrial development as well as of industrial estates of narrower scope. "Industrial areas" are encouraged in larger geographical units comprising populations of at least 200,000; "industrial nuclei" are set up in centres consisting of one municipality or part of a municipality. Besides thirteen industrial areas in northern Italy, twelve areas and twenty-seven nuclei are being developed in southern Italy. The industrial estate programme in the South is part of a comprehensive public investment programme including irrigation, reclamation, reafforestation, road-building and so on. Financial assistance and incentives such as grants towards site improvement, building costs and machinery costs, tax concessions and the like, are provided by Government agencies for the establishment of industrial estates and of industrial enterprises.

The Government of the Netherlands provides subsidies and incentives for the establishment of industrial estates and industrial enterprises in designated primary and secondary development areas (the rate of subsidy being lower for secondary areas), with a view to creating additional employment in less industrialized areas and relieving congestion in industrialized areas. Belgium, France and the Federal Republic of Germany also follow similar policies.

Area and community development

In the past ten or fifteen years, the trend in industrial estate development in the United States has shown a marked shift from the undertaking of profit-making ventures by private groups to the promotion of non-profit schemes aimed at developing certain areas or benefiting certain communities, under the sponsorship of state and local governments, private community development groups or both. In many cases, the action of local bodies has succeeded in attracting industries desirous of locating near new markets or sources of labour supply and sometimes of raw materials. The provision of sites, factories and services on industrial estates has been a major factor influencing the selection of location by newly established enterprises, branches of existing companies or by industries desirous of relocating in order to reduce costs, expand, change lines of production or for other reasons.

According to the Urban Land Institute of Washington, D.C., the major factors which have contributed to the accelerated development of "industrial districts" during the last decade and a half are: 3/

- (a) The accelerated demand for industrial land brought about by the post-war expansion and dispersion of industrial activities, especially light assembly and distribution facilities;
- (b) Lack of suitable industrially zoned land in older central cities;
- (c) Blight, traffic congestion and cramped condition of older industrial areas;
- (d) Change in plant design from multi-storey mill-type buildings to modern single and two-storey plants allowing for more efficient horizontal-line production methods but demanding larger sites;
- (e) The increased use of the automobile as a preferred method of commuting to work, making it necessary to provide ample parking space for employees at new plant sites;
- (f) Increased truck transport of industrial products, requiring additional space for service parking and loading;
- (g) A preference by institutional investors for financing construction in planned districts where security of investment is more certain;
- (h) The convenience and, in the case of small and medium-sized firms, the economy of locating a plant in a development where the bothersome and costly details of securing appropriate zoning, planning and bringing in all necessary utilities and services, preparing the plant site and so on have all been taken care of in advance by a development and management organization.

3/ Source: Reply of the United States Government to the questionnaire (see annex I).

At present less than one-third of the industrial estates in the United States are accounted for by purely profit-oriented private real estate ventures. Another 30 per cent include the industrial districts established by railroads along their lines to attract heavy freight shippers. The remaining 40 per cent are accounted for by industrial districts established by non-profit private and government-sponsored community development groups interested in securing the direct and indirect benefits that industrialization may bring to their communities in the form of increased employment, payrolls, business and tax revenues.

In many developing countries where the basic objective of industrial estate programmes has been to stimulate the establishment of small-scale and medium-sized industries, considerations of area planning and community development have played an important part in the selection of location and site. Many replies to the questionnaire stress that the successful development of depressed areas, small towns and rural areas through the establishment of industrial estates depends on integration with local community development and participation of local groups in the process of industrialization, and that industrial estate projects should be dovetailed with land use and zoning plans in order to avoid the growth of slums, unhealthy peripheral developments, unsanitary conditions and land speculation.

Puerto Rico's development of "industrial subdivisions" is closely co-ordinated with the town planning programmes of the country. In Malaysia and Singapore, industrial estates in the new towns and suburban towns have been carefully planned and co-ordinated with the development of housing, education and other facilities. The dovetailing of industrial estate development with town and country planning legislation in the United Kingdom has already been noted. In India, master plans have been drawn up for Delhi, Bombay, Calcutta and some other cities, and each state has set up a town-planning organization, with which industrial estate plans must be co-ordinated. In most countries, industrial estates assure compatible surroundings and protection from undesirable developments by use of zoning restrictions and sometimes performance standards.

Changing trends in industrial estate policies and programmes

The United Kingdom, the United States and Italy, among the developed countries, and Puerto Rico and India, among the developing countries, have so far had the most extensive experience in the establishment of industrial estates. The experience developed over a period of seventy to eighty years in the United Kingdom and the United States, fifty years in Italy, twenty years in Puerto Rico and ten years in India indicates changing trends in the policies and programmes. These changes may be considered with reference to the policy objectives and the role of the Government, on the one hand, and the co-ordination or integration of industrial estate programmes with other promotion schemes, on the other.

Role of the Government

The Government is the initiator of industrialization in developing countries and as a catalyst and regulator of the economy in advanced countries has been reflected in the rise of industrial estates. Different trends, however, are apparent not only between advanced countries and developing countries, but also among the developing countries themselves, as between those with an advanced measure of industrialization and the newly industrializing countries.

Attention has already been drawn to the marked shift in the United States during the last ten or fifteen years from privately sponsored profit-making real estate ventures to non-profit industrial estate schemes sponsored by community organizations, often in co-operation with state and local governments. While the Federal Government does not play any direct part in industrial estate developments, exemption from federal corporate income tax is available for the establishment of non-profit community industrial estates. State and local governments, especially in relatively less developed states and cities, offer both direct and indirect inducements for the establishment of industrial estates. The policies and programmes of state and local governments in the development of external economies - efficient public administration, development of roads and utilities, public transportation, fire and police protection, schools, hospitals, shopping areas, recreational and residential facilities and so on - have an unobscured influence on the selection of sites for industrial estates, provided the primary location requirement - markets, raw materials or labour - are satisfied. A number of direct inducements, for example liberalized building regulations, low sales prices or rents, gifts of land and buildings, loans at low interest rates, financing through tax exempt municipal bonds, temporary tax exemptions or abatements and so on have also been provided in many cases.

In the United Kingdom, the Government's role in the establishment of industrial estates has continuously expanded over the last thirty years. The changing trend from privately sponsored profit-motivated industrial estates to government-sponsored and government-constructed estates took place in the 1950's, when the Government took the initiative to tackle the problem of unemployment in certain "special areas", through programmes of overhead investment, relief, construction of industrial estates, grants, loans and exemption from rent, taxes and rates. In the period following the Second World War, the Government adopted in 1945, a policy of regulating industrial location and inducing industrialists to set up or expand industrial undertakings in the "development areas" - which included, in addition to the former Special Areas, some other under-developed regions of the country - through financial assistance and provision of sites and factory buildings in industrial estates. In 1947, full location control all over the country was introduced, and Government permission, including building licences for projects over 5,000 square feet (464 square metres), were required. No permission was usually granted for location in heavily congested and heavily populated areas. New industry was steered towards the Development Areas, the Unemployment Areas, the New Towns and Northern Ireland through the provision of improved sites and factories for rent on industrial estates, smaller group sites without pre-built factories and services and individual industrial sites. The most recent change in policy took place in 1960, empowering the Government to declare

any area where the rate of unemployment is 4.5 per cent or more as a "level of district" and providing in those areas financial assistance and industrial estates as inducements to industrialization. The policy objectives and objectives of the Government in the establishment of industrial estates in the United Kingdom have thus changed from aiding the rehabilitation of depressed areas in the 1930's, to regulatory distribution of industry over wider areas of the country in the 1950's and finally in the 1970's to maintaining a reasonable level of employment all over the country.

In Italy, where local governments, in co-operation with chambers of commerce or associations of industries, sponsored the establishment of eight industrial zones during the first half of this century, the 1950's marked a major shift in policies and programmes. The earlier industrial zones, all of them located in northern Italy, promoted infra-structure investments for the development of the local economy and offered developed plots of land for sale. In addition, inducements were provided for the establishment of industrial enterprises through financial assistance, tax concessions, railway freight rate concessions, exemption from custom duty on machinery and building materials, government procurement contract and the like. During the 1950's the policy objectives in the establishment of industrial zones were widened to include the over-all economic and social development of a region, and the central and provincial governments began to play an active role in the industrialization of underdeveloped regions, particularly in southern Italy. The central Government established in 1950 the Cassa per il Mezzogiorno (Fund for southern Italy) to finance a public investment programme in irrigation, reclamation, reafforestation, road-building and other overhead facilities. A law enacted in 1957, made it possible for provincial and local authorities, chambers of commerce and industry, and other interested bodies to form a consortium (public law association) for the establishment of industrial estates and for carrying out the necessary infra-structure investment. The consortia may promote the establishment of either larger "industrial development areas" or smaller "industrial nuclei". The minimum requirements for establishment of an industrial development area, which usually covers a large homogeneous area of several communes, are that it should have a population of at least 200,000, territorial planning for the whole area should be acceptable to all the communes, the area should have basic infra-structure and an effective trend towards industrialization and there should be no negative factors, for example, earthquakes and landslides. An industrial nucleus is a much smaller area, for example, a municipality, providing for only one industrial concentration as against two or three in an industrial development area. The establishment of industrial areas and industrial nuclei and the formation of consortia are subject to the approval of the Committee of Ministers for the Mezzogiorno. The Cassa per il Mezzogiorno makes grants to consortia for site improvement, building costs, installation of machinery and so on. Complementary financial assistance is provided by three regional credit institutes - one for the mainland, one for Sicily and one for Sardinia. The changed emphasis in Italy during the last ten years has thus been, in the one hand, on integrated regional development, based on a systematic study of potentialities and drawing up of a master plan and, on the other hand, providing strong support of the central and provincial governments (through the Committee of Ministers) to the initiative of local authorities, chambers of commerce and industry associations, through the formation of consortia to establish and operate industrial estates and through

institutions such as the Cassa per il Mezzogiorno and the regional credit institutions. The industrial areas and industrial nuclei in Southern Italy have not only developed the land and the infra-structure and made available to industrialists developed plots at reasonable prices. The law, however, provides for the construction and maintenance of factory buildings and organization of common service facilities.

In India, during the second five-year plan (1956-1961), industrial estates were mainly used as an instrument for the development of small-scale industries in all parts of the country. Most of the estates constructed during that period were located in or near large urban centres, where the best prospects existed for rapid occupation and the maximum demonstrative effect could be expected. Towards the end of the second five-year plan and during the current third five-year plan (1961-1966), objectives such as decentralization of industry, development of backward areas and rural industrialization began to assume greater importance. During the present plan, the emphasis is to establish industrial estates principally in semi-urban and rural areas. It is expected that the estates and the related infra-structure works will give rise to new, modern and diversified production in such areas and will contribute to check the exodus of rural population in search of employment in the already congested cities and towns. Another important objective of the current five-year plan is to develop subcontracting relationships between small and large industries and specialized manufacturing activities in, respectively, ancillary and functional industrial estates.

A significant change in India's policies has been a gradual shift from an entirely government-sponsored and government-operated programme, during the first and second five-year plans, towards assisted industrial estates sponsored by co-operative associations of industrialists or limited companies set up by industrialists. Financial and technical assistance, for example, in layout plans, blueprints and so on, are provided to the privately sponsored projects through governmental and semi-governmental institutions. According to the reply of the Government of India, there are seven industrial estates sponsored by private agencies already functioning, another nine completed and expected to function shortly, and twenty-three others under various stages of construction. It is further stated in the Indian reply that experience has shown that assisted industrial estates tend to be more successful than the government-built industrial estates, since the entrepreneurs in the latter expect too many concessions and privileges from the Government.

Further, it has now been decided that in advanced areas, the state Governments may provide only developed plots and common services, leaving the construction of factories to be carried out by the entrepreneurs. However, in small towns and rural centres, Government will continue to promote industrial estates with a full range of facilities and services.

In Puerto Rico, the first development programme, begun by the Government in the 1940's, attempted to stimulate industrial development by setting up government-owned and government-operated plants in key industries, in order to induce private industries to follow suit. However, this policy was not successful, and in 1949 and 1950 the Government enterprises were sold to private groups. Since the 1950's Government funds have been channelled into facilities and services aimed at attracting capital and entrepreneurship from the United States. A comprehensive programme of incentives was to attract foreign capital and entrepreneurship, an intensive

promotional campaigns in the United States and a programme of construction of industrial estates, providing pre-built factories as well as developed plots, was undertaken. Since the late 1950's the policy has tended to encourage the establishment of Puerto Rican enterprises and of other ventures through financial incentives and land allocation.

Policy co-ordination and integration

In their replies to the questionnaire certain countries stress that the establishment of industrial estates is only one measure, though a most important one, in an over-all programme aimed, according to the country, at the promotion of small-scale industry, regional or area development, or other objectives. These countries do not consider that the establishment of industrial estates would be enough to achieve these objectives. At the same time they feel that the over-all programmes would not be effective if they did not include industrial estate projects.

Besides the provision of pre-built factory accommodation with facilities of water, power and transportation in industrial estates, India's programme of promotion of small-scale industry includes hire-purchase facilities for the procurement of equipment, credit facilities for working capital, provision of common service facilities, preferential supply of scarce raw materials, technical assistance, training and a variety of specialized services, for example, for export promotion, quality control, industrial design, prototype machinery and so on. Pakistan's programme for small-scale industries also includes most of these facilities. A comprehensive system of inducements, especially tax concessions and of services to industry complements Puerto Rico's industrial estate programme. In the United Kingdom, training grants, training facilities and grants towards meeting the cost of plant and machinery are used together with industrial estates as means of developing unemployment areas.

In other countries only a few measures - usually tax concessions - are generally adopted to complement the industrial estate programme. Elsewhere, reliance is put only on industrial sites and industrial estates, and some countries have expressed, in their replies to the questionnaire, their awareness of the fact that the lack of success of their industrial estates was due to the absence of complementary incentives and measures of promotion and assistance.

The awareness of the need, not only for complementary measures, but also for a co-ordinated or integrated programme of industrial promotion is a major new development which should lead to the adoption of measures which would considerably increase the effectiveness of the industrial estates and strengthen their role in industrial development. It is increasingly realized that the number of industrial estates which Governments can set up will necessarily be limited, and that the majority of small-scale industries will remain and settle outside of the estates. These industries will need assistance other than factory accommodation, and the Governments should be prepared to provide them with financial, technical, managerial, marketing and other services and support. The pilot industrial estate projects will serve to stimulate industrial entrepreneurship not only on the estates but also outside of them. By placing their various facilities, in particular the industrial extension, counselling, information and training services at the disposal not only of the occupants but of outside industrialists, the industrial estates may become

nuclei of industrialization in broad areas. Also, the pilot projects will provide example and demonstration to local governments and private groups and induce them to set up their own industrial estates.

It is also realized that industrial estate programmes for the development of small-scale industries should be co-ordinated with general industrialization programmes. A new tendency is to combine, on the same tract of land, an industrial estate for small-scale industries and an industrial area for large industries, one of the advantages being the promotion of auxiliary and complementary relations between them. Increasing attention is also given to the co-ordination of industrial estate programmes with regional development, urban development and redevelopment zoning and other land use planning schemes.

Chapter II

Planning and organization of industrial estates

Sponsorship

Industrial estate projects have been sponsored by a variety of agencies in the different countries. In the industrial countries, the earliest estates were established by private real-estate developers or profit-motivated limited companies. Direct government sponsorship began in the United Kingdom in the 1950's and major developments since the 1950's have been largely sponsored by Governments, though in some countries, for instance, Australia, Canada, South Africa and the United States, private sponsorship continues to play an important role.

In the developing countries, the initiative and responsibility for setting up the first industrial estates are taken by the Government. In these countries, private, institutional and community organizations usually lack the means and experience to organize and finance industrial activities, and only the Government is able to provide the external economies, the financial incentives and the measures of promotion and assistance needed to stimulate, guide and support private entrepreneurial efforts. Once a government-sponsored industrial estate programme has taken sufficient momentum, attempts are sometimes made to stimulate private participation, in the form of either joint or co-operative sponsorship.

Private industrial estates are sponsored by real-estate development companies or corporations, railroad and utility companies, co-operatives or associations of industries, chambers of commerce, industrial foundations, and universities and research institutions.

Industrial estates aimed at promoting real-estate interests are particularly numerous in the United States, where they are set up as incorporated companies, and in Australia, Canada, South Africa and the United Kingdom, where they take the form of limited liability companies. Railroads and utility companies are sponsoring industrial estates mainly in the United States and Canada, either in co-operation with private developers and real estate brokers or through subsidiary industrial land companies. Chambers of commerce or industry are particularly active in the United States and Canada, where they frequently form industrial development corporations or site-development foundations in co-operation with local groups or municipal or state governments. Co-operative industrial estate associations exist in Japan, where local laws encourage their establishment. In India, the setting up of industrial estates by co-operative societies registered under local co-operative laws and associations of entrepreneurs registered either as non-profit societies or as private limited liability companies is encouraged and assisted by the Government. Industrial foundations are common in the United States and the Netherlands. These are non-profit organizations founded by private groups, chambers of commerce and local governments. They are known as industrie stichtingen in the Netherlands, and as industrial development corporations, community development corporations or site-development foundations in the United

States; the Italian "consortia" have a similar composition. A few universities and research institutions in the United States utilize endowment funds and other grants to establish non-profit foundations for operating industrial estates.

The government agencies sponsoring industrial estate projects include ministries, departments, divisions of central or provincial governments; municipalities or local authorities; government-owned companies or corporations; a commission or authority established by government, for example, port authority, airport authority, transport commission, housing board and so on, and a national bank or financial corporation.

The most prevalent form of sponsorship of industrial estates is through autonomous or semi-autonomous agencies set up by governments. Such agencies are able to devote fuller attention to the programme, to adopt more flexible methods and to take quicker decisions than is normally possible under direct government operation. They are particularly useful where a network of industrial estates or a comprehensive programme of site development and area planning have been undertaken. The Industrial Estate Management Corporations for England, Scotland and Wales are typical examples of such agencies. Autonomous industrial estate authorities exist in Ceylon, Iran, Ireland, Jamaica, Malaysia, Nepal, Pakistan, Puerto Rico, and Trinidad and Tobago.

In India, industrial estates are sponsored by the state governments, technical co-ordination and financing being provided by the central Government. The provincial governments sponsor industrial estates in China (Taiwan). In Malta, Nigeria and the United Republic of Tanzania, the departments of industry sponsor industrial estates in co-operation with other government departments.

Municipalities and local authorities sponsor industrial estates in Canada, the Netherlands, South Africa and the United States, often in co-operation with local groups or chambers of commerce.

In other countries, industrial estates are sponsored by development corporations, small-scale industry development corporations, housing trusts and other bodies. Sponsorship by a national bank and a financial corporation is found in Mexico.

Types of estates

The main types or categories of industrial estates so far developed can be distinguished according to the type of facilities provided, location and function.

According to type of facilities

Industrial estates differ according to the nature and extent of facilities provided. The most common type of industrial estate is that offering standard factories and common service facilities as an inducement for the establishment of small-scale industries. Estates with such facilities exist in Ceylon, China (Taiwan), Japan, India, Israel, Ireland, Malaysia, Malta, Nepal, Pakistan, Puerto Rico, Singapore, Trinidad and Tobago, and the United Kingdom. Besides pre-built standard factories, some of these countries also provide improved sites

and custom-built factories for large-scale and medium-sized industries, multi-factory buildings for light and service industries, and sometimes nursery factories for new small-scale industries. The characteristic type of industrial estate in Israel consists of a number of flatted factories (multi-storied factory buildings). In other countries, the single-storied building is usually preferred to the multi-storied building, except in a few estates in Hong Kong, the Netherlands and Singapore. In the United Kingdom, some group sites with developed and serviced plots have also been made available for special types for industries. In China (Taiwan), India, Japan, Malaysia, Pakistan, Singapore, and Trinidad and Tobago, improved sites in industrial areas have been provided for large and medium industries. In African countries, the industrial area rather than the industrial estate is thus far the prevailing form of industrial clustering.

In Canada, Jamaica, South Africa, Southern Rhodesia, the United States and western Europe, industrial estates generally provide for serviced sites and control of the tract and buildings. Factories are usually custom-built and financed either by real-estate builders, commercial institutions or government-sponsored development corporations. In the United States, the developer often undertakes construction of factories and installation of plants for the tenants; there is a growing trend for the developer to provide a "package" or "turnkey" deal, which includes location, design, construction and financing of new facilities on an ownership or net lease basis. In France and Italy, state-sponsored financial agencies provide the finance for buildings and equipment.

The extent of facilities and services to be provided depends upon the location and the type of industries to be promoted. Almost all the industrial estates provide such facilities as power, gas, water, transport, fire protection, watch and ward, first aid, canteen and so on. Only some of the estates provide additional general facilities, such as warehouses, show rooms, reading rooms, conference rooms and so on. Some estates, generally in developing countries, provide, in addition to general facilities, special facilities, such as extension centres for technical servicing of tenant units, training centres for workers or managers, maintenance and repair shops, machine lease shops, tool rooms, testing and quality control laboratories, common service facilities in machinery, foundry, forge, electroplating and so on.

According to location

Estates may be located in metropolitan, urban and suburban centres, in small towns and semi-urban centres, or in rural centres. They may be attached to ports, airports, railroad centres or located near highways or truck transport terminals. In each case, location has to be carefully planned through feasibility studies taking into account the infra-structure requirements, the availability of factors of production and the types of industries to be promoted.

In most countries industrial estates have been located in or near urban areas, where the best prospects for rapid occupancy exist. The concentration of industrial estates near metropolitan areas in the developed countries may be illustrated with reference to the United States. Urban areas of 1 million or more account for 40 per cent of the total number of estates, while those with population between 100,000 and 1 million account for another 31 per cent of the total. The remaining

29 per cent, located in smaller towns, are mainly estates sponsored by community groups and joint government-private groups to attract new industries to areas of chronic unemployment or lagging economic growth.

In the developing countries having a rudimentary industrial structure the tendency has been to locate industrial estates in big cities and towns. The reasons are (a) infra-structure facilities are available only in the big cities and towns; (b) the estates are expected to have a demonstration effect to bring forth entrepreneurship and stimulate similar activities from the trading and business class; (c) since industrialization is the major objective, growth potential has higher priority than dispersal of industries, and (d) slum clearance and city improvement programmes necessitate provision of alternative accommodation to displaced small industries in or near the city. In some countries, for example, Hong Kong, Israel, the Netherlands and Singapore, flattened factories have been constructed within city limits to provide for resettlement of displaced industries or as nurseries for new enterprises. Such flattened factories are particularly useful for service industries and light small-scale industries, where there is acute scarcity of land for industries.

In many countries industrial estates have been established in small towns, with a view to promoting dispersed industrial development as well as for shifting industries from congested areas to depressed areas. In India, out of 319 industrial estates already functioning or being established, 66 are located in rural centres with a population of less than 5,000, 125 in semi-urban centres with a population between 5,000 and 50,000, and 128 in urban centres with population over 50,000. One of the conditions for the establishment of industrial estates in small towns is that these should have a certain minimum development of infra-structure - water, power, communications, transport and the like. Developing countries have usually selected provincial or district capitals, fairly developed up-country market or distribution centres, highway junctions, centres with concentration of artisans and so on. Since there are not many small towns with requisite facilities available in many developing countries, it is considered important to select carefully the most advantageous location consistent with the needs of industrial development. In the industrial estates of small towns, services and facilities have to be provided on a more comprehensive scale than in those of big cities, because of the absence of alternative sources for such services and facilities.

There has been very little experience of location of industrial estates in rural areas, as one of the instruments for rural industrialization, except perhaps in India. India's experience indicates that there are severe limitations in industrializing rural areas, most of which lack the minimum facilities required for industrial development. Locations for rural estates have, therefore, to be selected very carefully and often it has been found advantageous to select areas with concentration of traditional skills or particular types of resources. It has also been found necessary to tie up with programmes of other agencies for development of economic and social overheads, for example, technical training, education, transportation, electricity and so on. The experience has been that often it is more useful and more economical to provide only a few workshops, with training, repair and maintenance and some machine-leasing facilities, instead of a conventional industrial estate. Rural industrial estates planned for sixty-six centres have thus far not been very successful in India, and current thinking emphasizes the development of selected small towns and semi-urban

centres - which are the transport and market centres for surrounding rural areas - as growth centres, through the provision of fiscal and financial incentives, besides other measures of technical and financial assistance. In this connexion, Puerto Rico's system of zoned differential incentives to attract industries to industrial estates in outlying areas provides an interesting experience for developing countries.

Estates attached to ports or airports in order to stimulate freight traffic or entrepôt trade or export industries have been established in China (Taiwan) (Kaoh-Siung), India (Mandla), Italy (Marghera), Ireland (Shannon), Jamaica (Kingston), Malta (Iarsa), Singapore (Jurong) and the United States (El Paso, Cancho Conejo).

According to function

The industrial estates so far established in most countries are, by and large, non-specialized; in the developing countries, they provide accommodation for all categories of small-scale and medium-sized industries; in the advanced countries, for all categories of light industries; and in some countries, separately zoned areas or estates for large and heavy industries. Restrictions are usually placed on "obnoxious industries" and, in many cases, on heavy consumers of water and power.

Although non-specialized general-purpose industrial estates are the most prevalent, a few countries have established industrial estates of special types, which may be distinguished on the basis of their functions. These are single-trade estates, functional estates, ancillary estates, nursery estates and research estates.

Single-trade estates provide factory accommodation exclusively to industrial enterprises belonging to the same trade. The chief advantages of single-trade estates are effective and economical organization of common service facilities, technical assistance and training; collective purchase of raw materials and joint efforts in sales of finished products; and modernization of industries using traditional methods of production and organization. The industrial estate for the leather industry being established on the outskirts of Cairo is an example of a single-trade estate. This project is intended primarily to modernize and relocate the traditional tanneries of the city.

A functional estate is one in which the functions of one industry are subdivided among a number of small-scale units located in one place, each functioning according to a co-ordinated manufacturing programme. The main advantage of a functional estate is that it can provide to small-scale units the economies and efficiencies of specialization and large-scale production. Functional estates are particularly suitable for co-operative ventures. They also encourage small industrialists to enter new fields of manufacture which normally may not be feasible on a small-scale basis. Japan has a number of functional industrial estates (for example, wood-working, ready-made clothing, machine tools), and India has established or is planning to set up functional industrial estates for radios, clocks and timepieces, ceramic products, automobile ancillaries, electronic components, scientific instruments and electric meters.

Ancillary industrial estates are organized in order to locate small-scale units manufacturing different components, parts and stores required by one or more large industrial units, on a subcontracting basis. They are located generally in close proximity to the large industrial unit or to a complex of large-scale units in order to facilitate technical supervision and economic transport. India and Japan provide examples of such industrial estates. In Toyama, Japan, an industrial estate has been set up by thirty-nine medium and small-scale enterprises, which work as subcontractors to the Fujikoshi Steel Industry Co., Ltd., manufacturing parts and components of precision machine apparatus. In Bangalore, India, the Hindustan Machine Tools, Ltd., a large public sector enterprise, has set up an industrial estate, where fifty small-scale enterprises manufacture castings, forgings, parts and components for the large factory.

Nursery estates are those which provide "nursery" or "nest" factories to meet the transitional space requirements of small enterprises as they develop from one phase of growth to another. The nest factories are divided into small workshop units, and as the small industrial enterprise grows it is allowed to occupy more and more workshop space. Ultimately, it has to vacate the estate and set up its own factory building, and the space can be allotted to a new unit. Apart from special nursery estates, a block of nursery factories may be set up in an industrial estate with different sizes of standard buildings; when an industrial enterprise outgrows the maximum size of a nursery factory, it can move to a standard factory in the estate. Nursery estates and nursery factories have been established in Canada, Nigeria, Singapore and the United Kingdom. For developing countries an industrial estate with different sizes of standard factories (and a block of nursery factories) is often preferable to one having only nursery factories (a nursery estate), since in the latter successful small-scale units would often be penalized by being forced to leave the estate (for outside accommodation of higher rent), whereas in the former they would be induced to grow by allowing them to move from the nursery factory to a standard factory.

In Canada and the United States, "research parks" are located in proximity to universities with active research programmes. The tenants of such research parks are limited for the most part to those engaged in research-oriented activities and compatible operations. In this way company scientists are afforded the academic and cultural environment they prefer and close communication with basic research activities so vital to applied research. The basic idea in establishing a research estate is to stimulate the industrial utilization of scientific and engineering skills available near a university or government research and development centre. Such parks often feature an electronic computer and a common service facility. The primary emphasis is on research-oriented industries, but some light manufacturing is sometimes also permitted.

There has not as yet been adequate international experience of the special-purpose industrial estates described above. Available experience indicates that their establishment requires careful study and should be considered only if it is demonstrated that a specialized estate is to be preferred to alternative projects. In particular, the development of ancillary relationships between large parent firms and small-scale enterprises may require a number of regulatory and promotional measures, on the one hand, to prevent abuse and exploitation of small-scale units by the large-scale units, and, on the other hand, to introduce quality control and precision, upgrade technology and skills, enable financing of

operations and so on in the small-scale enterprises. In addition to maintain functional industrial estate, the structure of market relationships, the compatibility of different producers and so forth have to be carefully weighed. Technical and financial assistance, quality control and product promotion assistance are often necessary to enable the enterprises to derive maximum benefits from location in a functional industrial estate. In each case, the decision to establish a special-purpose industrial estate has to take into account the problems of small-industry growth in the particular country, the related policies and programmes in the country and the structure of financing, marketing and interindustry relationships.

Size of industrial estates

A number of considerations is involved in determining the appropriate size for an estate. The objectives in setting up the estate, the type of estate to be set up, the type of industries to be promoted, the location of the estate, the number of factories to be accommodated, the cost of land and its development, the scale of industrial operations envisaged, the employment envisaged, the relation to transportation facilities for goods and for workers, the required space for trucking and parking, physical planning and engineering standards required for the particular environment and the particular type of industries, or modes of service in the provision of services and utilities, and optimum scale of management possible - all these interrelated factors influence the size of an industrial estate. Pre-project planning for an estate usually includes a feasibility study in the area, which provides the necessary information for determining the site, the size of the estate, the number and type of factory buildings, the utility requirements and the like. Thereafter, a master plan for the estate is prepared taking into account the physical planning and engineering standards, layout of land utilization, sizes of plots and buildings, roads and streets, drainage, utilities and so on.

Information furnished in reply to the questionnaire brings out wide variations in the size of existing and contemplated industrial estates in different countries. The smallest size is two acres (0.81 hectares) ^{4/} for estates in Malaysia and India, and the largest 25,126 acres (10,176 hectares) for an industrial district in the United States. However, these are extreme cases and not typical sizes of industrial estates. There are small estates of about 5 acres (about 2 hectares) in developed countries like the United Kingdom and the United States, one estate of 700 acres (about 283 hectares) in Malaysia and 1,500 acres (about 607 hectares) in Pakistan.

It may be of some guidance to analyse the size characteristics in different countries. Size classification by categories of small, medium, large and very large differ between countries, and what is small in a developed country might be medium or large in a developing country. A survey of 55 industrial estates in the United Kingdom in 1959 indicated that 49 per cent of the estates were small (up to 50 acres or 20.25 hectares), 15 per cent were medium (51 to 100 acres or 20.65 to 40.5 hectares), 24 per cent were large (101 to 500 acres or 40.9 to 202.5 hectares) and 12 per cent were very large (over 500 acres or 202.5 hectares). In India, estates over 30 acres (12.15 hectares) in size are regarded as large.

^{4/} One acre = 0.405 hectares.

between 10 and 30 acres (4.05 to 12.15 hectares), as medium, and under 10 acres (4.05 hectares), as small. Out of 121 functioning estates for which information was available in 1965, 38 were more than 30 acres in size; 57 between 10 and 30 acres and 32 less than 10 acres in size. Of these, 3 estates were more than 100 acres (40.5 hectares) in size. In the United States about 25 per cent of the industrial estates are 100 to 200 acres in size (40.5 to 81 hectares) and the most frequent sizes are 50 to 99, 100 to 199 and 200 to 499. Estates of 500 acres (202.5 hectares) and above accounted for less than one fifth of the number of estates studied.

From the point of view of physical planning and engineering standards, experience has been that an estate must be large enough to achieve economies of scale in the provision of services, special buildings and public utilities. On the other hand, the scale should not be so large as to create problems of traffic, administration and so on. Standards of economic size will vary from country to country and location to location, depending on the cost of land and its development, the cost of utilities and services and the extent to which infra-structure investment is subsidized or facilities are already available. In the United Kingdom, an estate of 30 to 50 acres (12.15 to 20.25 hectares) is regarded as the minimum size and 100 to 150 acres (40.5 to 50.75 hectares) as the maximum size for economical provision of services.

Another yardstick for estimating the size of an estate is the total amount of employment the estate is expected to provide. This in turn involves some estimate of the probable future density of development in terms of workers per acre of industrial land allotted. It may be difficult to estimate density standards, since employment density per acre varies from one industry to another. However, the techno-economic studies carried out at the planning stage to ascertain the type and number of industries likely to be set up on the estate will provide some indication of the prospective size of the estate.

The size of an estate may also be related to the proportion of a given total population (in a town or a region) which may be engaged in the types of employment likely to be afforded by an industrial estate. In the New Towns in the United Kingdom, calculations are made on the basis of employment in the industrial estate for 17 to 20 per cent of the local population. Sizes of industrial estates can also be worked out on the basis of norms relating to number of workers per site acre or the average floor space required per worker. ^{5/}

Density standards are used in most countries by civil engineers in planning the size of factory lots, layout and design of factory buildings, even where employment is not the main objective. In France the calculation is based on an average employment ratio of 50 to 70 persons per hectare (or roughly 20 to 30 persons per acre). In the United States it varies from 20 to 30 workers per site acre. In Puerto Rico, the average ratio is 5 employees per acre (about 12 per hectare) for heavy industry, about 19 per acre (about 47 per hectare) for semi-heavy industry and about 39 per acre (97 per hectare) for light industry. In India, apart from providing for the requirements of a range of different types of industries (by providing a number of different sizes of standard factories),

^{5/} For a detailed discussion see The Physical Planning of Industrial Estates (United Nations publication, Sales No.: 62.II.B.4).

provision is also made for expansion of factories and expansion of the estate as a whole, for roads, open space, administrative buildings, and buildings for general services and special services. Emphasis in planning is on the best, economical and efficient utilization of space. Norms adopted in India are presented in the annex to this chapter.

The sizes of factory plots exhibit wide variations. These depend largely on the technical and economic characteristics of the industries produced. Available information indicates sizes varying from extremes of 660 square feet (61.38 square metres) to 1,408 acres (570 hectares). Most estates provide for a few different sizes of plots to accommodate different types of industries. In the United States over 70 per cent of the estate occupants had factory plots of sizes ranging from 1/2 acre (0.202 hectares) to 5 acres (2.025 hectares). In the United Kingdom, sizes of plots range from 1,500 square feet (139.5 square metres) to 325,000 square feet (30,225 square metres), the average size being 40,000 square feet (3,720 square metres). In developing countries, for example, Ceylon, China (Taiwan), India, Malaysia and Pakistan, plot sizes generally range between 2,000 square feet (186 square metres) and 15,000 square feet (1,395 square metres).

ANNEX

Guidelines for industrial estate planning in India

In India, norms have been established by a committee of experts for sizes of industrial estates, distribution of space in the estate, sizes of factory plots, and percentage of initial and expanded covered areas. These may be of interest to other developing countries.

"The estates to be planned in future may be classified according to sizes as under:

- (a) Large estate - over thirty acres
- (b) Medium estate - between thirty and ten acres
- (c) Small and rural estate - under ten acres
- (d) Workshop - under two acres

"The layout of the estate should be done in such a way that the following percentages of utilisation may be achieved:

Table A-1

| Facility | Large | Medium | Small |
|---|--------------|--------|-------|
| | (Percentage) | | |
| Factory plots | 55 | 50 | 40 |
| Roads and open spaces | 35 | 35 | 40 |
| Administrative, auxiliary and amenity buildings | 10 | 15 | 20 |

The factories in an industrial estate may be of different sizes according to the requirements of the occupants. The largest plot to be provided in an industrial estate should not exceed 15,000 square feet (one square foot = 0.093 square metres) out of which 9,000 square feet could be built immediately with a provision of expansion to 12,000 square feet leaving 3,000 square feet as open space. The smallest plot could be of 2,000 square feet. Between these limits the sizes of the plots, covered area, and provision for future expansion are shown in the following table:

Table A-

| Type | Size of plot | Initial cov. area | Expanded area |
|---------------|-------------------------|-----------------------|-------------------------|
| (Square feet) | | | |
| A | 2,000 (40' x 50') | 400 (20' x 20') | 1,000 (20' x 50') |
| B | 2,000 (40' x 50') | 500 (25' x 20') | 1,000 (20' x 50') |
| C | 4,000 (40' x 50') | 1,000 (20' x 50') | 2,000 (40' x 50') |
| D | 4,000 (40' x 50') | 2,000 (40' x 50') | 2,000 (40' x 50') |
| E | 9,000 (90' x 100') | 4,500 (60' x 75') | 1,000 (20' x 50') |
| F | 11,500 (115' x 100') | 5,000 (50' x 100') | 7,000 (70' x 100') |
| G | 13,500 (135' x 100') | 6,000 (60' x 100') | 1,000 (20' x 50') |
| H | 15,000 (150' x 100') | 8,000 (80' x 100') | 10,000 (100' x 100') |
| I | 15,000 (150' x 100') | 9,000 (90' x 100') | 11,000 (110' x 100') |

- Note.**
1. Dimensions are only given in round figures and may be varied.
 2. The space could be multiples of 20, 25, and 30 or larger.
 3. Internal partition for stores, office and so on, should be left to the occupants.

In the case of small and ~~small~~ industrial estates sheds of sizes smaller than 400 square feet may also be provided. The sizes of plots in small industrial estates would be as in the following table. Surely would such estates need large sheds."

Tab A-3

| Type | Size of the plot | Initial covered area | Expanded covered area |
|------|------------------|----------------------|-----------------------|
| | | (Square Feet) | |
| A | 1,000 | 200 | 400 |
| B | 1,000 | 250 | 500 |
| C | 2,000 | 400 | 1,000 |
| D | 2,000 | 500 | 1,000 |
| E | 4,000 | 1,000 | 2,000 |
| F | 4,500 | 2,000 | 3,000 |

Source: Government of India, Report of the Sub-Committee on Industrial Estates, Small-scale Industries Board, 1955.

Chapter III

Management of Industrial Estates

Administration

The administration of an industrial estate is related to the type of sponsorship, the objectives of the estate and the extent of services and facilities provided. In the developed countries, whatever the type of sponsorship, there is generally a considerable degree of autonomy in management. In the developing countries, initially the Government or an agency set up by the Government plays the major role in establishing the estate or first series of estates; after some progress has been made, autonomous or semi-autonomous forms of management are sometimes adopted to ensure speedy and efficient administration. In a few countries, different agencies are concerned with the sponsorship, construction and management of industrial estates, and the provision of the various facilities and services.

Except in the case of privately sponsored industrial estates, the management of most of the industrial estates established so far is either by governmental agencies or by autonomous institutions established by Governments. All the industrial estates in Japan and a few recently established in India, are managed by co-operative associations of small industrialists.

Government management

India, China (Taiwan), Nigeria and Malta provide illustrations of direct government management.

In India, most of the industrial estates functioning today have been set up by the state governments, with financial assistance and technical guidance from the central Government. The directors of industries of the state governments organize the construction of the industrial estates (through the state public works department or, in a few cases, through construction divisions of the industries directorate), arrange the allotment of factory sheds or of developed plots to entrepreneurs, and are responsible for the collection of rent or hire-purchase instalments. They are assisted by estate managers who have an office on the premises of the industrial estate for day-to-day administrative matters and provision of general services.

The management of the industrial estate does not interfere with the organization and operation of the enterprises in the estate. However, advice is provided by technical assistance agencies of the state and central governments on the type of machinery installed, quality of products and so on.

While general services - power, water, internal transport, fire protection, watch and ward, canteen, medical care and so forth - are controlled by the estate management, training, technical assistance and common service facilities are usually under the management and control of other state or central government agencies.

In most the estates, the tenants have formed associations which represent them vis-à-vis the management, discuss common problems and make suggestions for improvement.

Within each state, industrial estates are planned by the state government and programmes are co-ordinated at the all-India level by the central government, funds being provided within the framework of the five-year plans. The development commissioner for small-scale industries of the central government co-ordinates the activities of the state directorates of industries in the field of industrial estates and lays down planning standards and norms.

In China (Taiwan), Malta and Nigeria a multiplicity of governmental agencies is concerned with the construction and management of industrial estates. In China the provincial government has appointed for each industrial estate a development committee representing central, provincial and local government organizations. The development committee is organized into three sections, namely, engineering, management and financing. The engineering section is responsible for the construction of roads and utilities and works under the supervision of the Public Works Bureau. The management section deals with admission and occupancy, lease deeds and sales. The financing section deals with cost of development and determines rents and sales prices. In Malta, planning of the estates is in the hands of the Department of Economic Planning and Finance; construction and maintenance are the province of the Public Works Department; allocation of factories and control of industrial activities are exercised by the Department of Industry; enforcement of deeds or leases and collection of rents are done by the department of Land; working conditions, including health, safety and welfare requirements, are enforced by the Department of Labour. In the Yaba industrial estate in Nigeria, the Ministry of Works is concerned with construction and maintenance, the Ministry of Internal Affairs (Land Division) with leasing of land and occupancy contracts, and the Ministry of Commerce and Industry with admission policies, collection of rent and assistance to occupants. The lack of unified administration has given rise to considerable difficulties in the management of the industrial estate in Nigeria, and the industrial areas subsequently established by regional governments in other parts of Nigeria have been placed in each case under unified management by a single governmental agency. China (Taiwan) proposes to establish either an autonomous agency to manage all the industrial estates, or replace the development committees with service centres for each estate.

It should be noted that the difficulties arising from a multiplicity of governmental agencies involving themselves in the management of industrial estates have been appreciated by most Governments. In a majority of the countries where Government is the sponsor, autonomous or semi-autonomous corporations, companies or boards have been set up to construct and/or manage the industrial estates. Ceylon, Jamaica, Pakistan, Puerto Rico, Singapore, Trinidad and Tobago, the United Kingdom and recently some state governments in India have set up such agencies, though retaining varying degrees of control over their management and operation. However, the pattern of management through corporations is similar in all these countries. The arrangements in Singapore, Puerto Rico and the United Kingdom will be outlined below to illustrate the structure and methods of management.

Since Singapore is undertaking a comprehensive programme of building a series of new towns and industrial estates arranged peripherally around the island, the organizational pattern evolved may be of special interest. On the recommendation of a United Nations team of experts, the Singapore Government established the Economic Development Board in 1961. It is now the central agency for promotion, over-all co-ordination and development of industry and industrial sites in the State. Applicants for land are normally allotted sites within the estates, which are planned in anticipation of demand and where developed plots are readily available. The Board also provides technical services and financial assistance. The planning, development and management of four industrial estates are entrusted to the Board's Industrial Facilities Division, whose personnel includes a chief surveyor and planner, a land and estates manager and a chief engineer. The occupants do not have a direct say in management, but manufacturing, commercial and banking interests each have a representative on the Board. Six of the earlier industrial estates have been developed by, and continue to be under the management of, the Housing and Development Board, another agency set up by the Government, primarily for house-building. A third agency in Singapore is the Singapore Factory Development Ltd. (SFDL), a subsidiary of the Colonial Development Corporation, which builds factories, both in the estates of the Economic Development Board and those of the Housing and Development Board, and provides financial assistance for the purchase of land and standard factory buildings, and the erection of factories on improved sites.

The Puerto Rico Industrial Development Company (PRIDCO), established in 1949 by the Government, is the financial and real-estate arm of Puerto Rico's Economic Development Administration (EDA) - a Government agency in charge of industrial promotion. The estates are managed by the President and General Manager of PRIDCO under its by-laws. Construction of the estate is carried out under the supervision of PRIDCO by private contractors. PRIDCO is organized as a public corporation, but is very closely linked to the Government's Economic Development Administration. It is provided in the by-laws of PRIDCO that "the powers of the Company shall be vested in and exercised by the Administrator" (of EDA), and that he "may exercise all such powers and do all such lawful acts and things as are permitted by the Company's Organic Act". Moreover, the president and general manager, who is the chief executive officer of PRIDCO, is appointed by the administrator of EDA and is subject to restrictions, limitations and directions from the administrator in the management of the affairs of the company. PRIDCO does not exercise any control over the management of individual companies. The lease agreement between the company and a tenant provides for the submission of an annual statement to PRIDCO by the tenant company showing particulars of investment by the company. The agreement also provides that advance information, as far as possible, should be furnished to the company on any shut-downs of plants; a shut-down for a period of six consecutive months is deemed a default of the contract, enabling PRIDCO to terminate the lease, unless the shut-down is unforeseeable or could not be prevented.

In the United Kingdom, there is a considerable degree of control by the Board of Trade over the construction and management of industrial estates. Until 1960, industrial estates were constructed and managed by "trading estates companies" established by the commissioners of the Board of Trade. There were five such companies, and their jurisdiction covered specified "development areas" in different regions. With the adoption of the Local Employment Act, which covered the entire country, the estate companies were replaced by three management corporations, one each for England, Scotland and Wales. Each management

corporation consists of a chairman and four members, appointed by the Board of Trade, and most include one or more persons with experience in accounting, building or estate management, and also one industrialist and one trade unionist. These are part-time appointments, except in the Corporation for England where there is a full-time chairman, who carries out the duties of the general manager. The other two corporations have separate full-time general managers. The general manager is the head of the permanent full-time staff and has general responsibility for the management of the estates and sites, including the construction of factory buildings. The Board of Trade issues directions to the corporations on such matters as capital expenditures and the form of accounts. Apart from these major financial matters, guidance is also given on terms of lease, rent policy, staff salaries and so on. The corporations are empowered to make appointments and promotions to posts up to a certain level, but at higher levels the approval of the Board is required. Further, the Board of Trade holds the freeholds of all land and properties, and grants leasehold interest usually for a period of ninety-nine years to the management corporation. Each capital project (factory building, development of land and so on) is submitted by the management corporation concerned to the Board of Trade which, after full consideration of the cost, employment and location, either rejects the application or grants a covering financial authority enabling the corporation to proceed. From the receipt of such authority, the management corporation acts as a commercial developer would do, instructing architects, seeking tenders and entering into building contracts. The management corporation supervises the contracts and hands over the complete buildings to the tenants. A number of estate managers, under the control of the general manager, operate area offices, each covering one large and a few smaller adjacent estates and group sites.

The management corporation does not control the organization and operation of the enterprises on the estate. Tenants on the estate commonly form associations through which common problems can be presented to the management.

Private management

Management of private industrial estates is carried out through organization of limited liability companies in countries such as Australia, Canada, South Africa and the United Kingdom; through establishment of incorporated companies, industrial land companies or real-estate companies in the United States; through establishment of industrial foundations in Italy, the Netherlands and the United States.

Limited liability companies are managed by a board of directors, elected by the shareholders. The principal officers are the chairman and the managing director. Sometimes the board of directors appoints a general manager. The board appoints service personnel, while the managing director or the general manager appoints the junior personnel. The incorporated companies also have a similar structure of organization, the president and the board of directors being elected by the stockholders. The board of directors and the principal officers have considerable powers of management in both limited liability companies and incorporated companies, and are subject only to periodical review by the general body of investors; rules and regulations are also approved by the general body.

Railroads in the United States usually operate industrial estates through private developers or real-estate brokers. A few railroads, however, have formed subsidiary land companies to manage industrial estates in the land owned by them.

Industrial foundations, which are known as consortia in Italy, industriële stichtingen in the Netherlands and site development foundations, industrial development corporations or community development corporations in the United States, are set up jointly by chambers of commerce or industry associations and state, regional, local or municipal governments. The foundation is usually managed by elected directors representing investors in the foundations. In the United States, the work of management is distributed among committees for different functions, planning, finance, publicity, engineering, construction, legal and so forth. In the Netherlands and the United States, they are usually non-profit organizations, though in the latter country some operate on a profit basis. In Italy, the consortia are organized as public law associations.

Co-operative management

Co-operative associations in Japan set up for the establishment of industrial estates are governed by various local laws. A group must consist of not more than twenty members and must be a member of an association for business co-operatives. The members must be engaged in the same or related business and most of them must move to the estate. They must be willing to co-operate in operating joint facilities. Land is leased to associations by the Central Bank for the Agricultural and Forestry Associations and by the associations to the members. The association purchases the land, undertakes the construction of factories, has the ownership of land and factories, and manages operation of the estate and of common facilities established therein.

Extent of managerial responsibility and control

An analysis of replies to the questionnaire shows that while in the advanced countries the management of industrial estates is concerned mainly with rules and lease of land and buildings, maintenance of roads and buildings, and enforcement of contractual relationships between owner and tenant, in developing countries, on the other hand, industrial estate managements have to cover a wider range of interrelated functions. Since the objective of industrial estate programmes in developing countries is not merely the provision of factory accommodation, but also the stimulation of entrepreneurship and promotion of industrialization, it becomes necessary to provide advice and assistance in planning and establishing industries, common services, financing of plant and equipment, and marketing assistance. It has been the experience of several countries that provision of such services directly by different government departments, instead of by a single agency, is not only inconvenient to the nascent small entrepreneur - who is often his own production, sales and financial manager, and does not therefore have the time to contact the different agencies - but leads to inadequate co-ordination by the various agencies involved and inefficient utilization of the resources deployed. Many Governments have therefore set up an autonomous agency, for example, an industrial development corporation or a development authority, to ensure unified administration of industrial estate programmes. In some countries, there are separate agencies for financing and technical assistance, but they work in close co-operation with the industrial estate management. Where Government is the sponsor and provides the finances, it is often represented in the management

board of the industrial estate agency and lays down policies and standards in planning, construction and operation, leaving a large degree of autonomy to the management of the estates, which usually has full responsibility over the day-to-day administration, co-ordination of the operations of various servicing and assistance agencies, and channelling of the request of the agencies for raw materials, import licences, aids in marketing and so on to the other appropriate agencies. Control by the management of the estate does not normally extend to the operation and management of individual undertakings in the estate; however, some controls are inevitable in connexion with managerial assistance services, credit and marketing facilities, safety, hygienic and working conditions.

Admission and occupancy policies

Admission and occupancy policies in an industrial estate are generally governed by the general industrialization policies, the industrial composition of the estate and by zoning and other regulations.

Admission is often influenced by policies aimed at maximizing employment. In the United Kingdom, a principal objective is the promotion of employment in depressed areas, and factories in industrial estates are let out to industrialists starting suitable new projects if the Board of Trade is satisfied that the amount of employment to be created justifies the expenditure involved. There is a similar employment-oriented policy in Jamaica, where it is required that the proposed plant should have a high labour content.

In India, the broad principles to be followed in admission to industrial estates have been laid down as follows:

(a) Industries which use modern techniques and manufacture items which have an importance in national economy on account of their value in reducing imports or increasing exports and which are otherwise beneficial should be given first preference;

(b) Industries which merely require accommodation without any special needs of the type referred to above should have a low priority, but this shall not preclude the state governments from sponsoring such industries as may be necessary to strengthen the economy of a particular area;

(c) Technically trained young men who wish to set up small industries should be given special preference in the allotment of factories; and

(d) Composite industrial units or co-operatives where different units produce components and parts for assembly in a central shop may be given some preference since such schemes produce interdependence and a co-operative spirit among industrialists.

It has, however, been found necessary in India to relax priority criteria for admission to industrial estates located in small towns or backward areas in order to facilitate growth of entrepreneurship and industrialization in such areas.

In several countries, industrial estate sponsors usually bring out prospectuses or information leaflets which include a list of prospective industries for which they are willing to offer sites, regard to market factors, availability of raw

materials and labour supply in the area. Even in an advanced country like the United States, some state governments provide free services to industries in the preparation of project reports, which include site selection, layout, map, survey and so on. Apart from providing periodical lists of prospective industries based on supply and demand and existing capacity in the industries, the Government of India has urged the state governments and other sponsors to undertake techno-economic area surveys before locating industrial estates. In the industrial estates being developed by the West Pakistan Industrial Development Corporation, the services of a firm of foreign industrial consultants are made available for the preparation of suitable projects and in the appraisal of the projects. Some Governments, for example, Puerto Rico and Ireland, undertake promotion work abroad to attract foreign enterprises to industrial estates. In the United States Republic, comprehensive surveys and studies are undertaken to locate industrial estates and decide on the types of industries in each industrial estate.

Zoning regulations provide either for separate areas for heavy, light and service industries, and for industries with large effluent, smoke, noise and so on, or place special restrictions on certain types of industries or processes. Certain restrictive covenants may be imposed by the developer of the estate to meet physical planning standards. Also, the size of factory plots and the availability of reserve land and utilities may restrict admission of certain industries.

Private restrictive covenants in the United States cover set-backs, distances from roads, establishment of building lines, off-street parking and loading requirements, and the types of industries permitted to be located. Industries with large space requirements usually prefer to buy and develop large acreages for themselves, if only to minimize over-all costs. Industrial estates in the United States are thus for the most part dominated by light manufacturing and assembly industries, warehousing and distribution, and research and development corporations. A survey of 272 "industrial districts" indicated that about 60 per cent of the occupants are engaged in non-manufacturing operations with distribution and warehousing facilities predominating. On the other hand, the regulations in Puerto Rico specifically provide that the buildings erected shall be used exclusively for manufacturing purposes in either light or heavy industry classifications; no other uses will be permitted, except that special commercial uses may be allowed for certain designated lots. Similar rules are increasingly adopted in the developing countries, some of which have recognized that housing, warehousing or commercial operations in factory buildings would be neither consistent with the purpose of the estates nor commensurate with the cost and effort put into these instruments of development.

Services and facilities

Both industrial areas and industrial estates provide general facilities, such as power, water, gas, sewerage, surfaced streets, transport and communication. Supply arrangements are usually made by the industrial estate management with the concerned agency in the town - electricity company or board, water department of a municipality, telephone company and the like. Postal, tanking, and railroad trucking facilities in or near the estate are also generally provided by the concerned agency, the estate management merely making available offices, land or siding to the agency. In a few big estates, however, internal rail or truck

transport are provided by the estate management. Only general services are provided in the industrial areas in Australia, Belgium, France, Italy, Jamaica, Mexico, Southern Rhodesia and South Africa. In the United States, additional services frequently include architectural and construction facilities, rail leads, building maintenance, financing of plant construction and warehousing. The larger estates offer almost all these services, having added them gradually as the demand became apparent.

The services and facilities provided in the industrial estates of the developing countries are aimed at improving the productivity of the occupants and are consequently of a much broader scope.

In India, the services and facilities provided are integrated with the country's small-industry development programme. Common service facilities for each estate are planned in advance to meet the anticipated needs and are operated by either the state government's Directorate of Industries or the Small-Industries Service Institute of the central Government. In large estates or key centres of concentration of particular small-scale industries, an extension centre is administered by the Small-Industries Service Institute of the Central Small-Industries Organization. The centre provides common service facilities, such as tool room, electroplating facilities, machine shop and so on. The primary service provided by an extension centre is technical counselling and technical assistance to tenant units in the industrial estate, though these facilities are also made available to small-scale enterprises outside the industrial estate. Certain common service facilities, training centres or quality-marking centres are operated by the State Department of Industries. A polytechnic or an industrial training institute of the Department of Technical Education or Department of Labour of the state government is often located near the industrial estate. Duplication by central government and state government agencies in providing facilities is avoided through co-ordination of their activities by an advisory committee in which both the agencies as well as the small-industry association are represented.

With a view to publicizing and advertising the goods manufactured by small-scale units, separate space has been provided in most of the Indian industrial estates to exhibit the products of the tenant units. In many estates, raw material depots for stocking and supplying scarce raw materials (for example, iron and steel and non-ferrous metals) are operated either by the state Department of Industries or the state Small-Scale Industries Corporations. These depots as well as other common service centres and training centres, may be used by small-scale units outside the estate.

Industrial estates for small-scale industries operated by the East Pakistan Small-Industries Corporation provide, besides general services, maintenance and repair workshops, warehouses and showrooms. Technical schools and training centres have been established by the government in many centres, but not in the estates themselves. The industrial estates of the West Pakistan Industrial Development Corporation, Ltd., have arrangements for technical assistance in project preparation, setting up of assembly industries (to which small units will supply components and parts), and a light engineering service centre (to provide assistance in design, standardization, market survey and so on). The light engineering service centre will assist units all over West Pakistan.

Besides those services which are directly related to the operation of the enterprises in the estate described above, it is usual also to provide other common services and amenities for the convenience of the occupants as well as for the health, welfare and safety of the workers in the factories. Examples of such services are restaurants or cafeterias, first-aid centres, sports and recreation facilities, reading rooms, community halls, fire station and security services. The health service, hospital and occupational hygiene centre in the Slough Estates, England, is renowned for its work. Besides providing factory accommodation and general services, the Shannon Free Airport Development Company has undertaken planned community development, including the setting up of a community hall, a school and a few shops. Many industrial estates in the United States provide restaurants, motels and executive clubs. Many of the industrial estates in India provide a canteen, a first-aid centre, a recreation centre, a meeting hall, a library, a fire station and a security service.

The experience thus far gained in the establishment and operation of special facilities in industrial estates underlines the need for careful assessment, pre-planning and phasing of the provision of services and facilities, having regard to the type of industries to be promoted, the extent of prospective utilization of the services and the existence or prospective establishment of government or private servicing agencies. The facilities set up by public agencies or the industrial estate management should not duplicate or overlap those available from private enterprises or likely to be available from enterprises set up in the estate. It has been the experience in some countries that more economical and efficient utilization of common service, training and technical assistance facilities can be ensured by making them also available to small-scale enterprises located outside the industrial estate. This has the further advantage of enabling the industrial estate to serve as an instrument of development in a broader geographical area.

Experience has shown that an industrial estate for small-scale industries in a developing country, whatever its industrial composition may be, requires certain types of common services to improve the productivity of the enterprises. These usually are a maintenance and repair shop, a testing and quality control laboratory and a technical and management advisory service. In the initial stages, in developing countries, these services should be regarded as promotional rather than commercial, and might therefore be subsidized by the Government or the industrial estate authority.

The other special services to be provided can usually be planned only after the composition of the estate is determined. These services might be established in stages after the enterprises commence operating in the industrial estate and the need for the services becomes more evident. As far as possible, enterprises in the estate should be encouraged through intertrading and interservicing to serve the needs of one another. The Government of the industrial estate authority might have to establish itself certain facilities which cannot immediately bring commercial benefits, for example, a heavy press, a turret lathe, a heat treatment plant and so on, or which are basically of a developmental nature, for example, a tool room or a design centre.

Sales and lease policies and charges for services

The relative merits of selling land and factory sheds or leasing them to tenant firms depend on such factors as the objectives of the sponsor, cost of land and its development, ownership of land and land alienation laws, customs and even prestige attached to ownership of land, trend in property values, financial resources of estate sponsor as well as of tenant firms and so on. The main advantage to the estate sponsor of selling outright is the resultant quicker turnover of funds invested and the possibility of reinvestment in a wider or expanding programme. On the other hand, leasing has relatively greater advantages both for the sponsor and the tenant firm, especially in a developing country, since it facilitates entry by providing the least financial barrier and provides continuing interest of the sponsor in expansion of the estate, integration of its facilities and progress of the tenant firms. Often the merits of leasing and selling are combined by providing for a fixed period of lease and subsequent sale on hire-purchase terms or by amortizing the value of the property and providing for periodic payments of premium (cost plus interest) over a certain number of years. However, several estates prefer continued leasing arrangements and do not sell at all.

A diversity of methods and practices are followed in different countries. There are no clear-cut differences between different types of sponsors or between developed and developing countries. In the United States, selling the land and properties, either outright or through instalment payments over a number of years, is more prevalent, but there are significant exceptions, where there is only leasing of factory space. The general policy in Ireland, Malaysia, Puerto Rico and Singapore is for lease of land and either lease or sale of buildings. In Ceylon and the United Kingdom, land and factory buildings are let out on lease only. In China (Taiwan) and Pakistan, land and buildings are sold either outright or on instalment-purchase terms. In India, except in a few estates, factories have hitherto been let out on lease, but there is provision for sale after a period of three to five years. Jamaica has provision for both sale and lease. In Trinidad and Tobago, factory plots are leased to tenants.

While policies and practices relating to sale or lease differ between different countries, most of the developing countries that have established industrial estates have offered improved sites and/or factory buildings for rent, often at subsidized rates. Such a policy provides strong inducement to entrepreneurship and occupancy, especially in developing countries, where entrepreneurs venturing into small-scale industries often lack sufficient command over financial resources. Even in developed countries, investment financing by banks, financing institutions and investment building companies on an instalment-purchase basis, rather than outright sales, is the prevalent practice.

The policies and methods regarding sale or lease followed in India, Puerto Rico, the United Kingdom, the United States and Venezuela are outlined below for the guidance of countries establishing industrial estates.

India

Although the Indian programme provides for an option to the occupier to take the factory on outright sale, on hire-purchase or on a rental basis, the practice hitherto has been - except in one state - to provide factory sheds on a rental

basis only. In some instances, however, the switch-over is made outright. In the latter case, the Government of India has

The scheme of the Government of India provides for a maximum period of five years. In some cases, subsidy is provided for a period of three years by the state government. The difference between the economic rent and the concessional rate is borne by the Government of India. The extent of subsidy is determined by the state government in each case, taking into account the size of each estate and the private investments in the industry.

As rents are subsidized, the early development of the industry is demanded from the units for buying over the factories. Some of the units are entitled for subsidized rents is coming on a leasehold basis. The Government of India had recommended to the state governments that initially those opting for the hire-purchase system should pay only 10 per cent of the balance of 80 per cent, should be collected in instalments over a period of twenty years. It is also of the view that only one mode of financing should be used in an industrial estate. All the units in an estate should be on either a monthly rent basis, hire-purchase system or outright sale system. Small factories should be subject to the condition that purchasers comply with the rules and regulations of the estate. There has been comparatively less demand for outright purchase because small industrialists cannot generally raise the necessary capital for the purpose.

Charges for water, electrical energy, telephone and internal transport (when provided) have to be paid by the tenants to the agencies supplying them. Technical assistance by an agency of the central or state government is usually provided free of charge. For common facility services, charges are made either on an on-cost basis or on the basis of direct cost only of materials and labour. Work of a developmental nature, for instance, design of a new product, is usually charged much below cost. Training of entrepreneurs, farmers and millers is done in management methods, accounting, marketing, blueprint reading and so on, provided free in part-time courses (evening or morning). For full-time training of workers in skilled trades (for example, machine operator, electrician, shoemaker and so on) usually for a period of six months, not only is the instruction free, but a monthly stipend is paid to the workers for their individual living expenses.

In some estates in India (and also Nigeria) problems have arisen in the collection of rents from tenants. In India, when the switch-over from subsidized rent to economic rent was made, it was felt in some estates that the rents were high compared to prevalent rates outside the estate. In some cases, economic rent has been high due to inclusion of costs of built-in non-industrial facilities (such as administrative buildings, canteen and so on). In other cases, rents were high because construction costs were high. The Government of India has prescribed norms and standards for layout and buildings in the industrial estates in order to reduce construction costs by eliminating waste of space and unnecessary frills in designing. It has also been proposed in India to provide the cost of non-industrial buildings as a subsidy and to exclude it from the calculation of economic rent.

United Kingdom

FRIDCO does not sell, but only leases industrial land and buildings. The lease is for a fixed period of ten years, and annual rent, to be paid in advance monthly instalments. In addition, the tenant has to pay real-estate taxes and charges for water, sewer, gas, electricity and other services. The tenant has also to take out fire insurance protecting the landlord against fire, hurricane, earthquake, boiler (if any) and general accident. The lease is renewable for fixed terms of ten years.

United Kingdom

The general policy in the United Kingdom - both in the Government estates and in private estates - is only to lease land and buildings. In Government estates, the Board of Trade holds the freeholds of all land and properties, the Management Corporation is granted a leasehold interest for a period of ninety-nine years (in a few cases 999 years) and the Management Corporation normally enters into a lease with an approved tenant for a period of twenty-one years (twenty years in Scotland). The lease to the tenant is at a current market value rental as assessed by the government's district valuer.

Several leases embody a mutual break clause, permitting the rent to be revised, but apart from this the rent is unchanged for the duration of the lease. Therefore, although the average current market value of rental now being earned on new leases (and renewals of leases) is about four shillings a square foot in England (and less in Scotland and Wales), the general level of rents under existing leases is very much lower. Rents are based on current market values assessed in the light of local conditions, with the consequence that the poorer the local conditions are, the lower the rent is. A subsidy to the poorer areas results. An industrialist desiring a factory different from the standard design is asked to pay the difference in cost either in cash or in instalments, or in the form of an increased annual rental.

The Board of Trade has sometimes sold land or factories on the perimeter of estates and sometimes leased factories on a ninety-nine-year lease. In Scotland, there is a preference for owning factories, and the Board of Trade has in the past sold several large factories on amortisation over a period of twenty years, but these factories were located on individual sites and not in an industrial estate. In the New Towns developed by the Board of Trade in cooperation with the New Town Corporations, industrial sites are either leased for ninety-nine years and 999 years, or sold on the condition that a factory is built within a specified period.

The Slough Estates, Ltd., Slough, England - which is the largest private industrial estate in the United Kingdom - does not sell land or factories. All factories on the estate are rented to tenants. Rents are based on amortised building costs plus a fixed percentage for operating costs and a margin of profit.

United States

A long-term outlook by the management is characteristic of industrial estate developments in the United States. Normally, land absorption is slow at a slow rate, averaging 10 to 15 acres per year. The developers, therefore, give careful consideration to the utility of layout, leveling, site costs, taxes and financing. Whether in selling or leasing, the developer retains a high degree of control over the area by including covenants, restrictions and reservations in detail in the contracts with the occupier.

As already stated, selling the land and properties either outright or through instalment payments over a number of years is more prevalent, but there are significant exceptions where there is only leasing of factory space. The Industrial Properties Corporation, which developed the Trinity Industrial District, Dallas, Texas, improves sites and constructs standard types of industrial plants for lease. It also sells land to other contractors who build plants for sale or lease. The Industrial Foundation, which developed Fresno Industrial Site No. 1, Fresno, California, sold land at fixed prices, which included cost of land and cost of improvements. Lots were sold on cash with a maximum of thirty-six months to pay. To eliminate land speculation, a purchaser is required to build his plant within thirty-six months or return the property at its original purchase price to the Foundation. In the Broad Hollow Industrial District, organized by Windsor Properties, Inc., in Dallas, Texas, the Company sells improved property only. The minimum price was quite high and there were severe restrictions, yet the land was rapidly sold. The developer could thus install utilities without borrowing. Although the developer himself does not build factories, there are several investment builders in Dallas who build plants and offices to the specifications of industrialists in a lease-rental arrangement or on a complete package deal. In Industrial City, developed by the Bush Terminal Building Company, in Brooklyn, New York, all factory space is leased, year by year, and not sold at all. The company provides a highly developed and well-rounded combination of space, location, shipping facilities and services that favours the tenant with conditions for economical industrial operation. This complete package of services has continued to attract a number of companies: twenty-two companies have occupied space for an average of thirty-one years, renewing the lease year after year.

Venezuela

In Venezuela the Compañía para el Desarrollo Industrial de Maracaibo, which has established the industrial estate at Maracaibo, offers to occupiers of factory buildings a system of "rental of fixed assets with purchase option". Under this system, the occupant pays a monthly rental of one per cent of the initial value of the land and buildings on the basis of a lease for ten years. At the end of the contract period, the property may be acquired at the original valuation less the rental already paid, which has been credited towards the capital cost. Normally this means that the assets can be acquired by the occupant on payment of 42.65 per cent of the original cost.

Special Inducements

Besides the provision of services and facilities in an industrial estate additional inducements have been found necessary in developing countries to stimulate entrepreneurship, facilitate operation in the early stages or attract industry from abroad, and in developed countries, to attract industry to depressed areas. In many countries, these special inducements form part of the general industrialization programmes and are not exclusively applicable to enterprises on the industrial estates.

The kinds of additional inducements provided in some countries are: subsidies on rent, subsidies on sale of land and building costs, grants towards building costs, low-interest loans or grants towards cost of plant and machinery and tax concessions.

Subsidies on rent

Rent subsidies are one of the most usual types of special inducements to attract industry to new locations, to facilitate operation of small-scale industries in the initial stages and to direct industrial investment to depressed areas. Rent subsidies for an initial number of years in the industrial estates are in operation in India, Israel, Malta, Nigeria, Puerto Rico, Trinidad and Tobago, and the United Kingdom. In India, Israel, Puerto Rico and the United Kingdom there are different rates between different locations as an inducement to location in backward areas.

In India, the rent is charged at a rate lower than that of the economic rent for a period of three to five years. The extent of subsidization is determined on the case of each estate on the basis of local circumstances and competitive market rates. Usually this system results in rent differentials between metropolitan centres, urban centres and semi-urban or rural centres. The Government of India has, however, under consideration a proposal to abolish the subsidy on rent. Instead, it is proposed that a grant of 10 per cent of the total cost of an industrial estate should be made to the state government to cover the cost of administrative and recreational buildings, dispensary, canteen, post office, clubs, staff quarters, substations for water and electricity and so on. The cost of these buildings should thus be excluded from the calculation of the economic rent.

In Israel, rent on factory buildings in "development areas" is fixed at 7.5 per cent of the price of the buildings, as compared to 12 to 15 per cent in other areas. When the tenant purchases the building, account is taken of half the amount of rent paid by him, which is deducted from the price of the building.

Although rent subsidies are only one of the series of integrated fiscal and financial incentives offered in Puerto Rico, their main importance lies in the differentials between estates in different locations. For determining rent subsidies, there are rental zones. In order to encourage decentralization of industry, rentals in remote towns are set much below those in larger cities. In some of the more remote towns, factory buildings are offered rent-free for a period of one and one-half years.

There is an element of subsidy in the rents charged by the Industrial Estates Management Corporations in the United Kingdom. The rent charged is usually only one-half to two-thirds of what would have been the economic rent. In Ireland the subsidy in rent is much larger than that in Great Britain.

Subsidies on sale of land and building costs

One of the inherent advantages of industrial estates is that it is possible to make developed land available much below the market price. In the case of private developers, this advantage arises from economies in acquiring and improving a large tract. Where government or a government agency is the developer, in many countries land is acquired at low cost (compared to market price) through exercise of legal powers that governments have to determine the price of land with reference to some norms, for example, the price is a certain multiple of the land revenue or land tax paid and so on. In the former cases, the government or the municipality makes available land already used or acquired by it at a very low price. Subsidies on sale of land are available in the estate in Mexico and in some estates in Malaysia, the Netherlands and the United States. In the Netherlands, land is made available by the municipality at half the price in forty-four "development centres" provided that 70 per cent of the land bought is used in construction.

Grants towards building costs

In addition to such indirect subsidization of cost of land, many countries provide grants towards building costs, in order to encourage industrialization, attract foreign enterprise or attract industry to remote locations. Such grants are made in Ireland, Italy, Malta and the Netherlands. A comprehensive system of capital grants is available in southern Italy, amounting to up to 10 per cent of infra-structure expenditures for establishment of industrial estates, including compensation for land expropriated, and up to 50 per cent of cost of constructing factory buildings. In the Shannon Industrial Estate in Ireland, the Shannon Free Airport Development Company provides a building grant for undertakings which desire to build their own factories. The Government of Malta makes financial grants to the extent of one-third of the capital costs of erecting premises and providing plant, machinery and equipment. Such grants may reach 50 per cent in exceptional cases. Grants towards building costs are available in the Netherlands at differential rates for different locations, the amount of grant varying with the extent of labour expense covered.

Low-interest loans towards cost of plant and machinery

Governments or government-sponsored financing or development organizations in several countries make available loans at low interest to finance the installation of plant and machinery. Some countries provide grants towards plant and machinery cost. Generally such facilities are made available to a category of industries, especially small-scale and medium-sized industries, or to induce the establishment of industries in decentralized areas or locations. Loans or grants are available in China (Taiwan), India, Italy, Japan, Malaysia, Malta, Pakistan, Puerto Rico, Singapore, the United Kingdom and Venezuela.

In India, loans under the State Aid to Industries Act from state governments and hire-purchase financing of plant and machinery from the National Small Industries Corporation and some of the state Small Industries Corporations are available at low interest rates to small-scale industries in general. The rules of the National Small Industries Corporation and some of the state Small Industries Corporations provide for lower amounts of initial installation and security deposit to be made by enterprises in industrial estates (and especially in ancillary industrial estates), as compared to amounts required to be deposited by enterprises located outside industrial estates. In southern Italy, grants from 10 to 25 per cent are made for new plant and equipment in small-scale and medium-sized industries. In Japan, interest-free loans subsidized by the National Treasury are given to co-operative associations to develop land, construct factory buildings and set up economic facilities and modernized equipment in industrial estates. In Puerto Rico, manufacturers willing to establish plants outside the metropolitan areas and Caguas are eligible for grants known as "locational incentives", which are graduated in their maximum amounts up to a total of \$40,000 for the most remote towns which do not yet have a single average-size plant. In the United Kingdom, grants towards cost of plant and machinery are made to enterprises establishing themselves in an estate or industrial site in the unemployment areas.

Tax Incentives

In several countries, tax exemptions and tax concessions are available for new industrial enterprises whether these are set up in industrial estates or not. In a few cases fiscal incentives are reserved to the occupants of industrial estates. The following information is available on Ireland, Israel, Italy, Malta and Puerto Rico.

Ireland provides tax exemption to enterprises located in the Shannon Free Airport Industrial Estate.

Israel provides exemptions from municipal taxes for buildings in industrial estates (which is otherwise 50 per cent) and reduced rate of income tax (25 instead of 30 per cent).

Tax incentives provided in southern Italy include exemption from customs duty for building materials and machinery, ten-year exemption from income tax, exemption from municipal taxes and 50 per cent reduction in excise taxes on electric power and building materials.

Malta provides income-tax holidays for ten years to new industrial enterprises and also exemption from customs duties on building materials, plant, machinery and equipment, and reduction in customs duties on materials and components.

In Puerto Rico, there is an integrated set of incentives to industries establishing themselves in the island. These are designed to attract foreign capital and enterprise as well as to develop indigenous industry. Exemption from corporate income tax is provided for a minimum period of ten years.

Other inducements

In India, the Government has ensured the availability of supply of scarce raw materials for a self-sufficient and first year establishment. As this facility has facilitated working outside the state, its withdrawal is being considered.

In southern Italy, equity participation by credit institutions in freight rates and preferential awards for contracts from public authorities are available.

In Pakistan, the Government encourages location of industrial units in industrial estates by giving preferential treatment to the local banks for loans and assisting foreign exchange earnings to promote industrialization.

The Economic Development Administration in Puerto Rico provides feasibility studies and training facilities for skilled labour for new industries.

Training grants and training facilities are provided in the United Kingdom to industries located in the unemployment areas. Special railway facilities to main urban centres and concessional rates of water and power supply are provided in South Africa for industries locating in underdeveloped areas.

Experience indicates that special inducements are adopted in developed countries as part of general or special policies applicable to certain categories of industries or areas and are not given exclusively to enterprises in industrial estates. The general policy is that these special concessions are for a temporary period only until the industries are established on a stable and competitive basis.

Chapter IV

Financing of Industrial Estates

The construction of industrial estates with standard factories and common facilities involves considerable financial outlays. Effective mobilization and economic utilization of financial resources for the establishment of industrial estates are, therefore, of the utmost importance, especially for developing countries, which have limited financial means and competing demands on them.

Governments - either directly or through corporations and other agencies - have been the major sources of funds for the establishment of industrial estates in Ceylon, India, Jamaica, Malaysia, Malta, Mexico, Pakistan, Puerto Rico, Singapore, Trinidad and Tobago and the United Kingdom. Major financing has been from private agencies, foundations, banks and public subscription (through, for instance, municipal revenue bonds) in Australia, Belgium, Canada, France, the Netherlands, South Africa, southern Sweden and the United States. Italy provides a outstanding example of Government-supported financing, channelled largely through special banks and public law institutions. There has as yet been very little direct foreign investment in the construction of industrial estates, although some countries, in particular, Ireland, Malta, Puerto Rico and Singapore, have made special efforts to attract foreign enterprises to industrial estates. There is one example of a direct loan to one country, namely, Pakistan, from the International Development Association (IDA) to finance the establishment of industrial estates. Many countries have availed themselves of assistance from International Agencies for pre-investment feasibility studies, services of technical experts and setting up of training and common facility centres in industrial estates.

Government financing

Funds are provided by appropriations in the annual budget and either utilized directly in the construction of industrial estates, as in Malta and the United Kingdom, or loaned to the agency building the estates, for example, to a state government in India and to a corporation in Ceylon, or provided as equity investment in a corporation or a board, as in Jamaica, Singapore, and Trinidad and Tobago.

In Ceylon, the funds of the Industrial Estates Corporation come entirely from the Government. Of the estimated total investment of Cey Rs17.6 million in the first industrial estate, Cey Rs9 million is a loan from the Government to the Corporation, to be repaid with interest at 4 per cent per annum. The remaining amount represents equity capital of the Corporation.

In India, the state governments develop industrial estates and own them, but the central government makes grants and loans to the state governments for this purpose. Grants are made towards the cost of preparing plans and estimates.

Loans are made for acquisition of land and construction of factory buildings, ancillary buildings and installing utilities in the estate. Loans for the cost of land and buildings are for a period of twenty years, and loans for installing utilities, for example, water and power supply, are for a period of thirty years. The normal rate of interest is three per cent per annum.

An advantage which autonomous corporations have is that they are able to supplement Government contributions to their capital and Government loans by loans from banks and special financial institutions, such as the Industrial Bank or a life insurance company. As compared to direct Government investment, government-sponsored corporations and boards are likely to persist in sound financial principles.

The Puerto Rico Industrial Development Company (PRIDCO) provides a good example of successful financing for development of industrial estates. Organized and operating as a public corporation, PRIDCO supplements the economic development Administration's industrial promotion efforts through the maintenance of industrial factory sites and buildings and the granting of financial assistance, in the form of loans or minority stock purchases, to qualified manufacturers and special-project investors. PRIDCO's operations are financed from a revolving fund and from additional appropriations made from time to time by the Puerto Rico Legislature. The revolving fund has been built up by PRIDCO over a twelve-year period, since PRIDCO started operations, and is administered so that it will revolve as readily as possible and pick up as much private capital as possible on each turn. Such revolving of funds is possible because PRIDCO not only builds factories, but also grants financial assistance to private entrepreneurs and invests in tourist facilities. PRIDCO also obtains short-term funds from the sale of general revenue bonds. In 1962, PRIDCO's net income was \$2.2 million, operating income \$6.6 million and total expenses \$10.9 million, of which real-estate investment was \$90 million. More than 700 United States-owned plants have established operations in Puerto Rico during the decade 1952-1962 and the growth rate has been 8 per cent per annum.

In the United Kingdom, although semi-autonomous corporations might manage the industrial estates, the ownership of land and factories, built with Government funds provided by the Treasury, vests in the Government. The land and buildings are leased by the Government to the corporations. Any surplus of income of the corporations over their expenses on maintenance and upkeep of the estates is paid back to the Treasury.

There are some examples of Government loans to private organizations setting up industrial estates. In Andhra Pradesh State (India), a scheme for setting up "assisted private industrial estates" has been evolved. Under this scheme, fully developed factory sites are made available by the state government to occupants on long-term leases. The occupants construct their own factory buildings according to approved type designs. Loan assistance up to 75 per cent of the cost of buildings and machinery is available from the state government or the Andhra Pradesh State Financial Corporation. These loans are repayable over a period of fifteen years, the first instalment falling due a year after the starting of operations or two years after the date of the loan. Eighteen assisted private industrial estates are being established in this manner during the third five-year-plan period (1961-1966).

in the United States. In the State of Pennsylvania, the Industrial Development Finance Corporation (IDFC) established as a public corporation in 1962 was the first of a new type of corporation. The IDFC's principal function is to provide financing for industrial development projects. The IDFC issues bonds, which are sold in the State of Pennsylvania and in other States as well as in the Federal market. It is authorized to borrow money in the State of Pennsylvania and in other States and in the Federal market. The IDFC's principal function is to provide financing for industrial development projects. The IDFC issues bonds, which are sold in the State of Pennsylvania and in other States as well as in the Federal market. It is authorized to borrow money in the State of Pennsylvania and in other States and in the Federal market.

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The Cassa per il Mezzogiorno, established by the Government in 1957 for the economic development of southern Italy, is provided with long-term financing by the State. It has also obtained foreign loans from the European Investment Bank and the International Bank for Reconstruction and Development through the issue of foreign bonds. It is also empowered to borrow from the State and from domestic banks. Loans have been obtained for investment in industrial areas and for relending to the special areas established for the establishment of industrial areas and urban centers. Funds for industrial development are canalized through a network of special institutions. The Cassa participates to the extent of 60 percent in the capital of three special credit institutes for southern Italy: IRI (Istituto per lo Sviluppo Economico del Mezzogiorno) operating in the Basilicata region; IRIIS (Istituto Regionale Industriale della Sicilia) operating in Sicily; and CIS (Istituto Centrale di Investimento) operating in Campania. Besides these three special credit institutes, there are three large commercial banks - Banco di Napoli, Banco di Sicilia and Banco di Roma - which have set up - the IRI (Istituto Regionale Industriale) and the IRIIS (Istituto Regionale Industriale della Sicilia) and the CIS (Istituto Centrale di Investimento) are the only national institutes. Besides participation in capital, the Cassa provides interest subsidies to cover the difference between the interest rate on the investments project funds and the interest rates at which the loans are made available to the institutes by the banks. In the case of loans made available to the institutes by the banks, the difference of interest rates is covered by the Treasury. Besides investment in industrial development, capital grants are made to the special credit institutes to reconstruct industrial structure and to invest in industrial areas and industrial estates.

I. Japan, loans for the construction of factories, purchase of machinery and equipment for industrial estates established by co-operative associations are provided by the Central Bank for Commercial and Industrial Activities. The prefecture and central governments provide infrastructure facilities for industrial estates.

Municipalities

Municipalities and local governments have developed industrial estates in several countries, for example, in Belgium, Canada, France, Israel, Italy, the Southern Rhodesia, South Africa, the United Republic of Tanzania, and the United States and so on. In the Quebec Province of Canada, under the provisions of the Act of 1961, municipalities are authorized to establish industrial estates, the purchase of industrial land, the financing of building, to lease or buy existing manufacturing enterprises, and the financing of land acquisition of the local enterprises. In Israel, the municipality and the Government participates in the establishment of private building companies and in providing capital. The general practice in the countries has been to encourage industrial development in cooperation with private groups to promote industrialization. In Canada, the municipality has only made available the land for industrial development and financing of the construction of factory buildings has been done by the industrial development corporation established by a provincial government and the central government.

Industrial Foundations

Industrial foundations or community development companies have been established in Canada, the Netherlands and the United States for financing the construction of industrial estates. These foundations are formed usually by collaboration of private groups and municipal authorities and are non-profit organizations. The Pennsylvania Industrial Development Authority (PIDA) in the United States, referred to earlier, makes loans only to such non-profit organizations. Industrial foundations finance all the stages in the establishment of industrial estates and operation of enterprises there. They buy land, complete factory building, and installation of plant and equipment for industrial enterprises. Such foundations raise money by issuing stock, bonds, and by receiving outright contributions, by organizing as charitable trusts, and by using professional fundraisers. In the six New England states of the United States, there were in 1955 seventy-five such local industrial development corporations, a vast majority of them founded after 1950. Twenty-five state legislatures in the United States have since authorized local development groups (industrial foundations) established by city, town or county governments to issue industrial development revenue bonds. The bonds are amortized by the rents paid by the leasing company in an industrial estate. Facilities leased by the foundation usually for a period of up to twenty years.

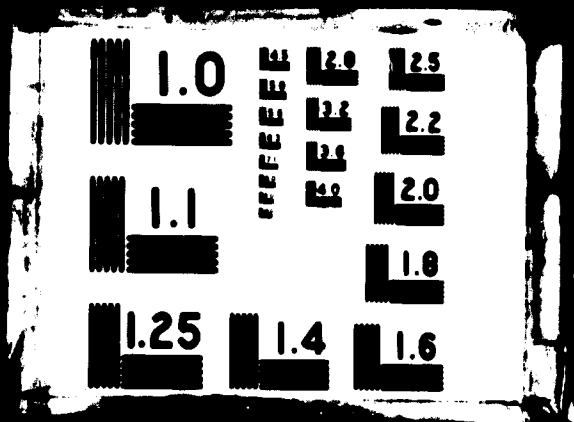


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Private financing

The major sources of private financing are commercial and savings banks, life insurance companies and various trust funds. Commercial and saving banks usually provide very little medium-term and long-term capital for industrial development, as they cannot tie up their funds for long periods. In some countries, however, they assist to a limited extent an industrial foundation, a community development corporation or an industrial development corporation in meeting medium-term financing requirements for construction of factory buildings and installation of plant and equipment for individual occupants of the estate, provided the sponsoring agency or corporation guarantees repayment of the loan. The banks usually provide first mortgage loans and other investors make contributions to equity capital and second or third mortgage fundings. For instance, in India, under the scheme of private assisted industrial estates, the sponsoring agency raises $16 \frac{2}{3}$ per cent of the capital if it is a joint stock company or an association of entrepreneurs, and $9 \frac{1}{11}$ per cent if it is a co-operative society; the state government provides the guarantee; and a commercial bank or a co-operative central bank advances the rest of the capital as long-term loan for a period of twenty years. If the company or the co-operative society is not able to raise the minimum capital, the state government advances a long-term loan of fifteen to twenty years to cover the gap; and in this case the commercial bank provides the first mortgage loan, the state government's advance being the second mortgage loan. In the United States, banks provide first mortgage loans to community non-profit corporations for construction of buildings.

Life insurance companies provide mortgage financing and real-estate investment on a lease-back arrangement. A large part of the Los Angeles Airport Industrial Tract was developed with life insurance aid. Also, insurance companies in the United States have purchased industrial buildings in several industrial estates and have leased them back to the manufacturers on a long-term basis. In India, the Life Insurance Corporation advances loans to private industrial estate co-operative societies or private companies to the extent of 60 per cent of the capital, the balance being provided equally by the private company (or society) and the state government. The loan is repayable in thirteen annual instalments, the first instalment being due three years after the loan is drawn. The loan is covered by a guarantee of the state government.

In the United States, a private company, a corporation or a foundation sponsoring and developing an industrial estate can, after providing initial equity capital, obtain financial assistance not only from mortgage banks and insurance companies, but also from pension funds, educational institutions' endowment funds, investment syndicates and real-estate development and construction companies. The larger industrial districts are thus able to offer a package deal to occupier-tenants to finance not only the land and factory building, but also the plant and equipment. Different types of financing could be utilized for different stages of an industrial estate. The equity capital of the sponsor may be used for improving the tract and installing utilities and services; private financing companies could then finance the construction of buildings and installation of plant and machinery.

International financing and assistance

There is scope for financing the establishment of industrial estates through intergovernmental and international financing agencies. The Commonwealth

Development Corporation (for Commonwealth countries), the European Development Fund of the European Economic Community (for countries in Africa associated with the EEC) and the Inter-American Development Bank (for member countries) are some of the sources of external finance for establishment of industrial estates or networks of industrial estates in developing countries.

The International Development Association (IDA), of the International Bank for Reconstruction and Development (IBRD), an affiliate, provides financing through national financial or industrial development corporations under agreement with and guarantee of national governments. The IDA is currently financing a number of industrial estate projects in Pakistan. In November 1962, it agreed to provide a credit of \$6.5 million to Pakistan for financing (a) two industrial estates for small-scale and medium-sized industries at Gujranwala and Sialkot, (b) service centres for light engineering at Gujranwala, sports goods at Sialkot and cutlery at Nizamabad, and (c) a Small-Industries Institute at Lahore. The project includes credit for meeting foreign exchange requirements of occupant firms for machinery and equipment, and services of industrial consultants. The loan is for a period of fifty years, and repayments start after eleven years. There is no interest charged, but a nominal service charge of 0.75 per cent per annum is made.

Under the technical co-operation programmes of the United Nations, assistance is being given to a number of countries, at the request of governments, in pre-investment studies and planning of establishment of industrial estates. Assistance is available under the United Nations Development Programme (UNDP) - both under the Expanded Programme of Technical Assistance and the United Nations Special Fund. However, capital investment is not financed under the UNDP. The principal criteria for distinguishing Special Fund operations from those of the Expanded Programme are the size and duration of the projects. In principle, projects which call for the services of one or two experts only for a relatively short period, say, a few months to two years, would be dealt with under the Expanded Programme. More important projects requiring a team of several experts for a longer period of time might be considered by the Special Fund.

Assistance under the Expanded Programme may range from a brief visit by a staff member or an adviser of the Centre for Industrial Development, for the purpose of drawing up a programme of United Nations assistance, to provision of a two or three-man team for a period of up to two years to assist in the planning and construction of an estate, the establishment and operation of common service facilities, the management of an existing estate or other assignments. Fellowships for advanced training overseas may also be made available to national personnel participating in industrial estate programmes.

Assistance from the Special Fund, on the other hand, is usually available for projects concerning several or all phases of the establishment of an industrial estate, from early planning to beginning of operations. The UNDP considers for assistance from the Special Fund industrial estate projects involving an initial feasibility study, the preparation of the layout and plans, provision of advice during the construction phase, and the establishment and provision of certain common facilities. In special circumstances, assistance might be provided in the initial administration and direction of an estate, including training of personnel for the administration and maintenance of common services. Design or construction of industrial plants in the estate or provision of capital equipment are outside the purview of Special Fund assistance. However, the establishment of certain

assistance and servicing facilities for small-scale industries, for example, a Small-Scale Industries Service Institute or pilot plant facilities as part of an industrial estate, might be supported under a Special Fund project.

The local costs of industrial estate projects could be met to some extent through food aid under the World Food Programme jointly sponsored by the United Nations and the Food and Agriculture Organization (FAO) of the United Nations.

Annex I

Questionnaire on Industrial Estates

Introduction

There has been lately, especially in the developing countries, increasing recognition of the value of the industrial estate as a highly effective tool for the development and planned location of industries, particularly of small-scale and medium-sized industries. In a number of developing countries, plans for the establishment of industrial estates are being prepared and implemented; in some cases, assistance is provided by the United Nations under its technical assistance programme and the programme of the Special Fund.

With a view to providing guidance in this field to government officials, technical assistance experts and others engaged in the promotion of industrial development, the United Nations has drawn up a programme of research studies and regional seminars in this field, which has been approved by the Committee for Industrial Development. Three studies have already been published, a/ and others are under preparation. A first seminar on industrial estates was held in Madras, India, in November 1961, for the countries of the region of the Economic Commission for Asia and the Far East (ECAFE). A seminar for Africa was convened in December 1964 in Addis Ababa and another, for southern Europe and the Middle East, will be held in 1966 in Turkey.

The purpose of the present questionnaire is to elicit information from countries, developed and less developed, on their policies, plans and progress in the field of industrial estates, with a view to deriving, from an analysis of their replies, some guidelines for the establishment of industrial estates in developing countries. The analysis will be submitted to the aforementioned seminars and to the Committee for Industrial Development, and will eventually be published by the United Nations.

In the questionnaire, the term "industrial estate" is used as a generic concept to designate a planned complex of industrial enterprises offering developed sites and including, in many cases, pre-built factory accommodation and provision of services and facilities to the occupants. It covers projects known in different countries as industrial tracts, districts, parks, sub-divisions or nuclei, trading estates, industrial areas and areas of industrial development. It does not cover zones or areas reserved for industrial use under urban planning, zoning or similar schemes.

Explanatory notes aimed at facilitating the preparation of the replies will be found under most questions. The replies need not be limited to the subjects

a/ Establishment of Industrial Estates in Under-developed Countries (United Nations publication, Sales No.: 60.II.B.4), The Physical Planning of Industrial Estates (United Nations publication, Sales No.: 62.II.B.4) and Industrial Estates in Asia and the Far East (United Nations publication, Sales No.: 62.II.B.5).

mentioned in the notes and any other relevant information will be welcome. Copies of official reports or printed or mimeographed documents may be appended wherever necessary to make the replies fully informative.

Questionnaire

(a) Programmes and policies

(i) Give a brief historical account of progress in, and plans for, the establishment of industrial estates in your country.

Note. Where industrial estate programmes are at early stages of consideration, a brief account of the expected development should be provided under this question, and as much information as possible on the particulars of the programmes should be given in reply to the questions below.

Where no industrial estate programmes are considered or planned at this stage, the replies may so state, the remaining questions being left unanswered.

(ii) Briefly describe the objectives and policies in your country with respect to the establishment of industrial estates.

Note. Where the establishment of industrial estates is part of the development plans and programmes of the central or local governments, one or several of the following objectives are usually sought: promoting the development of small-scale, medium-sized or large-scale industries; influencing industrial location, usually in accordance with policies of decentralization; developing depressed, rural or backward areas; facilitating resettlement of industries displaced by urban renewal programmes; developing new or existing industrial centres and complexes, including promotion of subsidiary manufacturing activities on a small or medium scale around such projects; promoting industrialization projects related to the development of ports and airports, reclamation schemes and so on; and attracting industry from abroad.

(b) Organization of industrial estates

(i) Sponsorship

Describe the sponsorship of industrial estate projects in your country.

Note. Industrial estate projects are frequently sponsored by central, state or provincial governments; municipalities or local boards; autonomous or semi-autonomous industrial estate authorities; private groups or individuals, co-operative associations or joint stock companies; mixed groups of public and private representatives; chambers of commerce and other non-profit community organizations; and other bodies.

(ii) Types of estates

Describe the main types or categories of industrial estates in your country.

Note. The following types of estates may conveniently be distinguished:

(a) According to location: metropolitan, urban, suburban or rural estates; estates attached to ports, airports and railroad centres.

(b) According to type of facilities: estates offering improved sites and/or general-purpose factories built in advance of demand; flatted factories; workshop blocks for artisans.

(c) According to function: non-specialized industrial estates for all types of industries; so-called "functional" industrial estates in which the production of parts and components of a given product is allocated among the occupants; estates for industries engaged in similar or complementary lines of business; estates for small-scale industries acting as subcontractors of large-scale industries; and other specialized estates.

(iii) Size of industrial estates

Give data on the size of the industrial estates classified, if possible, as public, mixed or private, including area, number of factories, average factory and plot size, employment and capital investment on the estate, excluding investment by individual occupants.

(c) Management of industrial estates

(i) Administration

(a) Describe the structure of management, the relationship between management and the sponsoring authority (if separate), and the extent of managerial control and responsibility. In particular, explain whether management control extends, within proper safeguards, to certain aspects of the organization and operation of the enterprises on the estate, for example, control of the type and quality of the machinery installed, quality of product, working conditions and so on.

Conversely, indicate whether the occupants have any voice in the management of the estate and if so in what respects.

(b) Are there different agencies for the construction of the estate and its administration?

(c) Describe the arrangements for the organization and management of networks of industrial estates, for example, functions of the developing agency, co-ordination of planning, construction and operation, degree of autonomy of individual estates and so on.

(ii) Admission and occupancy policies

Outline the policies regarding admission to the estate and occupancy of sites and premises.

Note. Information may be given on restrictions, if any, on the admission of certain industries or the use of certain processes considered to be obnoxious; restrictions on the admission of industries which are large consumers of power or

water; restrictions based on size of enterprise; policies in respect of admission of existing enterprises or newly established ones; measures, if any, to influence the industrial composition of the estate; admission of enterprises from other areas of the country or from foreign countries; policy in respect of enterprises seeking extension of factory space; and on estates for small-scale industries, policies applying to enterprises outgrowing the definition of small-scale industry.

(iii) Services and facilities

Describe the services and facilities made available on the estate and the agencies which provide them.

Note. The general services frequently include power, water, gas, railway siding, internal transport, fire protection, watch and ward, medical care, canteen and others.

Special common services may include, among others, maintenance and repair shop, testing and quality control laboratory, forge, foundry, tool room, tool and machine lease shop, technical reference facilities and so on.

Marketing facilities may include show-rooms, sales depots and warehouses.

Technical assistance and training facilities may be integrated to the industrial estate.

Many of the above services may be organized, financed and operated by the developing agency or by the occupants themselves, grouped, for instance, in co-operative or voluntary associations.

Special arrangements may be needed to service certain estates where, because of small size, remoteness or other reasons, the establishment of permanent facilities may not be justified.

(iv) Sales and lease policies and charges for services

Outline the policies and terms regarding the sale, lease or hire-purchase of sites and factory buildings and the charges, if any, for utilities and other services, and facilities made available to the occupants.

(v) Special inducements

Are special inducements and incentives given to prospective or established occupants?

Note. It is sometimes considered necessary to grant inducements beyond those inherent in the industrial estate device, for such purposes as encouraging entrepreneurial initiative, attracting industry to estates in certain locations, facilitating operation at early stages and attracting industry from abroad. The measures include, among others, rent subsidies of varying amount and duration, rent differentials for estates in different locations, temporary tax exemptions or abatements, financial grants, credit on special term, preferential allocation of raw materials and other devices. The measures to be described are those related to the industrial estate programme, not those generally available.

(d) Financing of industrial estates

Describe the institutions, methods, terms and conditions for financing public, private, mixed or co-operative industrial estates and networks of industrial estates.

Note. Financing is usually provided by the central, state or local governments, development corporations, credit institutions, community funds, insurance companies, private corporations and so on, or combinations thereof. Where appropriate, special attention might be paid to the financial assistance given by Governments to encourage the establishment of privately sponsored industrial estates.

(e) Evaluation of experience

Evaluate the experience gained in your country in carrying out industrial estate programmes. Compare achievements with objectives. Describe problems, solutions and lessons learned from the experience, and their application to future projects.

Annex II

Countries and Territories which Replied to the Questionnaire

1. Angola (Portuguese)
2. Australia
3. Austria^{a/}
4. Bechuanaland (Protectorate of)^{a/}
5. Belgium
6. Bulgaria
7. Burma^{a/}
8. Canada
9. Ceylon
10. Chad^{a/}
11. China (Taiwan)
12. Congo (Democratic Republic of)^{a/}
13. Cyprus
14. Denmark
15. Ecuador
16. Equatorial Guinea (Spanish)^{a/}
17. Ethiopia^{a/}
18. France
19. Gambia
20. Greece
21. Hong Kong
22. India
23. Ireland
24. Israel
25. Jamaica
26. Japan
27. Jordan^{a/}
28. Kenya
29. Korea, Republic of
30. Madagascar^{a/}
31. Malawi^{a/}
32. Malaysia
33. Malta
34. Mauritius
35. Mexico
36. Mozambique (Portuguese)
37. Netherlands
38. Nicaragua
39. Nigeria
40. Pakistan
41. Puerto Rico
42. Philippines
43. Portugal^{a/}
44. Saudi Arabia
45. Singapore
46. South Africa
47. Southern Rhodesia
48. Sudan^{a/}
49. Thailand
50. Trinidad and Tobago
51. Turkey
52. Uganda
53. United Kingdom of Great Britain and Northern Ireland
54. United Republic of Tanzania
55. United States of America
56. Zambia

^{a/} There are either no industrial estates in existence or no plans to establish industrial estates.

Annex III

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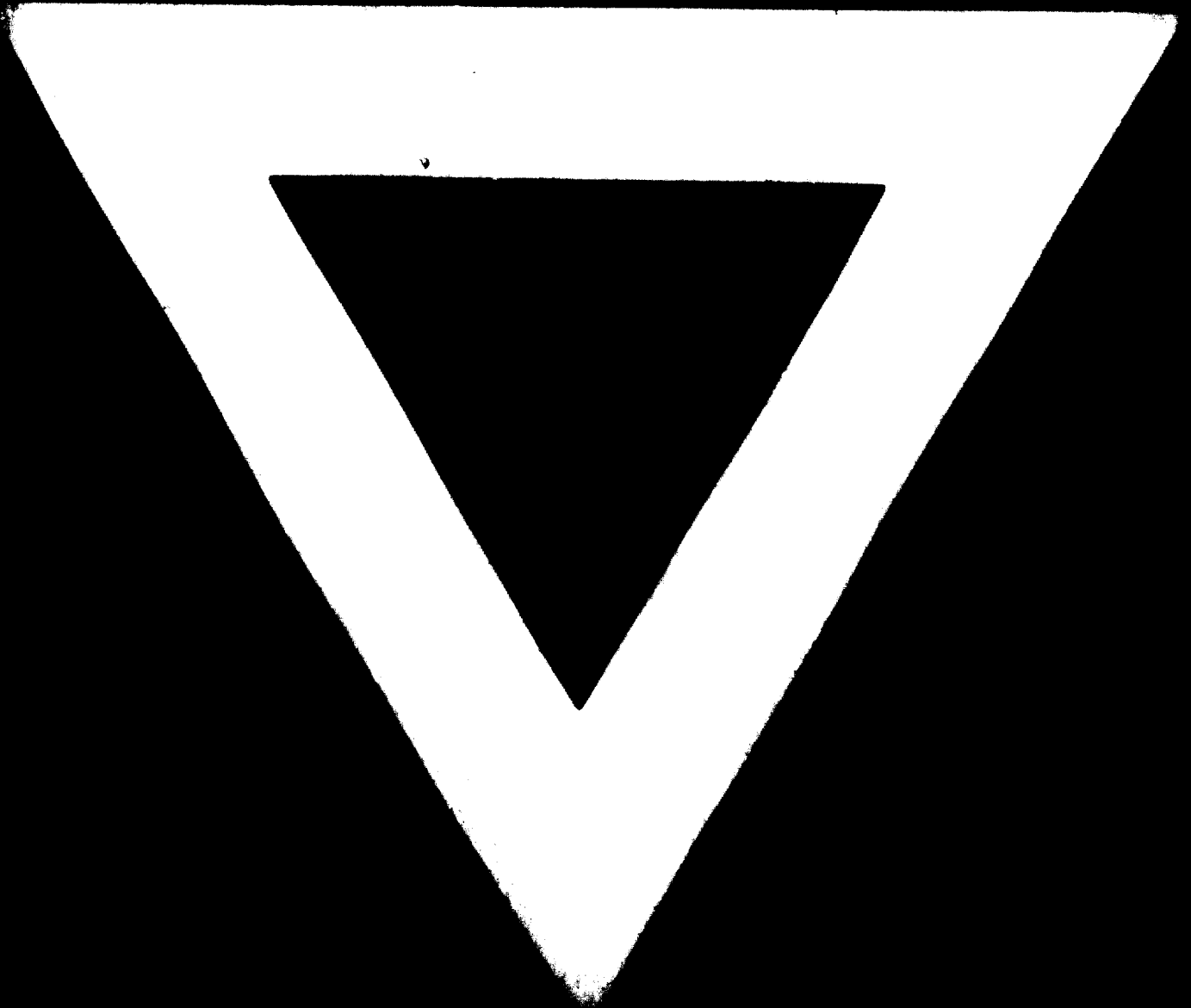
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