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REPORT

on

THE INDUSTRIAL ESTATE PROGRAMMES

in

SIX COUNTRIES

Vienna
March 1976

id.76-1625

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INTRODUCTION

This study of industrial estates in six countries - Cuba, Ecuador, Iran, Pakistan, Senegal and Turkey has been financed by the Swedish International Development Authority and executed by the United Nations Industrial Development Organization between October 1975, and March 1976. The Director of the Study was Mr. Jacob Levitsky, Institutional Infrastructure Section, Industrial Operations Division.

Objectives of the Study

The objectives laid down in the Guidelines to the consultants responsible for the country studies are stated as:

(1) to find out in what circumstances the investments in industrial estates programmes have proved justifiable, and

(2) what are the factors which influence the successful outcomes of these projects?

Secondary objectives are:

(3) to find out what type of enterprises fit into industrial estate programmes;

(4) to determine the optimal size of an industrial estate under different conditions.

The results of the study and the conclusions arrived at are to be used as a guide to policies regarding support programmes for industrial estates, particularly in the promotion of medium and small scale industries.

Criteria of Selection of Programmes Studied

The criteria used to select the countries whose programmes were studied were:

(1) that they should provide, within the limitations of the resources available in finances and time, a varied and representative selection of levels of economic and industrial

development in the principal regions of the developing world and economic and political systems therein;

(2) that the United Nations should have provided aid to the programmes at some stage of their development.

The selection was somewhat restricted by the conditions inherent in the second criterion and by the number of Governments willing and able to provide facilities for the studies to be carried out in their countries.

Scope and Limitations

The objectives lay emphasis on medium and small scale industries. For this reason the facilitating agencies in most of the countries concerned, particularly Iran, Pakistan and Turkey, were those concerned with small scale industry development. In Ecuador and Senegal, they were general industrial development agencies with sections specifically concerned with industrial estate development, whilst in Cuba the agency principally concerned is the Institute for Physical Planning.

In practice this meant that detailed data on medium industrial estates, areas or parks for large and medium scale enterprises were not easily available, being usually the concern of different agencies or departments. With the exception of one industrial area in Turkey visited, statistical and other data on these industrial areas are very general. Their contributions to national economic and industrial development were studied only superficially. Whatever conclusions have been drawn are based in most countries on data referring almost entirely to estates for small and medium-sized firms.

Definitions

Small Scale Industry: Definitions of "small scale " as opposed to "large" industry tend to differ between governmental organizations. National statistical services tend to draw the dividing line at 9 persons engaged in a manufacturing concern, those where 10 or more are engaged being considered as "large". Ministries or agencies concerned with

financial aid or providing incentives in the form of relief from duties and taxes tend to used capital employed. There is usually some contradiction between the two sets of criteria. In Cuba there is no real dividing line as explained in Chapter I. Comparative criteria are listed in Chapter I, Table 2.

Industrial Estates: The tendency is to confine the use of the term "industrial estate" to areas of land with installed infrastructures, with or without standard buildings, primarily designed to house small scale enterprises. In fact, most of those described in this category in consultants' reports include firms well above the small industry dividing line, whether judged by numbers employed or by capital engaged.

Estates for large and medium industry tend to be called "industrial areas" (Turkey), "industrial parks" (Iran, Pakistan), or "industrial zones" (Cuba). These appear to provide land and infrastructure, with administrative and sometimes common facilities buildings but never standard factories, firms being required to build their own to suit their requirements.

Common Facilities: Generally understood to mean the facilities on an estate which can be used by all members, financed, wholly or partly, by the collectivity, and used without additional payment. They may include conference rooms, exhibition halls, workshops, laboratories, common meeting and training courses, maintenance of buildings and infrastructure, first aid stations, polyclinics, fire brigade and police.

Methodology of the Study

The duration of the consultants' study missions were two to three weeks in each country, with two days briefing and one day de-briefing at UNIDO Headquarters in Vienna. In each of the countries participating, a government organisation sponsored the studies, organised the programme of work, provided office space and, generally, some transport and an official to accompany the consultant on visits to relevant organisations and on travels to provincial centres.

The first three or four working days were generally taken up with the finalising of work programmes, collection of basic statistics and background information and discussions with officials of Ministries of Industry, Planning Commissions, governmental organizations concerned with industrial promotion, development Banks, federations of industrialists and the like, in order to gain as much information as possible regarding general conditions in the country concerned, and specific data on the industrial estates programme as a whole.

This stage was normally followed by visits to selected industrial estates and to specific firms, both on the estates and in or around the towns visited, in addition to discussions with local authorities, when in the provinces, and local associations of industrialists and artisans. A final day or two at the headquarters of the sponsoring organization to check facts and figures terminated the mission.

Individual reports were prepared by the consultants at their homes and submitted to UNIDO in January, 1976, apart from that for Cuba, which was completed at the end of March.

Problems Encountered

In all cases governments, through their sponsoring ministries or organizations, took great pains to provide all the information requested by the consultants, and to accord them all the physical and other facilities necessary to carry out their assignments. The main problems encountered by most consultants were:

(1) the shortness of the missions which made in-depth studies of important factors such as comparisons of growth rates of firms in and off estates or benefits to communities from estates, impossible. In some cases, working time was unavoidably curtailed by the need to travel extensively between centres of study.

(2) the lack of reliable, comparable and up-to-date statistics. In no case, except Senegal, were data on performances of individual firms available. Overall figures for output, value added and employment on industrial estates were not separately

published in national industrial statistics.

(3) the effects of inflation and changes in currency values over the last few years (Ecuador, Pakistan, Turkey), coupled with the fact that in no cases did all statistics refer to the same years, made comparisons of reduced value. The exchange rate of the Cuban peso vis a vis the US dollar is artifical.

(4) in certain cases (Iran, Turkey), the need to work through interpreters, however excellent, imposed some constraints.

Notes on this Report

This Report is a consolidation of six reports provided by five research workers. It is an attempt to synthesise the facts and findings relating to the six countries studied.

The individual reports contain copious footnotes and references to source material. It has not been thought necessary to repeat these in this Report in support of facts, figures or statements reported. Only where additional material supporting or amplifying statements or facts reported has been added by the editors have footnotes or sources been included.

The problem of variation in foreign exchange rates over the last few years when attempting to convert local currency into U.S. dollars for comparability was noted above. The rates adopted are those used by the individual consultants as follows:

Cuba	Pesos	0.828	= $1	(1975)[1]
Ecuador	Sucres	26	= $1	(1975)
Iran	Rials	67.5	= $1	(1975)
Pakistan	Rupees	9.7	= $1	(1975)
"	"	4.8	= $1	(1969)
Senegal	CFA Francs	220.	= $1	(1975)
Turkey	Lira(TL)	14.	= $1	(1974)

1/ The Cuban rate of exchange can only be applied with reservations when used to compare financial data.

The Turkish rate is that which was current across most of the period covered by the figures for the industrial estates, although the figure in November 1975 was about TL 15 = $1.

The current Pakistan exchange rate of Rupees 9.7 = $1 used by the consultant is exactly twice the rate in 1969. It therefore seems more logical to use the older rate of Rupees 4.8 = $1 with reference to all figures before 1969, as this gives a far more accurate picture of dollar expenditure in that period.

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Cuba	Ministerio de Desarrollo Industrial - Arquitecto H. Dacosta
Ecuador	Ministerio del Industria, Comercio y Integracion (MICEI) Centro de Desarrollo Industrial del Ecuador (CENDES) - Executive Director - Econ. Marcelo Avila Orejuela
Iran	Organization for Small Scale Industry and Industrial Estates of Iran (OSSI) - Acting Managing Director - Dr. S. Khazei
Pakistan	West Pakistan Industrial Development Corporation (WPIDC)
Senegal	Société nationale d'Etudes et de Promotion industrielle President Directeur General - M. Faly Bâ
Turkey	Ministry of Industry and Technology, Department of Small Industry and Handicrafts - Director General - Mr. Ayhin Karlidag

Thanks are also due to the many people - government officials, officials of industry associations and chambers of commerce, industrialists and United Nations staff who gave freely of their time and knowledge to help in the studies.

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Iran	Mr. David Wall, Consultant.
Pakistan	Mr. Jon Sigurdson, Consultant.
Senegal	Mr. Charles-Rene Droesch, Consultant.
Turkey	Mr. C.R. Wynne-Roberts, Consultant.

This Report has been compiled and edited by Messrs. Levitsky and Wynne-Roberts.

CHAPTER I

THE BACKGROUND - INDUSTRIAL ESTATE PROGRAMMES IN THEIR NATIONAL CONTEXTS

INTRODUCTION

This chapter attempts to set the industrial estate programmes of the six countries studied in their general industrial contexts and to assess the contributions they are making to national manufacturing output and employment. Unfortunately, as explained in the Introduction to the Report, statistics of output, productivity and so on for firms on industrial estates are not separated out in national statistics from those of manufacturing industry as a whole, and figures for Pakistani small scale industry and Senegalese industry are lacking. In Cuba no formal differentiation between large and small industry exists. Assessment of performance on industrial estates is therefore a matter for the judgement of the various consultants carrying out the studies.

Modifications have also had to be made to some national figures if comparisons are to be meaningful; these are indicated under the country headings. Even within countries, statistics for different factors represent different years and are therefore not strictly comparable, as in the case of overall statistics for manufacturing industry for Turkey, the latest available figures being for 1970. Those for the industrial estates are for late 1975. Adjustments have been made. Given the rather shaky statistical base, the comparable data, both between and within countries can only be considered indicative of orders of magnitude in situations which, in some cases, have considerably evolved since the statistics were published.

1. CURRENT STATES OF INDUSTRIALISATION

Table 1 gives the comparative statistics for manufacturing industry in the six countries, divided into large and medium and small scale industry. Table 2 gives definitions of large and small scale industries for Cuba, Ecuador, Iran, Pakistan and Turkey; a definition is lacking

TABLE 1.

Comparative Statistics for Manufacturing Industry - Six Countries

(All Output & Value added Figures in US Dollars)

	CUBA[5]	ECUADOR[2]	IRAN	PAKISTAN[3]	SENEGAL	TURKEY
UN Estimate of Population [97]		6,598,300	30,550,500	64,892,000	4,120,000	40,300,000 [97]
		1970	1973-74	1971-72	-	1970
Total No. of Establishments	N.A.	1,080	242,400	N.A.	190[4]	174,538
Total No. of Persons engaged[1]	636,900	53,666	929,000	2,300,000	N.A.	776,209
No. of Establishments	N.A.	688	6,200	3,587	N.A	4,415
No. of Persons engaged	636,900	49,071	456,000	300,000	N.A	449,301
Output ($)	5,384,400,000	425,318,000	2,576,000,000	1,216,538,000	N.A	3,571,629,000
Output/Person engaged ($)	8,454	9,302	5,649	4,055	N.A	7,949
Value added ($)	NA	186,065,380	1,347,940,000	496,000,000	N.A	1,451,182,000
Value added/Person engd ($)	N.A	3,791	2,955	1,653	N.A	[illegible]
No. of Establishments	Practically non-existent	392	234,000	N.A.	N.A	170,123
No. of Persons engaged		4,595	473,000	2,000,000	N.A	324,908
Output ($)		7,633,628	1,513,000,000	N.A.	N.A	839,632,000
Output/Person engaged ($)		1,661	3,189	N.A	N.A	2,584
Value added ($)		3,925,280	634,240,000	N.A.	N.A	260,742,000
Value added/Person engd ($)		854	1,337	N.A.	N.A	803

[1] Including members of families and other unsalaried workers not considered "employees". (See text)

[2] See text for explanation of breakdown greater and less than 10 persons engaged. Does not include artisans.

[3] 1970. UN Statistical Yearbook, 1974. P. 210. Rupees converted at current value 9.7/$1.

[4] Of these 15% employ more than 50 persons but supply 90% added value. (EEC Survey).

[5] The figures for Cuba are not directly comparable due to the different computation of national accounts.

TABLE 2
Definitions of Small Scale Industry - Five Countries

CUBA	ECUADOR	IRAN	PAKISTAN	TURKEY
There is no formal definition by Government agencies. In general terms, plants employing fewer than 100 workers are considered to be small, except those with high capital investment, eg. chemical plants.	(No definition by Government Statistical Services) "Firms using machinery to a major extent are engaged in transforming raw materials or semi-finished products into finished or intermediate products. Capital assets, excluding land and buildings, should not exceed ... 5 million Sucres" ($ 152,300) [Until recently 1.5m sucres] Ley de Fomento de la Pequeña Industria y Artesanía Decreto No 921	Firms employing less than 10 workers or a capital investment of less than 1.5 million rials. ($ 111,100) Government of Iran (Source document unknown)	All "unregistered" establishments with less than 10 workers. Central Statistical Office & Statistical Division Ministry of Finance, Planning and Development Manufacturing establishments ... employing 10 or more workers using power and ... 20 or more workers with or without power are considered medium industry Factories Act 1934 Sections 2(j) and (5): Fixed assets not greater than Rs 2 million - Punjab & Sind not greater than 3 million - NWFP	Firms in which less than 10 persons are engaged in manufacturing (including repair). State Institute of Statistics "Manufacturing establishments with power & equipment to a value not greater than TL 5 million" ($ 357,140) Ministry of Industry & Technology

for Senegal. In practice these definitions are almost useless, because all the so-called small industry estates have firms considerably larger than the upper limits laid down and the definitions themselves differ between government departments. They are principally used for statistical purposes and to determine eligibility for concessions and benefits. As already noted in Table 2, there is no formal definition of small scale industry. Firms with fewer than 10 persons engaged have been virtually eliminated.

Table 1 shows that Ecuador apparently has fewer firms under the small industry heading than under the large, in contrast to the other countries. In the first place, the figures are estimates, because Ecuadorian statistics divide firms by output and not by numbers employed as in other cases, and in the second, they obviously exclude artisan workshops, which are included in the figures for Iran, Pakistan and Turkey.

It is a pity that there are not more up-to-date figures for these countries because they are all currently undergoing an acceleration in industrialisation which in the cases of Ecuador and Iran is due primarily to increased oil revenues since 1973. In the case of Pakistan, it is taking place mainly in the public, large scale sector, since the secession of Bangladesh in 1971. In Cuba the process is an integral part of the planned development of every aspect of national economic and social life.

Table 3 is a breakdown of manufacturing industry by industry groups, intended to give an idea of the state of industrialisation of the respective countries.

CUBA

Cuba is a socialist country and as such does not encourage private enterprise in industry or commerce. The only private ownership remaining is in agriculture, where quite a large number of farmers have been allowed to keep their smallholdings, limited in area and subject to various controls. It is still primarily an agricultural country; the great majority of the people derive their livelihood from the land. Of an estimated population of working age of 4,465,000 in 1974, (including many women who do not work outside their homes), only 438,000 were employed in industry. Of these an estimated 90,000 worked in sugar processing and refining.

As in other socialist countries, industries are set up and managed by different sectoral ministries, (see Figure 7, Chapter III). For example, the Ministry of Light Industry is responsible for the operation of leather and shoe factories, the Ministry of Food for the production of all food items, the Ministry of Public Health for the pharmaceutical industry and the Ministry of Education for educational equipment and sporting goods. The Ministry of Industrial Development has a coordinating role. Every industrial project is submitted to a rigorous techno-economic examination to determine its viability and scale of operation before approval.

As shown in Table III, there is no official policy regarding small industry. The notional dividing line between small and large of 100 persons engaged is very much larger than that in other developing countries. Indeed, the term "small scale industries" has no real meaning in Cuba. All industry is planned to the last detail. The planners determine the scale of operations based on market considerations, the available labour force and the technology to be employed. The criterion for planning is the "optimum size", consideration being given to economies of scale. In many cases, particularly the processing of agricultural raw materials, one large factory is preferred so as to take advantage of advanced technology. However, in the production of certain consumer items where the services are local, such as bakeries and ice plants, and where methods are labour intensive, smaller plants are set up. No special measures are needed to assist these. Cooperatives, although approved politically and socially, have not yet developed in the industrial sector.

ECUADOR

The dividing line between large and small industry has been arbitrarily chosen by treating the lowest two output groups,[1] the average size of whose firms are 8 and 16 persons engaged respectively, as small industry and the rest as medium and large industry. This brings the Ecuadorian statistics as nearly as possible into line with those of Iran, Pakistan and Turkey, where the dividing line used by the statistical institutes is 10 persons engaged.

1/ Ministry of Industry, Commerce and Integration: Manufacturing Industry Establishments grouped by Output and by Industries, 1970 (attached to original Consultant's Report.)

TABLE 3.

Firms and Employment by Industrie - Four Countries
(Percentages)

Industry Sector (ISIC Classification)	CUBA [5]		ECUADOR [1] 1970		IRAN [2] 1971-72		TURKEY [3] 1970	
	Value of production	Persons engaged	Firms	Persons engaged	Firms	Persons engaged	Firms	Persons engaged
31 Food, beverages & tobacco	47.6 [6]	Not	34.2	29.7	16.9	21.4	10.3	13.4
32 Textiles, clothing & footwear	9.8		18.3	31.3	45.9	44.4	35.1	30.0
33 Timber products & furniture	2.2	available	6.8	6.1	8.3	5.1	13.5	14.2
34 Paper, printing & publishing	1.6		10.3	7.3	1.3	2.0	1.6	2.3
35 Chemical Products	20.8 [7]		13.5	11.1	1.5	2.4	1.0	1.9
36 Mineral Products	6.7		4.0	5.1	4.1	6.7	2.7	3.0
37 Basic metal industries	7.2		0.4	0.5	0.6	1.2	-	-
38 Metal products and machinery			9.8	7.6	19.7	16.0	29.1 [4]	29.6
39 Other manufactured products	4.1		2.7	1.2	1.7	0.8	6.7	5.6
All Group 3	100.0		100.0	100.0	100.0	100.0	100.0	100.0

[1] Does not include artisans.

[2] Includes artisans

[3] Small scale industries only. State Institute of Statistics: Census of Industry & Business Establishments - Manufacturing Industry - II Small Scale Industries, 1970. Includes artisan establishments.

[4] Includes furniture and leather products not included for other countries.

[5] For Cuba only - Value of Production - percent per Sector

[6] Includes sugar processing.

[7] Includes petroleum and derivatives

Growth rate of the GDP of Ecuador in 1974 was 9.5-10 per cent, but t is was mainly due to th increase in oil evenues. Ecuador also benefits from the allocation of quite a wide range of products to be manufactured there under Andean Common Market agreements. Few of the firms generated by these two factors are yet in operation, so that the 1970 figures may still be fairly valid today. In any case the Ecuadorian industrial estates programme is so small that statistical variations do not matter.

The estimated average employment for the "small industry" groups was 8.5 per cent, while 54 per cent of employment was in groups averaging more than 100 workers per firm. What industries there are tend to be medium-sized rather than small, leaving a large artisan sector unaccounted for, including many repair workshops integrated in the Turkish figures. From Table 3 it can be seen that 66 per cent of the workforce was employed in food, drink, textiles and clothing, while only 8.9 per cent were employed in basic metals and metal products manufacture. This is fairly typical of the early stages of industrialisation.

A surprising feature is the very wide gap in output and value added per person engaged between the large industries and the small, because those small firms visited by the consultant seemed rather better equipped with aids to productivity than similar firms in, say, Pakistan or Turkey.

IRAN

In iran in 1973-74, 97.4 per cent of all industrial establishments had from 0 - 9 persons engaged, the average per unit being two persons. Clearly, the vast majority of these establishments are single artisans whose families are not registered, although they also work in the business. 2.1 per cent employ between 10 and 19, 51 per cent of persons engaged were in units in the 0 - 9 range and another 10 per cent in the 10 - 19 range. 35 per cent were employed in firms with over 100 workers.

Numbers of establishments in Iran grew from 165,280 in 1970-71 to 242,451 in 1973-74, an increase of 46 per cent in three years. The growth must obviously be in the handicrafts sector, but percentage-wise the increase was in the over 100 employees category which doubled in number from 300 to 600 firms.

In Iran in 1971-72, 65.8 per cent of persons engaged were in food, drinks, textiles and clothing, while 17.2 per cent were in basic metal industries. Since the former group of industries is normally more lab ur intensive than the latter, the country is evidently much further on the road to industrialisation than Ecuador.

PAKISTAN

After the 1971 war the Government embarked on a programme of nationalisation including banks, major engineering industries, automobile manufacture, tractors, cement, sugar and other basic industries. They are now grouped in a number of State corporations under a Board of Industrial Management. The public sector has planned investments of 7,861 million rupees ($ 810 million) in the period 1975-1978, of which 4,762 million rupees ($491 million) represents foreign financing. Projected private investment in large scale industry for 1974-75 was 610 million rupees ($ 63 million) and for small scale industry 500 million rupees ($ 51.5 million)[1].

From Table 1 it can be seen that, in spite of its much greater population, Pakistan industry employed fewer people in large industry in the year 1971-72 (when figures may have been distorted by the war), than either Iran or Turkey, in spite of its much greater population. The productivity is also lower. Reliable figures for small scale industry do not seem to be available.

Official estimates indicate that the small industry contribution to GNP fell from five per cent in 1960-61 to 3.2 per per cent in 1973-74. This is felt by the consultant to be conservative; he believes that for 1973-74 it may be as high as eight per cent. The SSI share of

1/ The data in this paragraph has been extracted from a study made in June 1975 of management development needs in Pakistan by C.R. Wynne-Roberts.

industrial investment rose from 10.7 per cent in 1965-66 to 16.5 per cent in 1972-73. However, the share of output is said to have declined from 26.4 per cent to 22.1 per cent. The figures are apparently unreliable.

Small scale industry's exports are extensive with a high rate of growth in carpets, surgical instruments and sporting goods. In 1973- 74 products traditionally part of the small industry and handicrafts sector made up 30 per cent of the total exports of manufactured products of 3.86 billion rupees.

Capital productivity seems higher in small than in large firms, although the capital investment is far lower. Incremental investment for each additional workplace in small industry is 3,000 rupees ($ 309), in large industry it is 80,000 rupees ($ 8,247).

SENEGAL

No overall statistics for industry or employment in Senegal appear to exist in any of the UN Statistical Yearbooks. The figure of 190 manufacturing firms is based on a survey by an E.E.C. team. Of these 29 (15 per cent) employ more than 50 persons but supply more than 90 per cent of the added value. The percentage of foreign firms is believed to be high.

TURKEY

Turkey is the one country of those studied where there is an effective industrial estates programme, particularly in the small industry sector. It is especially unfortunate that the industrial statistics should be so out of date. A census was taken at the end of 1975, but it will be many months, if not years, before the results appear.

The publication of the Natio al Institute for Statistics from which the figures in Table 1 were taken differentiates between "employees" and "persons engaged", the latter presumably being members of the owners' families and other uninsured persons. In large industry (more than 9 persons engaged), of the 449,301 persons engaged, 443, 401 are listed as employees, while of the 324,908 persons in small industry, only 98,325 are so listed. The position in Turkey is further complicated

by the employment of very large numbers of boys between the ages of 12 and 15 who do not have to be registered for social security and whose presence, it is understood, is not always declared. In some small firms, they make up more than half the numbers employed. The Turkiye Is Bankasi, Review of Economic Conditions, 1973-75, gives the insured labour force in manufacturing as 553,000, an increase of only 2.1 per cent over the 541,726 number of employees, presumably all insured persons, given in the 1970 census figures. This seems improbable in the light of the growth rate of the Turkish industry which in 1974 was 9.4 per cent and in the recession year of 1975 was estimated at 7.6 per cent. If an average figure of only seven per cent can be accepted for the five years 1970 to 1975, the growth in that period is 35 per cent.

The 170,123 small firms listed include 86,887 in which only one person is said to be engaged[1/] and 114,920 were using no-power machinery. These would be most likely to be found in the "one person engaged" group. No comparable breakdown of machinery or horsepower employed in industry exists for other countries. It could reasonably be assumed that few, if any, of the firms not using power, whose numbers may well have diminished over the last five years, are on an industrial estate. To put the contribution of industrial estates to industry as a whole in perspective, it is therefore proposed to deduct all the "one person engaged" businesses from the total of establishments, even though some do use power. This should give a more realistic picture of the relation between numbers of firms and persons engaged in industrial estates and the figures for both the whole of the manufacturing industry and the small industry sector. If, furthermore, the growth of Turkish industry be taken at only seven per cent per annum over the five years 1970-75, the numbers employed may be increased by 35 per cent. This will modify the figures for 1970 as below. The estimated numbers employed in 1975 would then be:

1/ Although, curiously enough, the number of "persons engaged" is given as 88,259

	1970	+35%	1975
Total persons engaged	774,209		
less "one person" firms	88,259		
	685,950	+ 240,082	926,032
Persons engaged - SSI	324,908		
less "one person" firms	88,259		
	236,649	+ 82,827	319,476

The above discussion gives some idea of the difficulty of producing meaningful figures by which to assess the role of industrial estates. They will be used in connection with Table 4 and Section 5 below.

From Table 3 it may be seen that the metal products and machinery group of industries is second only to textile and clothing group in numbers of establishments and persons engaged. This embodies the manufacture of transport equipment, which presumably includes the huge number of automobile repair shops which provide an important percentage of membership of industrial estates (see chapter II).

2. GOVERNMENT POLICIES AND PROGRAMMES FOR SMALL INDUSTRY

In all countries except Cuba, small industry is subject to some form of Government action and encouragement.

Ecuador

In Ecuador there is a special law which provides many benefits in the form of exoneration from import duties and taxes, generally for the first five years of the company's life.[1/] Firms wishing for these benefits must register themselves with the Ministry of Industry, Commerce and Integration, (MICEI), and must be approved by the Inter-Ministerial Commission for the Development of Small Industry and Handicrafts. They must be members of small industry associations. There are also three official financial institutions which will provide credit facilities to small industry and handicrafts. Technical assistance is available through the Centro Nacional de Desarrollo Industrial del Ecuador, (CENDES), which is the agency under the MICEI responsible for the implementation of industrial development policy and which also provides the management and financing for the industrial estate programme. A UNIDO technical cooperation mission is currently attached.

IRAN

In Iran the objectives and plans for industrialisation have been completely re-evalued as a result of the recent increase in oil revenues. So far no new policy has been evolved and current policy consists of a series of ad hoc decisions. Rapid industrialisation is the objective of the Government, but the meaning of this in quantative terms is not clear, nor is it certain where Iran's comparative advantage in industry may lie when the oil revenues begin to taper off. There seem to be two main routes along which the process of industrialisation is being guided, namely:

1/ Ley de Fomento de la Pequeña Industria y Artesania (Revised and Codified) Decreta No. 921. 1973.

- a large scale development of the processing of the natural resources of oil, natural gas and metallic minerals by the State sector in conjunction with foreign assistance, and
- import substitution across a wide range of products by private industry, domestic and foreign, with little guidance as to the selection of products.

The small-scale industry sector is concerned only in the second field. There is a more or less free issue of permits - in 1974-75, 650 permits were issued to medium and large scale plants, the total capital outlay sanctioned being 200,000 millions rials, (approximately $ 3,000 million) 50 per cent being to the private sector. These are associated with a protective commercial policy, and free availability of foreign exchange for imports of raw materials, capital equipment and technical assistance.

The main constraint is Iran's absorptive capacity. The development of new industry can only proceed at a pace consistent with the capacity of Iran's physical and man-made infrastructure to cope with it. To speed up the process and protect the fragile natural environment, the Government has decided, initially at least, to allow industrial development in a restricted number of locations, geographically balanced for social, political and economic reasons.

This policy of concentration is based on the old system of industrial zoning which started in 1967 from a decision to ban all further expansion of industry in or within 120 miles of Teheran. At that time, pollution, congestion and water supply problems were felt to have reached critical levels. Under this policy four cities were initially identified as zones for industrial development.

Tabriz, (in the north), for heavy industry;
Rasht, (on the Caspian Sea), and
Shiraz (in the south), for electronics and electrical industries;
Isfahan (in the centre), for steel based products (to profit from the steel industry already there), and light consumer goods.

Later were added:

Khorasan for food processing;
Arak (200 km. S.W. of Teheran), for aluminium based industries;
Kuzestan (S.W. on the Gulf), for mixed industries.

These zones are developing according to plan, except Khoresan and Isfahan, where as yet little has been done. In addition, spontaneous and unplanned industrial growth has taken place at Qazvin and Saveh, both just 120 kilometres from Teheran. Industries there can be managed from Teheran-based head offices and benefit from proximity to Government offices and the city's infrastructure. The Government has stepped in at Qazvin and is developing an important industrial park. It has now taken steps to identify more towns for development and establish most new plants in industrial parks. (See Chapter II).

Little serious thought is being given to the development of small industry, which is being left to its own devices, within the flexible policy structure of imports of capital goods and raw materials. Positive measures are being channeled through the Organization for Small Industry and Industrial Estates of Iran, (OSSI), an offshoot of the Ministry of Economy and Finance, whose contribution so far has been marginal due to lack of staff and finance. There are serious weaknesses in the Government machine responsible for industrial policy and a chronic shortage of trained and experienced specialists, which is resulting in a slowing down of agreed courses of action.

Pakistan

Pakistan has in the past been mainly concentrating her industrial effort on large and medium enterprises and a consistent long term policy for small industry has not developed. Apart from the development of a few industrial estates in the early sixties, small scale and rural industry seems to have been neglected. Even statistical information has not been systematically collected, a national survey (West Pakistan) being last made in 1967.

However, as Table I shows, small scale and handicrafts industries employ 2 million people, 1.2 million in rural areas, nearly 11 per cent of the labour force and 85 per cent of the total employment in manufacturing. Evidently the way in which this sector responds to market opportunities and change will have important repercussions on Pakistan's development pattern and total economy.

As may be seen from Table 2, small-scale industry is defined by the number of workers, (less than 10 with power machinery) and an upper limit of capital invested in fixed assets.

The organization responsible for small industry development and industrial estates until 1972 was the Small Industries Division of the West Pakistan Industrial Development Corporation, (PIDC). Since 1972 control has been in the hands of the four provinces,[1/] each of which has set up its own organization.

SENEGAL

The official institution responsible for industrial development is the Société nationale d'Etudes et de Promotion industrielle, (SONEPI). Its aim for the next five years is to help 30 African entrepreneurs to create small or medium sized industries. In order to satisfy the five conditions considered necessary to create viable enterprises, SONEPI is giving assistance in the following fields:

- acquainting investors with managerial and administrative techniques;
- making feasibility studies with the owners of prospective firms;
- financing the acquisition of machinery and equipment and providing working capital;
- helping in the management of the firm and marketing of the products;
- assisting to improve production and develop new products.

The major problem is financing the projects. It is very difficult to obtain medium and long term loans from banks. A local investor can only obtain such a loan if he is able to bring 35 per cent of the total

1/ Baluchistan, North West Frontier Province (NWFP), Punjab and Sind.

investment required, which very few Senegalese are able to do. To overcome this problem, SONEPI has created in 1970 a fund by which participation can take place and loans be guaranteed. This works with the cooperation of the Government, the Banque centrale des Etats de l'Afrique de l'Ouest and French and West German aid. Through this participation fund, SONEPI can make up the investor's contribution to the mandatory 35 per cent. The private investor commits himself to take over SONEPI's share as soon as the bank loans for material and equipment are paid. As of March, 1975, this fund has helped to create 34 new enterprises. Some 50 million francs CFA, (about $230,000) have initiated total investments of 1,050 million francs, (about $4.77 millions). Of this sum, 583 millions have been for medium sized industries and 468 million for small industries.

Although well-structured, SONEPI at present lacks sufficient qualified staff, but is nevertheless steadily becoming more effective.

Turkey

The organization responsible for the development and implementation of policies for small scale industry and industrial estates is the Department of Small Industry and Handicrafts of the Ministry of Industry and Technology. In Turkey it is not necessary to promote small industries; they already exist in large numbers. For example, Gaziantep, a city of less than 300,000 inhabitants, in southern Anatolia, is said to have 5,000 small firms, most of them really artisan shops. A very large number, as in other towns, are concerned with automobile and agricultural equipment repair. The Ministry is therefore concentrating on upgrading existing industries; industrial estates are an important instrument in this process. (See Section5.) They are also a means of stimulating industrial development in less developed regions.

Apart from the promotion of industrial estates, the Ministry provides some raw materials, notably iron and steel at prices below market prices, meeting about 50 per cent of small industry's demand. Credits for equipment and working capital may be obtained through small industry associations.

The Department carries out a training programme supplementary to those operated by local technical schools which embrace selected technical fields such as welding and other techniques of metalworking, radio and electrical manufacture and repair, automobile engine repair and woodworking. Different towns in which courses will be held are selected by an ad hoc committee. There are also programmes for owners and managers.

Finally, the Department is developing extension services. A start has been made with a UNIDO supported project on the Gaziantep Industrial Estate (see Chapter II), which is currently providing technical assistance to industries in the city. The experience is proving positive and has resulted in a project, also with UNIDO support, to set up a National Small Industries Development Centre.

3. CONDITIONS IN SMALL INDUSTRIAL ESTABLISHMENTS

Before moving on to discuss the place of industrial estates in the countries under study, something must be said briefly about conditions in existing industries, particularly small firms in cities, since this is a critical factor in the development of industrial estates.

Generally speaking, conditions in small manufacturing enterprises and repair shops in developing countries are very bad. The premises are cramped, badly lit, lacking ventilation, and machinery is usually unprotected. In countries where the climate permits, they tend to spread their activities and their stocks on to the sidewalks and even the roads. These conditions do not make for efficiency. However, the small industrialist will tend to cling to his premises until he finds they seriously impede the growth of his business, and usually much longer than he should. Among the reasons for this are, first, the premises, often simple wooden structures or old houses, very cheap to rent, if they are not his own: larger alternatives and purchase elsewhere would normally mean outlaying a good deal of capital. Secondly, these premises

are usually fairly central and in districts where groups of small firms - auto repairers, metal furniture makers, carpenters, shoemakers and so on form their own special quarters. They are easily accessible to clients, for raw materials, equipment and other services.

In every country studied small entrepreneurs expressed fears that if they moved out to industrial estates, they would lose contact with customers and their vacated premises might even be re-occupied by firms in competition with them. Only in Turkey has this fear, although initially strong, been exorcised by the creation of industrial estates by cooperatives of firms in the same and related fields. This problem does not arise in Cuba because the producers do not market their products. One of the primary objectives of the Turkish programme is to reduce the congestion in the cities and towns, much of which is caused by the very large numbers of small firms operating in confined premises in narrow streets. Re-occupation of these premises by industrial firms is forbidden once they are vacated and attempts to do so are frustrated by the municipalities cutting off power and water. The same drastic action may even be taken against firms which are slow to take up their places on completed estates.

The small firm operating in dilapidated premises on congested streets is common in Turkey and Pakistan. In Iran, many artisan workshops are located in covered bazaars, which are in themselves a form of industrial estate with "streets" allocated to various trades. They represent not only physical entities, but the "bazaar" in Iran has been in the past the major trading and financial institution, often responsible for financing and setting up modern factories outside. Bazaar premises are generally very cramped and the structure makes any addition to the premises difficult, if not impossible.

Conditions in industry in Cuba before the revolution were similar to those in most other developing countries. One of the major objectives of the Government in concentrating smaller units into larger ones is to improve working conditions and be able to comply with the regulations of the Ministry of Labour. The provision of modern buildings erected for the larger production units makes an important contribution to this aim.

In Ecuador, it seems that only in Guayaquil (994,000 inhabitants), the largest city and main port, are conditions of small workshops in the town as cramped and the congestion becoming as serious as currently found in some countries in Asia. This is certainly one of the reasons why until recently there has been very little enthusiasm among small entrepreneurs to move out on to industrial estates.

4. THE SMALL INDUSTRIALIST AND HIS WORKERS

In all countries, whether developed or developing, the small industrialist is a man who has the energy and the "achievement motivation" to lift himself out of the ranks of his fellow workers and strike out, letting go the security of a salaried or wage-earning position to take the risk which can bring greater rewards - but also bankruptcy. He has a desire for independence and a certain confidence in his own abilities not found in the average employee.

In developing countries where there is still plenty of scope for setting up new industries larger firms are usually set up by merchants who have made money, often by importing, and who see possibilities of making even more money by producing the goods in their own countries. It was thus in Pakistan, after the partition of India, particularly in the textile industry. Sometimes the entrepreneurs are financiers (money lenders), or landowners, who have received compensation under land reform schemes, as in Iran. In Latin America they may also be immigrants with money. This does not, of course apply in Cuba.

The small industrialist is generally a craftsman with the strength and weaknesses of his kind. He is likely to have little formal education, (only two men were met among small industrialists in Turkey who had some technical education). He may even be illiterate. He is generally resourceful, good at improvisation and good at copying. Outstanding examples of these characteristics were seen in both Ecuador and Turkey, although the general character of the two peoples is quite different.

The man who has set up his own business, with all the attendant risks and headaches, has done so, inter alia, because he wants to be his own master. This fierce independence may make it difficult for him to cooperate with fellow entrepreneurs and, indeed, he may mistrust them. In Ecuador, the consultant was repeatedly told: "We are bad at cooperatives". On the other hand, in Turkey there seems to be a long tradition of cooperation and a degree of mutual trust which makes cooperation relatively easy. Reports of conversations which the consultant had with industrialists on the industrial estate at Thies in Senegal seem to confirm that the artisans there are developing entrepreneurial characteristics.

The characteristics of the entrepreneur and national character are important in the success of an industrial estate programme. There are, for example, marked differences in the attitudes to setting up industrial estates in Turkey and in Ecuador. In Turkey, the Government credits available for buildings were in many cases only partially taken up by the cooperatives, even with an interest rate of only five per cent. In some cases large estates have been set up with no Government help at all. In Guayaquil it was stated that, although many industrialists were anxious to move out of the city because of congestion, they were not prepared to contribute to the preliminary studies necessary. The question is examined again in Chapter V.

In all countries very small firms rely heavily on family members. In Turkey, where adult workers have to be insured for social security, thus adding to labour costs, there is extensive employment of boys between 12 and 15 years, nominally learners or apprentices. Most small firm owners seem to have started their working lives in this way.

Adult workers in small firms generally have much worse conditions of employment and of work than those in large industry. Even in countries with strong trade union movements such as Pakistan and Turkey, unionists are rarely found in small firms.[1/] Only on one industrial

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1/ Since the 1971 war, trade unions in Pakistan seem to have splintered and there are now more than 7,000.

TABLE 4.

Firms and Numbers employed on Industrial Estates in relation to Total Manufacturing Industry & Employment

		Cuba[4]	Ecuador 1970[1]	Iran 1971-72	Pakistan	Senegal 1975	Turkey 1970[2]
L & M Industries	No. of Establishments	-	688	6,200 (73-74)	3,587	190	4,415 (1970)
	Numbers employed (Est.)	-	49,071	456,000 (73-74)	300,000	N.A	449,301 (1970)
	Total firms on Ind. Estate	-	5	15 Ahwaz [illegible]	N.A.	N.A	N.A
	Numbers employed (Est.)	-	200	5,5[illegible][3]	N.A	N.A	N.A
Small Scale Industries	No. of Establishments	-	392	236,200	N.A.	N.A	83,236 (1975)
	Numbers employed (Est.)	-	4,595	473,000	2,000,000	N.A.	319,47[illegible] (1975)
	Total firms on Ind. Estate	-	None	None	N.A	9	6,134 (1975)
	Numbers employed (Est.)	-	None	None	N.A	138	24,500 (1975)

1 1970 for general figures, 1975 for estates.

2 Figures for small industry have been adjusted to estimated 1975 figures. See text.

3 Based on estimated 33 workers per firm on Ahwaz estate.

4 No separate figures are shown for Cuba since the industrial estate concept does not exist.

estate visited in Turkey were the beginnings of unionism to be found, although in firms on a large industrial area the majority of workers were unionised. No trade unionists were found in Ecuador or Senegal.

5. THE PLACE OF INDUSTRIAL ESTATES IN THE NATIONAL INDUSTRIAL CONTEXT

Table 4 shows some statistics regarding industry, employment and industrial estates in the six countries studied. The table is divided into large and medium industry and small-scale industry. Statistics regarding manufacturing industry in Senegal appear inexistent and data for Pakistan is sketchy. Nowhere has data regarding outputs from firms on industrial estates been separated out from general industrial figures, which makes it impossible to assess to what degree productivity on industrial estates may be higher than for the general run of industry, something which might be expected.

The contribution of industrial estates to the economies of the respective countries are commented in turn below.

Cuba: Apart from the mining and sugar industries and certain light industries relying on female labour, which are therefore housed within or near residential areas, all industries will in future be located and, in part, integrated in industrial zones. This means that "compact planning" - the grouping of factories in restricted areas - and the provision of common services will increasingly become the standard practice. (See Chapter II).

Ecuador: Firms on the only two estates occupied, Ibarra and Tulcan number five, all medium sized, three at Ibarra and two at Tulcan. 60 workers are employed at Ibarra and 140 at Tulcan, the main employment there being in a firm making animal feedstuffs employing 100 workers, including salesmen and staff. and a firm processing raw cocoa into blocks of chocolate for use in confectionary. The production of the latter is practically all exported. This represents 0.72 per cent of the firms and 0.40 of the employment in 1970, certainly lesser percentages of today's figures.

Neither of the "estates" really qualify for the term, being in each case three standard units located on prepared land erected at Government expense, there being no other amenities. Certainly in the case of Tulcan, where both firms are owned by the same Colombian company, the firm would have gone ahead and set up its plants on its own site, had the prepared site not been available.

Iran: Table 4 shows that in Iran there are so far no small industry estates, although 30 are under consideration and four in course of development. None seems yet to be operational. The Ahwaz Industrial Estate was intended for small industry (see Chapter II), but small firms could not be induced to join it and all the firms on it are medium sized. The official figure for employment on the estate is 500, but a UN survey found it to be 207.[1] This is after 10 years of operation.

The industrial development programme calls for the zoning of industry in selected towns. Six industrial zones are currently under construction for medium and large industry, of which Qazvin is partially in operation with 80 firms in production. If the national average of about 70 employees per company be used, this means the employment of about 5,600 workers. Qazvin has at present under construction a further 40 plants and 20 firms have taken leases.[2] It is intended to expand the estate to take another 80 units, which will make the eventual total 220 units. If the rate of employment is maintained, this should finally provide employment for more than 15,000. For a single estate this is an important contribution.

The programme of estates for medium and large industry is envisaged as rising to 15 estates of 200 units each giving employment to 45,000 persons per estate, a total of 675,000 new jobs. This must be considered as a very long term programme, possibly 15 to 20 years. Even then, an average size of 225 employees per unit seems rather high, given that the major industries such as motor car assembly plants, steel works and heavy machinery building factories will be outside the estates. The estimate for the completed Qazvin estate of 15,000 employees sounds more realistic. One factor which makes the attainment of such a large number of jobs in medium and large industry doubtful

1/ Probably due, in part, to some workers taking two jobs.

2/ See Table 5, Chapter II.

is the absorption capacity of the Iranian market or, indeed, of the export markets accessible to Iran within the foreseeable future.

So far industrial estates or zones (Ahwaz and Qasvin) have contributed 95 firms (1.5 per cent of large and medium firms) and an estimated maximum of 5,500 jobs (1.2 per cent) to employment. If, however, the programme for the large and medium industry zones does materialise, even at the lower level of employment of 70 jobs per unit, it will begin to make a significant contribution. Furthermore, the fact of creating an infrastructure for a group of buildings on a large scale instead instead of factory by factory, as in the case of individually located plants, cannot but reduce the investment substantially, as well as protecting the environment and the scarce resources.

Pakistan

Statistics for numbers employed in Pakistan appear to include artisan workshops which cannot properly be called "industries". The total number of small firms in the country is not known, but 270 were in operation on the small industry estates at the time of the consultant's study. Even if artisan workshops are excluded, this cannot be more than five per cent of the total, and probably less. The 8,000 jobs on the small industry estates estimated by the consultant (see Chapter II) represent only 0.4 per cent of the persons engaged in small industries and handicrafts. Furthermore, many of the firms on the industrial estates, a few of which employ over 100 workers, were already in existence, and moved to the estates with an important part of their workforces. Experience in Turkey suggests that firms double the number of their employees on an average after two years on an industrial estate. If this is the case, the small industry estates have created about 4,000 new jobs over more than ten years since the estates were set up, not a very impressive performance. The occupancy rate on the estates is still low, apart from two in the Punjab.

Very little statistical information has been made available about the larger estates. The first estate to be set up was that in Karachi in 1948, just after the creation of the State. It was intended to develop it across 20 years and by 1969 it had about 700 firms on it. The average of employees per firm is not known; if it had to be very conservatively assumed to be only 40, this represents 28,000 jobs,

created at a time when Karachi was a town swollen with a huge refugee population desperately in search of work. The Karachi estate must therefore be said to have laid the foundations of industrialisation in Pakistan (then West Pakistan), together with the textile firms founded, mainly in Karachi, through the early fifties. There was very little other industrial employment at that time.

In addition to the original Karachi estate, six other estates were set up for medium and large industry in the early fifties and in 1965. Neither the numbers of firms on each of these nor the employment on them are known. Again it is necessary to make some guesstimate to assess their possible influence. Some are smaller than the Karachi estate, and the investments much lower. Assuming a figure of 50 firms per estate with an employment of 40 per firm, this makes 300 firms and some 12,000 jobs in ten years. Added to the possible 28,000 jobs on the Karachi estate, it represents 40,000 jobs, 13 per cent of the present workforce in large and medium industry. It should be noted that on these estates most, if not all of the firms will be new ones, so they represent new jobs.

The total sum invested in these estates is 72 million rupees (approx. $14.86 million, or about $ 370 per job), very cheap at the price.[1/] Even if the estimates of jobs created are twice what they really are, it still appears a most economical programme. The Karachi estate alone cost 32.5 million rupees ($ 6.70 million), which for 700 firms gives $9,572 per unit or at 40 employees per unit, $ 238 per employee.

Senegal

The only functioning industrial estate in Senegal is the Domaine industriel de Thies. A description of the estate is given in the Senegal Section of Chapter II below. Briefly, nine firms which fully occupy the estate were recruited from local artisans. Of these, five are proving successful and are expanding their activities yearly. Between 1971 and 1975 employment rose from 75 to 138, while turnover for the estate as a whole from 70.3 million francs ($ 319,545) to 177.7 million francs ($ 807,727) or $ 4,260 per employee in 1971 to $5,853 in 1975.

1/ See Introduction regarding change in rupee/dollar exchange rate.

If only the five more successful firms be taken (the turnover of the others is either nearly static or declining), then the figures are much better, but difficult to compare because some of them did not start operations until later years.

The investment in this estate has been comparatively heavy, 65,225 million francs ($ 296.477) including $ 43,750 foreign component. In addition there has been continuing technical assistance to the firms by SONEPI staff, a UNIDO expert and some French volunteers. The investment, including buildings and, it would appear, machinery and equipment, has worked out at $ 2,140 per job created. (See Table 12 Chapter II). It is to be expected that the cost will be high in the very earliest stages of industrialisation.

Four other estates are planned at an estimated investment of $ 5,012,545 planned at creating 830 jobs. More than half the sum $ 3,076,590 is to be spent on the Dakar Free Zone, of which $ 2,554,545 is to be a loan from the Federal Republic of Germany. This is expected to create 465 jobs at what appears to be a high cost of $ 6,610 per job.

It is difficult at this stage to judge whether or not the Senegal industrial estate programme will contribute effectively to the country's industrialisation. Over and above the 9 firms on the Thies estate, 64 firms have made proposals to join the other estates when they have been set up. In this small country, it may be that this will accelerate industrialisation to a degree which could not be achieved by any other means.

Turkey

It can be seen from Table 4 that there are a substantial number of firms on industrial estates in the small-scale industry sector in Turkey. Details of the programme and how the numbers employed were arrived at are given in Chapter II. The number of small firms and of persons engaged, which also differ from those given in Table 1 have been modified, as explained in Section 1 of this chapter, in an attempt to make the assessment of the role of the industrial estates more realistic.

There are currently 28 industrial estates known to be operational. The 6,134 firms on them represent about seven per cent of the estimated

number of small firms above the handicrafts level; the numbers employed represent about 7.6 per cent of the estimated employment. The policy of the Turkish Government, described in Chapter 4 below, is only to provide places on small-scale industry industrial estates for existing small firms and not to accept new ones. Information from officials and others on the estates visited indicates that most firms at least doubled the numbers they employed within two years, so that the new employment created by these estates would be of the order of 12,000 jobs.

This programme has been under way since the beginning of the sixties, but most of the estates have been operational only since 1970. It may be noted that the estates, as a rule, are fully occupied immediately they are completed.

The industrial estate programme in Turkey is beginning to snowball. 44 industrial estates offering about 14,800 units are under construction, most of them started only since 1970. They may be expected to provide some 60,000 jobs, of which 30,000 will be new ones, by 1977. If it be assumed that the number of jobs in small-scale industry increases by 10 per cent between 1975 and 1977,[1/] then it should reach about 351,400. Jobs on industrial estates by this time will total around 84,000 or 23 per cent of all small industry jobs. However, the 30,000 new jobs on the estates due for termination by 1977 represent a much higher percentage of the new jobs in the small industry sector as a whole, and which could be as high as 90 per cent. This could mean that in the small industry sector in the future, a majority of new employment created could be on industrial estates. In addition to the 44 new estates under construction, 13 are under consideration by the Ministry.

The industrial areas programme in the medium and large industry sector has lagged far behind in the industrial estate programme and is only now beginning to develop. It is discussed briefly in Chapter II.

1/ When practically all the industrial estates under construction will be operational.

CONCLUSION

Although the discussion in this chapter has been based on many estimates and assumptions, it gives some picture of the conditions in the countries studied and, it is to be hoped, some idea of the role which is being played by the industrial estates for both large and small industry in their industrial development. Two countries emerge in which industrial estates do seem to have contributed to a marked degree, Pakistan in the large and medium industry sector and, outstandingly, Turkey in the small industry sector. Ecuador, so far, has produced few results and for Iran it is too early to be able to make a judgement. The modest beginning in Senegal seems to have roved sufficiently successful for the Government to go ahead on a larger scale and it may indeed prove there that industrial estates will be a major factor in the country's industrialisation.

Accepting the idea that the industrial zones in Cuba are the equivalent of industrial estates, they are playing and will play a very important role in industrialisation of the country. Between 60 and 70 per cent of industry will be integrated into these zones. Only the future can show the degree of inter-relationship which can be established among production units located within a zone and the extent to which common facilities are of value.

CHAPTER II

THE NATIONAL INDUSTRIAL ESTATE PROGRAMMES

INTRODUCTION

Table 5 lists some of the key elements in the industrial estate programmes of the six countries studied. Problems of availability, reliability and comparability of data have already been noted. The various "estimated" figures have been compiled on the basis of the best information available and checked, wherever possible, with knowledgeable local officials.

The most striking feature in Table 5 is the large difference between the size of the programme in Turkey and, to some extent, in Pakistan and the programmes in the other countries. The differences in scale make comparisons of little value, so that each programme needs to be examined in the context of its own country. Most of the figures need interpreting, which is done in the sections on the individual programmes which follow.

1. CUBA

Industrial estates as known in countries without centrally planned economies, namely, tracts of land with infrastructures, services and often standardised industrial buildings, aimed at attracting existing or new enterprises, or even estates set up by producers' cooperatives independently of governments have no meaning in Cuba. However, the problem of providing suitable land with infrastructure and services on which industries can be grouped remains.

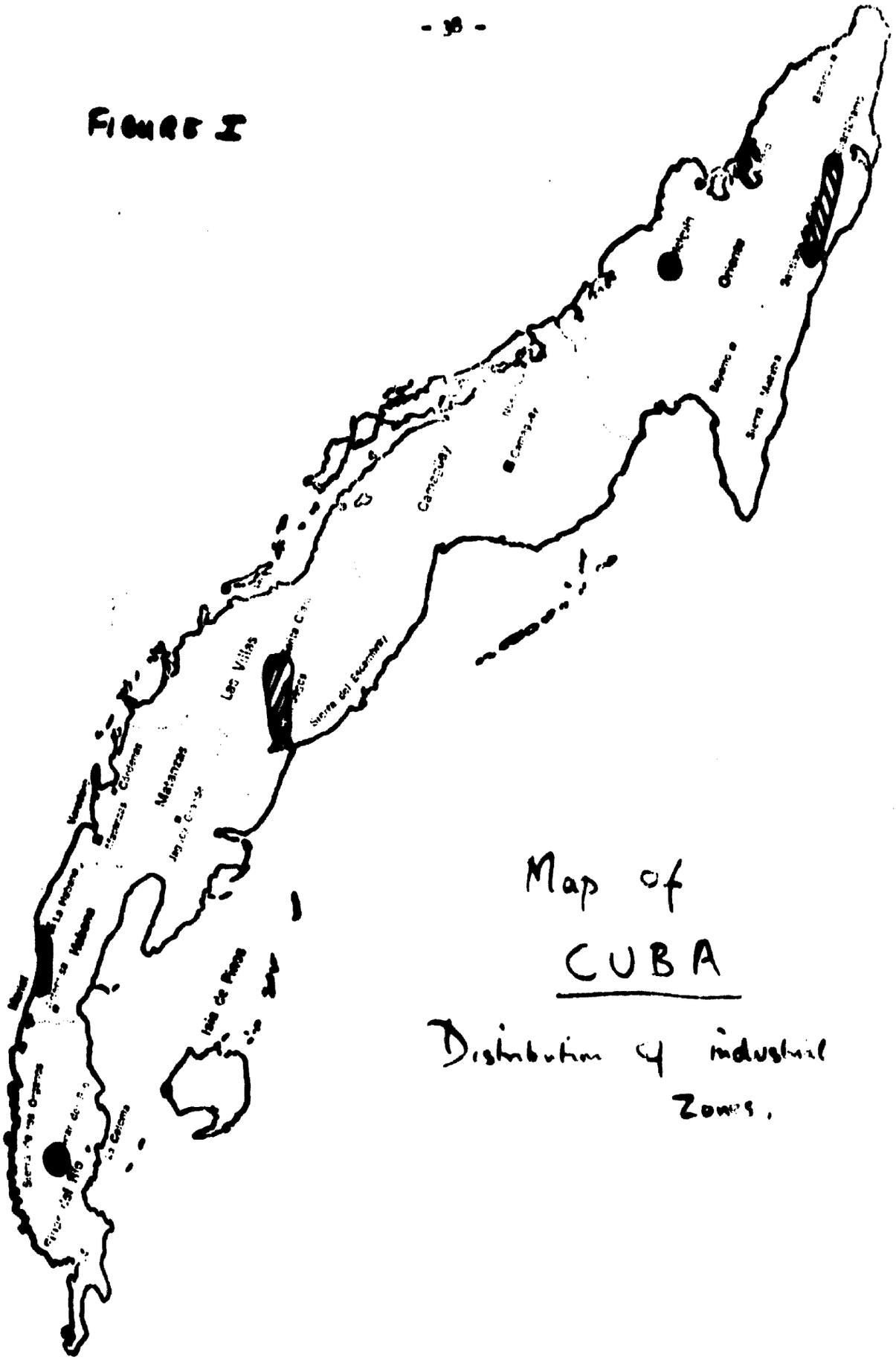
In Cuba there are three kinds of groupings of industrial plants which have some of the attributes of an industrial estate.

TABLE 5
Summary of Data on National Industrial Estate Programmes

	CUBA		ECUADOR		IRAN		PAKISTAN		SENEGAL		TURKEY	
	SSI	LEM	SSI	LEM	SSI	LEM	SSI	LEM	SSI	LEM	SSI	LEM
Industrial Estates - Operational			-	2	-	2[4]	11	7	1	-	28[6]	1
- Under Construction			2	4[3]	1	5	-	-	4	-	44[6]	2
- Approved			1	1	3	-	16	-	-	-	13	1
No. of Production Units - Operational			-	5	-	95	270	N.A[5]	8	-	6,134[6]	N.A
Est. Investment - Cumulative Limits												
National Currency - Millions			-	1.757	-	179.2[8]	25.28	71.96	65.225	-	262.9	N.A
US Dollars - Thousands			-	67.6	-	2,568	5,212[7]	14,824[7]	296	-	18,781	-
Est. Investment - Utilized under Cent.												
National Currency - Millions			NA	39.230	N.A	N.A	45.32	-	1,102.8	-	1,757.4	N.A
US Dollars - Thousands			-	1,565	-	-	4,672[7]	-	5,102	-	128,385	-
Est. Man-Employment - Current			-	200	-	N.A	4,000[9]	-	138	-	12,250	N.A
" Planned - When new construction completed			-	N.A.	-	N.A	N.A.	-	830	-	30,000	N.A

[1] Includes some estates partly operational.
[2] Artisan projects
[3] Includes three private projects in Guayaquil.
[4] Includes Ahwaz, originally an SSI estate.
[5] The Karachi SITE estate has over 700 units in production with 100 per cent occupancy.
[6] Includes six independent estates known.
[7] Rates of exchange before and after 1969 diff. See Introduction to the Report.
[8] Ahwaz estate only.
[9] See text.

FIGURE I



Map of

CUBA

Distribution of industrial Zones.

(1) Industrial Zones - Areas of land set aside in planning urban or rural development for the exclusive use of industry. They will normally have adequate road networks, water and drainage, electric power and other basic services. They will also have some common facilities. Industrial zones may contain groups of plants in different sectors of industry and under separate managements. (See below). The zone has its own management and administrative personnel.

(2) Industrial Complexes - These are groups of production units vertically or horizontally integrated and under a single general manager.[1] They thus correspond closely to the multiple production units on a single site to be found frequently in large private firms in the USA, Europe, Japan and other industrially advanced countries with free-enterprise or mixed economies. The sugar mills are often complexes of this type processing a number of by-products of the cane such as bagasse, paper pulp, hard board, animal feedstuffs, alcohol, fertilizer and wax on one site.

(3) School-related production Complexes - A group of small and medium-sized factories may be grouped around a vocational school.[2] The students live in the institution and are required to do three hours practical work per week, which they may do either in local agriculture or in one of the associated plants. The Lenin Vocational

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1/ The term "general management" in this context corresponds to what would be called a "general works management" in the United Kingdom, since neither marketing nor finance are controlled by the managers of these complexes. Broadly speaking, they are responsible for the production from each unit under the production plan which they receive from their respective ministries, cost control, day to day personnel management, possibly product design and development, and the general administration of the complex including plant, building and site maintenance, security, etc.

2/ The term "vocational school" does not here have the meaning it has in Western Europe. It is, in fact, an elite school which prepares for university studies in all fields. "Vocational" refers to the link which the theoretical studies have with manual labour.

School near Havana is of this type. It has about 4,500 students botwen the ages of 11 and 13, of whom about half provide three-hour shifts in the plants, of which they are the main unskilled labour force This is not a true industrial estate and will not be further discussed here, but is an interesting development.

The arrangement most nearly corresponding to an industrial estate as defined at the beginning of this paper and discussed in the context of the other countries studied is unquestionably the industrial zone. Further discussion in this chapter will centre round this kind of estate.

Basic Government Policies

The aims of the Government in promoting industrial development may be described succinctly as follows:

- Mechanisation of both the harvesting and processing of sugar;
- production of implements, machinery and materials for the agricultural sector generally, such as fertilizer and pesticides;
- further and expanded processing of agricultural raw materials;
- industrial expansion to provide materials for a very large programme of construction of schools, hospitals and housing;
- improved variety of consumer goods;
- goods required for the health and educational programmes such as pharmaceuticals, educational equipment, furniture.

In developing industrial zones the aim of the Government is to contain industrial development within limited areas, except for agro-industries and mining and the industries relying on female labour mentioned above. The primary purpose of the present decentralisation of industry to the provinces is to keep new industry out of Havana. The setting up of industrial zones in agricultural areas is done with the aim of providing work for the labour force which will be progressively liberated by the mechanisation of agriculture, especially of the sugar plantations.

Regions where industry is being or will be located, (see Figure 1), are:

Pinar del Rio,
Mariel - La Habana coastal strip,
Santa Clara - Cienfuegos,
Holguin,
Santiago de Cuba - Guantanamo,
Nicaro - Moa, (nickel and derivatives).

The Present Situation

The master plan for the country is now complete. Recent years have been spent in making master plans for the major urban centres to provide for broad divisions into residential, commercial administrative and industrial zones and planning the basic infrastructures of main roads, railway connections, water, drainage and main power lines. There was little previous experience of this type of development and the period has been one of "learning on the job". Industrial development and planning development have evolved in parallel with the planning of industrial zones often a step behind. Because of this there has been a tendency to be somewhat wasteful of land so as to provide a margin of error to allow for future expansion.

The fact that some industrial zones contain plants in different sectors of industry means that they are under the management of different industrial ministries. Efforts have been made by the planners to ensure that plants belonging to the same ministry were grouped in the same sector of the zone. This has led to a conflict between two planning principles, namely;

- subdivision by industrial sectors such as textiles, medium industry, metal industries, etc.;
- economy in infrastructure investment.

The dispersal of units under the first principle has necessarily led to some waste in the allocation of the land and over-long roads and power lines. Until recently land was at a uniform price of four pesos per square metre. There is now developing a concept of opportunity-cost and, in general, a greater "land consciousness". Attempts are being made to limit the size of plots and to set norms for the percentage of land to be left round different types of factory and relate these to possibilities of future expansion. An area of 10 per cent of the total area of the zone must be left as a "green area", including roads. Buildings must be not less than 100 metres from any main road.

In Cuba the relocation of industry is not a major factor. At Holguin, visited by the consultants, (see below), three plants operating in areas designated as residential and commercial were scheduled for relocation to the industrial zone. They were respectively a coffee processing plant, a sausage factory, and a chemical plant and the main reason for relocating them was said to be the odours emanating from them.

In the planning of industrial zones, more care seems to be taken in Cuba than in most other countries to ensure the proximity of workers' housing, transport facilities and, in general, the convenience and well-being of those working in the zones.

The provision of common services was discussed at some length with the authorities concerned. The question arises not only in the industrial zones but in the big agro-industrial complexes. Fully equipped repair and maintenance workshops and tool making establishments are available. Extensive social services are also provided. They usually include an infirmary, children's day nursery, small shopping complex, vocational training centre, canteen, workers' club and in some of the large industrial zones linked to residential districts, places of entertainment such as cinemas. Some of the facilities such as infirmaries or poly-clinics are imposed by law and related to the number of workers in the zone.

The Oriente and Holguin Region

The consultants visited the Town of Holguin situated in the Oriente province about 800 kilometres east of Havana. It has a population of about 130,000 in a rich agricultural district and in the vicinity of nickel mines.

The industrial zone of Holguin has an area of 400 hectares. It is expected to be fully developed and occupied in 1981. 200 hectares are already occupied by various industries in operation or at various stages of construction. An estimated 10,000 workers are employed in industry in the town and on the site and a further 10,000 are expected to be employed when the zone is fully developed. An important proportion of the additional workers is expected to be furnished by the increased

mechanisation of sugar cane harvesting. A large factory complex for producing harvestors is in an advanced stage of construction in the Holguin industrial zone.

The zone contains a number of distinct complexes and individual plants. These are listed in Table 17, Chapter VI. They come under various ministries.

Although the industrial zone at Holguin has been chosen for environmental reasons, there are still houses and apartment buildings within the zone. It is expected that these will be demolished as housing becomes available elsewhere, but some light industry may be left in the residential areas to encourage housewives to work. There is at present a clothing factory near the town centre.

Apart from the industrial development at Holguin itself, industries are also being planned for the smaller towns in the region, where several thousand additional workers are expected to become available as agricultural mechanisation proceeds.

Conclusion

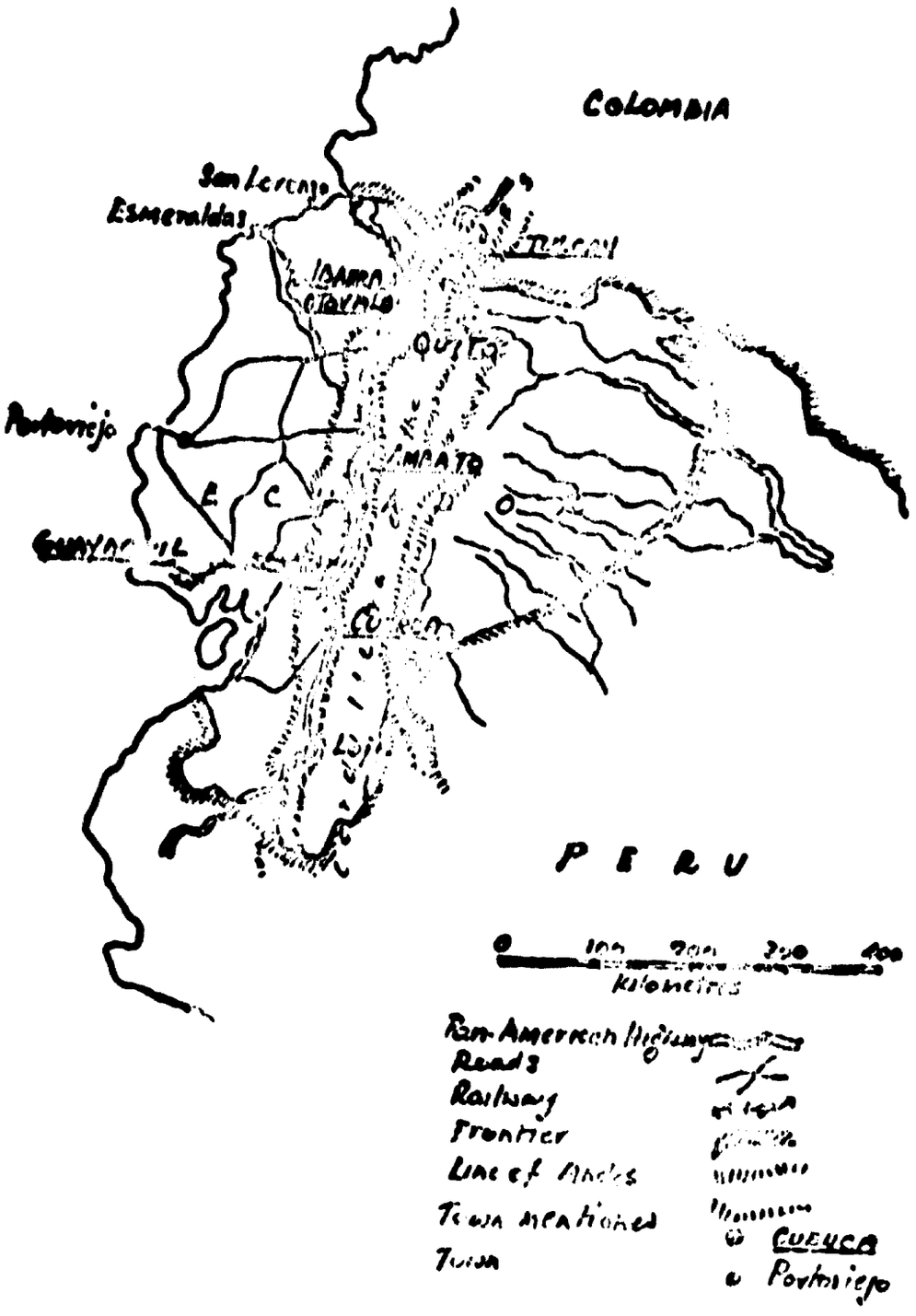
The mission to Cuba was completed only when the body of this report was already finished and the details included here are necessarily summary. In brief, the present stage of development of industrial zones is that the large-scale planning has been completed and attention is being focussed on compact planning in order to ensure the optimum use of the resources available for the creation of the zones.

2. ECUADOR

The first concept of an industrial estate programme was embodied in the National Plan for Social and Economic Development of 1963. A United Nations mission provided advice on a programme for establishing estates in eight cities. Development corporations were set up in Ambato, Cuenca, Ibarra and Tulcan and projects started during 1963-64. The principal shareholder and agent of the Government in these corporations is CENDES.

FIGURE 2

Map of Ecuador



Basic Government Policies

no major objective in locating the estates in these provincial towns, all in the Cordillera of the Andes (see Figure 2), was to upgrade existing artisan workshops and transform them into small industrial enterprises by gathering them into cooperatives and providing standard factory space and centralised services. A second objective was to promote industrial development in less developed areas and discourage the establishment of new industries in the major cities, (Quito and Guayaquil).

The failure to establish cooperatives among the artisans and to attract firms to the estates in these towns led to a new approach in which the estates were thrown open to firms of all sizes, which were offered sites on which they could erect their own buildings.

Around 1968 a further re-orientation of policy turned attention away from the less developed areas and towards the use of organised industrial areas to combat growing congestion in the main cities, raising the standard of living and dealing with critical problems of urban employment. The original four projects were more or less left in abeyance.

Present Status of the original Estates

None of these policies has so far borne fruit. The estates at Tulcan and Ibarra are the only ones occupied, each consisting of three standard buildings with no other amenities. Those in Tulcan are rented by a single company with two separate businesses. The CENDES is negotiating the sale of both "estates". At Ambato, two areas of land were acquired. This absorbed all the funds available and no further development has taken place.

Only at Cuenca, by far the largest of the four towns, (133,000 inhabitants), although the most isolated from the main centres of population, has action continued, albeit spasmodically, over a period of eleven years. Of the 67 hectares originally acquired, the infrastructure of 17 has recently been completed, but there are as yet no other facilities. Five medium-sized factories have been allowed to establish themselves

on parts of the land which have not yet been improved. The estate company is showing itself uninterested in accepting local small firms and is trying to attract foreign firms setting up in Ecuador in order to benefit from the allocation of a wide range of products to Ecuador under recent Andean Common Market agreements. So far there have been some enquiries but no firm offers.

The development costs involved to date according to official information and the estimated employment created are:

TABLE 6

Ecuador - Investments in Industrial Estates

Town	Cost		Employment	Cost per Post
	Sucres	U.S.$		U.S.$
Ibarra 1/	814,000	31,308	60	522
Tulcan 1/	943,000	36,269	140	259
Ambato 2/	1,230,000	47,307	-	-
Cuenca 3/	38,000,000	1,461,538	-	-

Apart from these estates, the only officially sponsored action is at present an attempt to set up an estate for small industries at Guayaquil. So far little has been achieved in five years because, although the industrialists want the estate, they are not prepared to participate in the preliminary costs.

1/ Land, infrastructure and buildings

2/ Land only

3/ Land and infrastructure for 17 hectares. The official CENDES figure, presumably the CENDES contribution, is 5 million sucres: the figure of 38 million was given by the estate company manager.

Estates for medium and large Industry

A municipal law in Guayaquil forbidding the establishment of industry, including warehousing, within five kilometres of the city boundary, coupled with the greatly increased trade set in motion by the greater oil revenues since 1973 and the Andean Group allocations, has aroused interest among industrialists and merchants in finding sites on prepared land outside the city. This has been further intensified by the increasingly congested conditions within the city itself.

Three private initiatives have recently established estates at distances of between 8 and 16 kilometres from the city. Of these, "Los Sauces" is intended for large industry and commerce, the minimum plot size being 10,000m^2. There are 40-45 plots. Development has cost 25 million sucres (just under $1 million), the money being borrowed from abroad. One firm has already taken 140,000 m^2 and others are interested. The other estates are in an area where water pressure is very low. 100 plots are said to have been sold, but many buyers are believed to be speculators.

Independent Artisan Estates

Two artisan estates are in process of being set up by independent action. The first is a cooperative of woodworkers in Quito, which is establishing an industrial complex to include central facilities and dwelling houses with credit to be provided by the Banco Nacional de Fomento. The second is being established by a cooperative of the Peguiche Indians, a gifted and dynamic people whose centre is at Otovalo, in the north. They have reconditioned a disused spinning mill and are converting it to provide centralised production facilities for spinning and dyeing, as well as an exhibition and cultural centre to attract tourists. Around this artisan workshops will be established. It is financed from their own funds.

Conclusion

In spite of a good deal of official effort and substantial aid from the United Nations, US-AID and the Peace Corps, mainly focussed on Cuenca, it is clear that the officially sponsored industrial estate programme

has so far produced negligeable results. However, there are signs that some successful estates are being established privately and there is a growing interest on the part of industrialists, although little willingness as yet to risk much money. The Government interest has also been re-awakened and a law on industrial estate promotion was recently passed.1/

3. IRAN

Basic Government Policies

Industry in Iran has grown up in a haphazard manner. The Government is now determined that more towns shall be designated for industrial development and that all new plants shall be established in industrial parks. These will provide land with infrastructural amenities and centralised services. Industrialists will build their own factories. The objectives are:

- to ensure the protection of the environment;
- to prevent over-crowding in the towns;
- to prevent over-development as regards limited water and energy supplies;
- to ensure regionally balanced growth.

The programme is specifically directed to large and medium sized enterprises. Such effort as is being made to promote small scale industry is in the hands of the OSSI. Most of this has gone into the Ahwaz Industrial Estate, (AIE), in south-west Iran. (See Figure 3). The OSSI is now planning four other estates for small industries.

Ahwaz Industrial Estate

The estate was set up after feasibility studies carried out by UN missions in 1962 and 1963. It has since had a great deal of technical assistance. The principal data relating to the estate are contained in Table 7.

1/ Ley de Fomento de Parques Industriales, Decreto No. 924-1.

FIGURE 3

Map of Iran

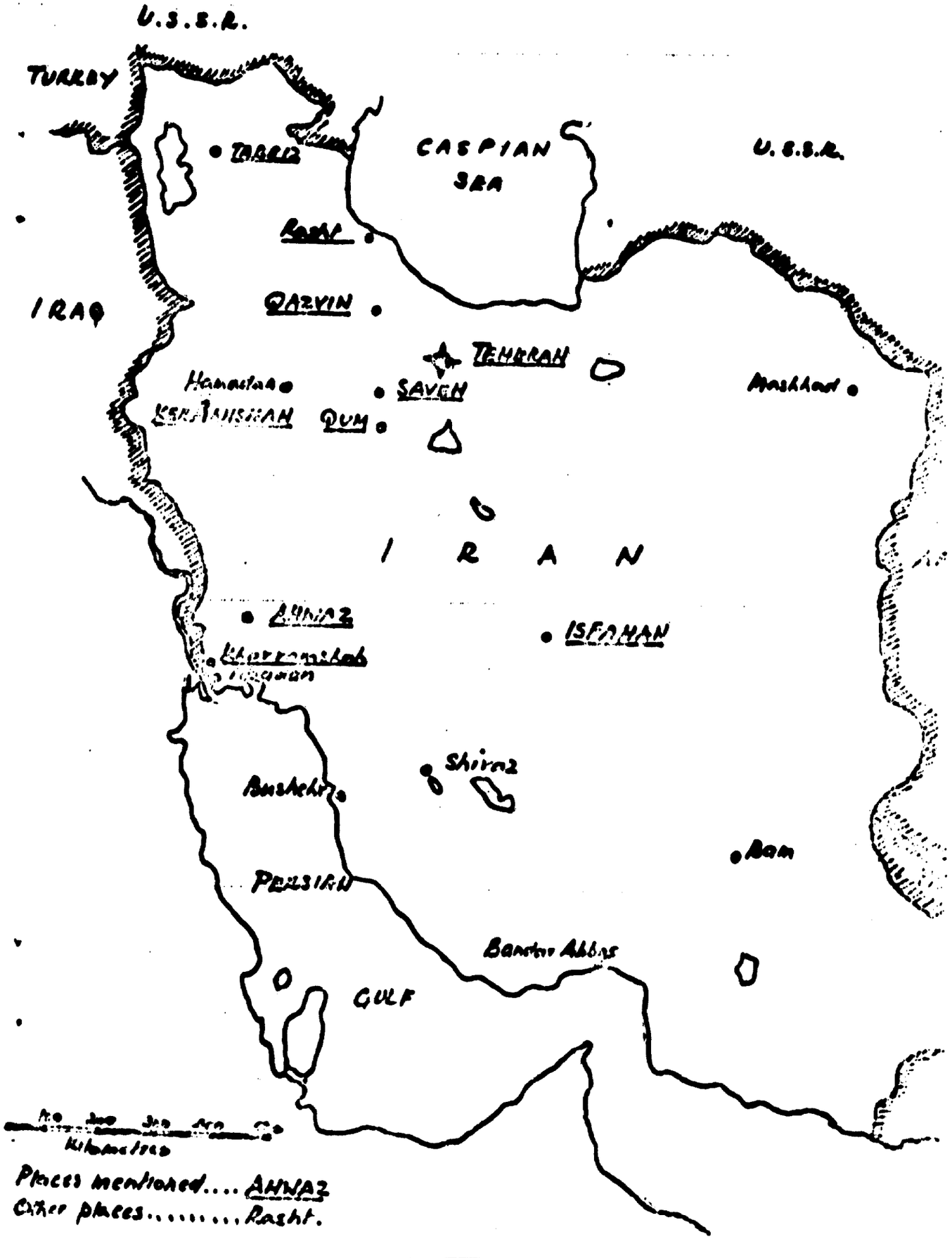


TABLE 7

Data on the Ahwaz Industrial Estate

	Rials	US $		
Total Planned Expenditure		4,430,000	Planned Employment	3,000
Total Actual Expenditure	179,180,000	2,655,000	Actual Employment (Official figure (U.N. Survey 207- 216)	500
Land	2,000,000			
Infrastructure	42,620,000			
Factory Buildings	90,340,000			
Central Workshops	14,440,000			
Guest House	5,500,000			
Admin.Bldgs	8,380,000			
Miscellaneous	15,900,000			
Part Cost of UN Technical Aid		1,000,000		
Total Actual Expenditure		3,655,000	Investment per Post $ 7,310 (at 500 workers)	

Number of Units	24	Units Occupied	22	Number of Firms 15
Total Factory Space		13,272 m^2.		
Estate Management Personnel		88		
Running Expenses 1974-75		26,930,000 Rials		
less - Revenue from rents, guest house central workshops		5,830,000 "		
Net Deficit (Subsidy) 1974-75		21,110,000 "		($ 312,740)

Thus, Government Subsidy per m^2 factory space per annum = 1,590 Rials ($ 23)

The cost per job created is high, since it represents only indigenous resources and takes no account of the cost of imported machinery. Further, between 1971-72 and 1973-74, capital invested by firms on the AIE in machinery rose by 181 per cent; employment rose by 48 per cent, while wages and salaries fell by nine per cent.

The Ahwaz Industrial Estate was originally intended as a demonstration estate for small industry, but it proved impossible to lease all the units to small firms, and it was opened to large industry and non-manufacturing enterprises, including warehouses. It has extensive central amenities, including workshops supplied with equipment by the United Nations. They have a poor reputation for quality and delivery. The estate is not considered a success, even by senior officials of OSSI, but it is operating under constraints.

New Small Industry Estate Programme

The Fifth Development Plan calls for the construction of some 30 industrial estates for small firms in the next five to ten years. Planning is currently proceeding on four, three of which are being located on regional policy grounds. The fourth, at Tabriz, is designed to take advantage of the heavier engineering industries concentrated there and to help small firms obtain sub-contracts. It will be developed, taking into account Ahwaz experience. The area is 85 hectares and it is expected to take 40 - 50 firms. It is, nevertheless, recognised that it will only have marginal significance as regards output and employment. The planned investment is not known.

Industrial Parks

Current plans envisage the creation of at least 15 industrial parks for large and medium industry in different parts of the country. Six are already being developed.[1/] They will have a common pattern and be managed by autonomous joint stock companies drawing their funds from various Government agencies. They will be controlled by the Ministry of Industry and Mines. Initially, each park is to give employment to 45,000 persons and support a population of 150,000. The aim is to have 200 units per park in light and medium industries. The present situation is:

1/ The location of the sixth park is not yet known.

TABLE 8

Iran - Industrial Parks

Town	Park	Advantages	Range of Products	Stage of Developmt.	No. of Firms
Qazvin	Alboroz I.P	Limit of new industry(120km) from Teheran; ample water and power.	Metal, food, consumer durables, bldg materials, chemicals.	Operational	140 (80 P) (40 C) (20 L)
Savch	Kuroush I.P	N.A.	Materials handling, trailers, machine tools and parts.		N.A.
Isfahan	AryamehrI.P	Aryamehr Steel Works	Ancillary to steel works and users.	Advanced Planning	N.A.
Qum	-	-	-	Early Planning	-
Kermanshah	-	-	-	Early Planning	-

P = in Production, C = under Construction, L = have bought Leases.

Qazvin already has a small administrative block, shops bank, petrol station, schools and sports ground. The other parks will have similar amenities. Qazvin is being further developed. Land is being cleared for 80 new factories, infrastructure and service facilities are being extended and houses and flats built for sale to the workers.

Conclusion

The Iranian Government is now embarking on an ambitious programme of industrialisation to ensure a firm industrial base when oil revenues diminish. It is using industrial estates and parks as instruments of this programme and for the maximum dispersal of industry and employment opportunities throughout the country. New estates are planned to use established centres of heavy industry to encourage complementary production and sub-contracting. There is as yet no experience to indicate how this

will work. The special attraction of Qazvin, namely, as the nearest town to Teheran outside the "forbidden industrial zone" round the capital, is not shared by the others. Its apparent success is not necessarily a valid indicator.

4. PAKISTAN

(Note: Rate of exchange before 1969 - Rupees 4.8 = $1.
after 1969 - Rupees 9.7 = $1.)

Basic Government Policies.

In the past Pakistan has concentrated her industrial development efforts on large and medium enterprises. A consistent policy for small scale and rural industry has been lacking. Apart from the development of some industrial estates in the early sixties, this sector seems to have been rather neglected.

Large and Medium Scale Industry Estates

The Sind Industrial Trading Estate Company Limited set up an estate for large and medium industry in Karachi in 1948, to be developed over a period of 20 years. By 1969 it had virtually 100 per cent occupany. The company established three other estates in Sind in 1952-53 and a further estate established at Sukkur on the Indus in 1963 passed into control of the company in 1975. The SITE is a public limited company but had no initial capital. It is a Government-sponsored organisation expected to operate on a no-profit-no-loss basis. The success of the Karachi Estate led the Government to set up two further estates in 1965, one at Multan in the Punjab and one at Peshawar in the North West Frontier Province. (NWFP). Brief details of these estates, by province, are in Table 9 below.

TABLE 9

Pakistan - Large and Medium Industry Estates

Province	No. of Estates	Total Acreage	Average Occupancy	Cost Rupees	Initiated
PUNJAB	1	1,003	N.A.	3,400,000	1965
SIND	4	3,215	25 Est'd	50,000,000	1948, 1952-53
SUKKUR	1	540	N.A.	7,340,000	1965
NWFP	1	569	N.A.	6,220,000	1965
		5,357		71,960,000	

(U.S. $ 15,000,000)

No information is available on the number of jobs created, but it has been suggested in Chapter I. that with 700 units the Karachi Estate may employ round about 28,000.

On this basis, the programme seems to have been successful.

The original objectives in setting up a programme of industrial estates outside Karachi included:

- industrialisation in the early years tended to concentrate in Karachi, which was the largest city, federal capital and only major port in West Pakistan: this was deemed undesirable from economic, social and defence viewpoints.
- by pooling resources of technical know-how, workshop facilities, etc. manufacturers in less developed areas would be in less unfavourable situations;
- the easier zoning of industry in rapidly developing cities.

The Small Industry Estates

In 1961 the then West Pakistan Industrial Development Corporation decided to set up eight small industry estates throughout the country, (see Figure 1), in addition to an estate in Lahore, for a total cost of 25.28 million rupees. A further estate was later added at Lahore and a very small artisan estate at Karachi. Some general data, by provinces, appear in Table 10.

If the large and medium industrial estates programme in Pakistan seems to have been successful in promoting industrialisation in the fifties and

Figure 4
Location of, existing and planned, industrial estates in Pakistan

△ existing small-industries estate

▭ existing large-industries estate

✕ planned small-industries estate

TABLE 10

Small Industry Estates operational in Pakistan - Nov. 1975

Province & Population	No. of Estates	Total Area	No. of Plots	Range of Plot Sizes	Average Occupancy	Units in Operation	Estimated Employment	Units under Const.	Approved Development Costs	Approval Dates [6]
		Hectares		m^2	%				Rupees	
PUNJAB (37.4 millions)	5	135	1,387	278 to	63 [2]	218	5,790	177	14,730,000	1961-64
+ Lahore No.2	1		276	1,672	27	4	89	-	N.A.	About 1970
SIND (12.0 millions)	2	69	689	278 to	26.5 [3]	17	319	6	5,530,000	1964
+ Karachi No.1 [1]	1		30 [4]	1,672	100	12	N.A	-	N.A	N.A.
N.W.F.P. (8.4 millions)	1	22	295	278 to 929	N.A	13	508	10	2,400,000	1962
BALUCHISTAN (2.4 millions)	1	17.4	104	465 to 1,393	N.A	N.A	N.A	NA	2,200,000	1961
TOTALS	11	244.4	2521		-	270 [5]	(6,800)	-	25,280,000 ($5,266,670)	-

[1] All artisan workshops.

[2] This figure is boosted by 100% occupancy at Gujranwala & high occupancy at Sialkot there is 100% occupancy of artisan workshops on estates which have them. This distorts the percentage further.

[3] The percentage of industrial plots occupied is very low.

[4] Inclusive of 295 artisan shops

[5] Excludes the 295 artisan shops to give truer picture.

[6] Average construction time - 3 years.

[7] Official estimate - the Consultant's estimate is 8,000. See text.

[8] Excluding Lahore No 2 and Karachi No1.

sixties, the same cannot really be said of the small industry programme, although it must be acknowledged that the total sum involved, (Rs. 25,280,000 = U.S. $ 2,606,185), covering land, infrastructure and in certain cases guest houses, workers' canteens and small workshops for artisans, is not excessive for the size of the programme.

Table 10 shows that the occupancy of most of the estates after twelve years and more is still low and would appear even lower were it not that the 295 artisan workshops incorporated in six of the estates and the artisan estate in Karachi are all occupied. In the Punjab, only the Gujranwala estate is fully occupied, with the Sialkot estate somewhat less. Both these estates had financial assistance from the International Development Agency and the Sialkot estate is almost wholly employed on manufacturing for export. The only other estate with a good occupancy rate is Gujrat, which specialises in electric fans. A study of the rate of occupancy of most of the estates show that occupants are very slow in coming forward. Except in Gujranwala and to a lesser extent, Sialkot, which had major entries in the mid-sixties, the other Punjab estates built up their rates of entry only in the seventies, in the case of Gujrat, with a sudden surge in 1974-75.

Nor can it be said that the small industry estates have stimulated much new industry. The Gujranwala and Sialkot entries were mainly transfers seeking expansion. Industries on the estates tend to reflect the traditional industries in the area. For example, Sialkot estate produces primarily the surgical instruments and sports goods for which the city is famous, throughout the world. The total number of electric fan manufacturers in the Gujrat region is 155, with an employment figure of 10,000 persons. The estate already has 13 fan manufacturers, six are constructing premises, 12 more have been sanctioned and a further 20 have applied for plots.

The size of units on the estates varies considerably, from two employees upwards. The Sialkot estate has nine units with more than 100 employees and three with more than two hundred, one employing nearly 500 persons. Gujranwala is the only other estate having firms of more than 100 employees. The average for all estates is 25, but the figures have to be treated with great reserve.

As regards employment created, the figures are even more uncertain. The official figures for units in production and sanctioned for the Punjab, give a figure of around 11,000 jobs. Those for units in production for all provinces amount to only 6,000, which may include some firms which have gone out of business. Non-permanent workers may not have been declared. The consultant felt that a figure of 8,000 would be reasonable. Set against an estimated two million employed in small industries and handicrafts, this is a very small contribution.

The financial situation of firms on the industrial estates does not seem to be very happy. The Industrial Development Bank of Pakistan (IDBP) is responsible for foreign exchange loans made to small industry. The loan portfolio covers almost 400 projects, (mid-1975), of which 291 were on the Gujiranwala and Sialkot estates. It involves 76 million rupees. For 24 million rupees repayment of the principal is not yet due, but the remaining 52 million, (U.S. $ 5,360,824) are in arrears. The total amount of arrears on the industrial estates is not known, but it is considerable. Reasons suggested by the IDBP include:

- overrun on fixed investment and consequent shortage of working capital;
- low utilisation of capacity, especially for projects demanding imported raw materials;
- poor ability to meet foreign competition.

A good deal of this may be due to inadequate technical and economic appraisals, wrong selection by the corporations of groups for various industrial ventures, and inadequate follow-up.

Future Programme

TABLE 11

Pakistan - Approved new small scale Industry Estates

Province	No. of Estates	Total Areas (Hectares)	Project Cost (Rupees)
PUNJAB	3	81	30,000,000
SIND	3(mini est.)	6	790,000
	5 (consd.)	N.A.	N.A.
NFWP	5 land acquired	71	9,700,000
	2 planned	31	4,830,000
	2 consd.	N.A.	N.A.
BALUCHISTAN	1	N.A.	N.A.
TOTALS	21	189	45,320,000 (U.S. $. 4,672,000)

Since 1972 the industrial estate programmes have been in the hands of the provincial Governments, which set up development boards or corporations to run them. The establishment of new industrial estates is following different principles in different provinces, but it appears that hardly any demand for raw material source surveys have been carried out in either the Punjab or NWFP. Sind is trying a new approach with the establishment of mini-estates and will carry this out in close cooperation with the rural development programme. It has the advantage of dispersing industries without involving heavy expenditure on the establishment of fully-fledged industrial estates.

Conclusion

Pakistan has a considerable tradition of handicrafts and artisan industries. Their failure to make use of the industrial estates must be because, so far, they have not seen the advantage of laying out money to construct new buildings, since their present conditions appear adequate.

The factors involved are discussed in Chapter V.

5. SENEGAL

Basic Government Policies

Up to now there do not appear to have been any clear-cut policies on industrial estates. The official organisation for industrial development is the SONEPI. The first and only normally functioning industrial estate is at Thies. It was initiated in 1967. It has proved moderately successful, but it is too small to be viable. Additional finance has been requested to develop a second stage, but Government policy is now orientated to the creation of new estates in different regions in order to spread industrialisation and it seems as if the Thies estate may not obtain the funds it needs.

Present Situation

Table 12 shows the present situation regarding operational and projected industrial estates in Senegal. The Zinguinchor estate, in the south, will start operation when a bridge over the river is constructed. The estates, other than Thies, are still in the planning stage. There is, however, one feature which is immediately striking - namely, the investment per job created, which seems to be planned at an unduly high level in all the estates under consideration, given the circumstances of the country.

Domaine industriel de Thies

In 1967 the Government gave to the SONEPI land and buildings of a former French military camp. Established local artisans were recruited, it being necessary to convince them of the possible advantages of moving. The estate, as will be the case with future estates, is managed by a limited liability company in which the Government holds a 46 per cent share and the Chamber of Commerce of Thies 15 per cent.

The company's sole income is from rents at 30 francs per m^2 per month, as compared with 150 francs in the town. The operating cost of the estate is paid by SONEPI. Even so, certain tenants are currently in arrears with their rents to the tune of 2 million francs.

FIGURE 5

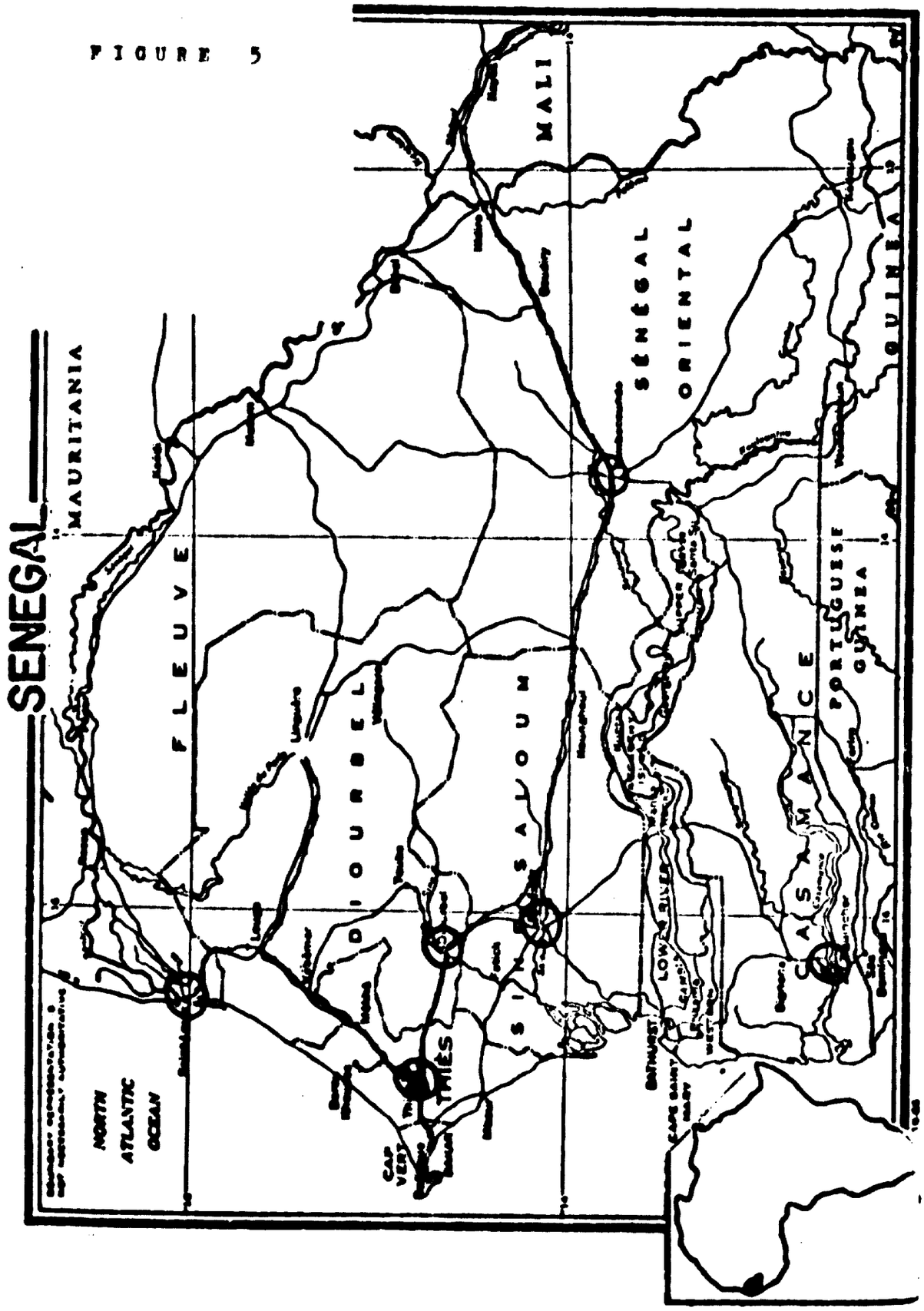

SENEGAL
MAURITANIA
MALI
GUINEA
PORTUGUESE GUINEA
FLEUVE
SÉNÉGAL ORIENTAL
DIOURBEL
SALOUM
CASAMANCE
THIÈS
NORTH ATLANTIC OCEAN
CAP VERT
LOWER RIVER
BATHURST
CAPE SAINT MARY

TABLE 12.

Industrial Estates in Senegal

Estate	Status	Area actual/ hab.	No. of Firms actual/ projected	No. of Artisans from whom	No. of	Investment Actual (A) Proposed (P)		International component	Investment per Job created.	
		Hectares				Francs (Millions)	$ (Thousands)	$ (Thousands)	Francs (Millions)	$ (Thousands)
Thies	Oper	3.0	9 (A)	N.A	138(A)	65.225(A)	296.48	43.75	0.465	2.14
Ziguinchor	Susp.	N.A	3 (P)	N.A	20(P)	15.91(P)	72.32	-	0.795	3.61
Kaolack	Plan.	2.3	20 (P)	500 [2]	220(P)	221.0 (P)	1,004.55	Not yet known	1.000	4.55
Saint Louis	Plan	1.8	10 (P)	343 [2]	125(P)	189.0 (P)	859.09	Not yet known	1.512	6.87
Dakar (Free Zone)	Plan	600 [1]	31 (P)	-	465(P)	676.85(P)	3,076.60	2,554.55 [3]	1.455	6.61
TOTALS			73		968	1168.0	5,309.09	-	-	-

[1] 200 hectares purchased.

[2] Number of artisans in the towns concerned.

[3] German Federal Republic.

Tenants receive various services including:

- aid in bookkeeping;
- aid in relations with authorities and in obtaining credits;
- working methods and productivity improvement;
- market surveys, sales promotion and public tenders;
- sub-contracting.

This assistance is provided by three SONEPI technical staff who devote two days a week to it, one UNIDO expert and three young French "volontaires du progrès".

The companies are all short of working capital. Most of their orders are from public authorities, and it is often necessary to split deliveries in order to pay for raw materials to complete the orders.

Five of the firms have proved able to benefit from the aid and tuition in management and technology which they have received and are making satisfactory profits, although all of them are working very much below their capacities. Since 1971, numbers employed have risen from 75 to 138.

The remaining four firms are shaky and two expect reduced turnovers in 1975. Their turnovers have remained at much the same level across five years.

The Thies estate was an experiment and it has proved that artisans can be developed into industrialists with proper conditions and technical assistance. On the other hand, the amount of "nursing" provided to the nine firms at Thies would prove prohibitively expensive in terms of specialised staff if it became a question of assisting an estate of, say, 50 firms. But perhaps such investment is inevitable in the earliest stages of industrialisation.

The New Estates

First priority is being given to the estate at Kaolak. Land has been selected. Brasilian financial aid is being sought.

The free zone at Dakar is already under construction. 200 hectares have been acquired and infrastructure is being laid down in 60 hectares. West German financial aid is sought, but nothing is known about the means by which the estate will be occupied. It is believed that new companies only will be located there.

The least advanced of these estates is at Saint Louis, on the Senegal River. In depth studies do not seem to have been made; the Government intends to approach the German Government for help, in which case, no doubt, studies will then be carried out.

Conclusion

The Sénegal experience is too limited to allow any conclusions to be drawn on the value of industrial estates at this stage. It is said that medium industries are not using facilities offered by industrial zones because municipalities are offering better terms. On the other hand, there appears to be no case of artisans making the transition to becoming small industries outside an industrial estate, that is, at Thies.

6. TURKEY

The Turkish industrial estates programme differs from those in any of the other countries studied in at least one important aspect, namely, that the foundation of estates is not initiated by any Government agency but by small industrialists and artisans themselves. It is essentially a grass roots programme; the first estates were started in the mid-fifties, several years before the Government set on foot its own programme.

Basic Government Policies

Formal Government action to promote industrial estates began under the First Five Year Development Plan, (1963-67). The principal objectives included:

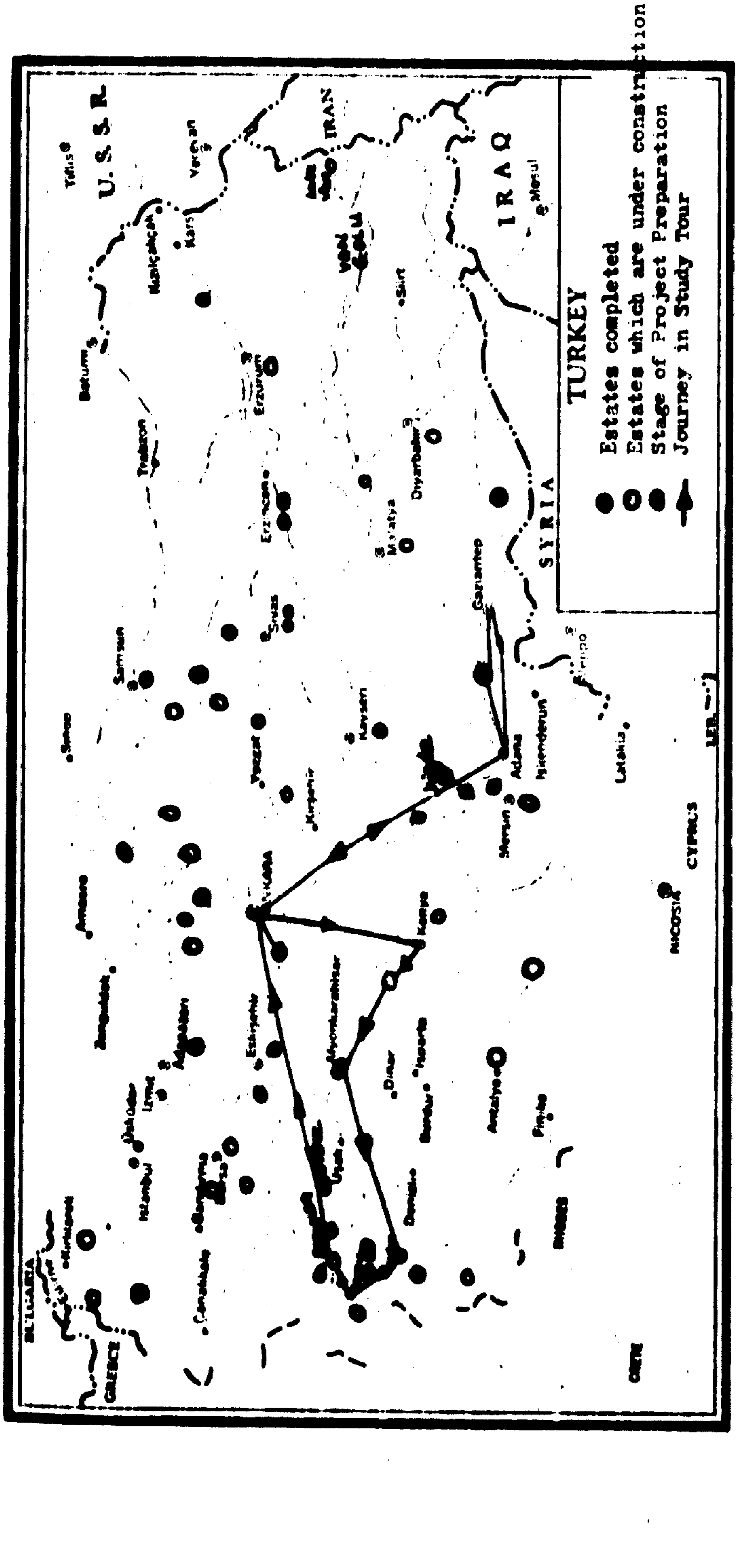

TURKEY
Estates completed
Estates which are under construction
Stage of Project Preparation
Journey in Study Tour
U.S.S.R.
IRAN
IRAQ
SYRIA
GREECE
CYPRUS
ANKARA
Batum
Trabzon
Erzurum
Kars
Samsun
Sivas
Erzincan
Malatya
Diyarbakir
Gaziantep
Kayseri
Adana
Mersin
Konya
Eskisehir
Istanbul
Antalya
Nicosia
Mosul

TABLE 13

Status of Turkish Industrial Estates Programme – Nov 1975
(small industries only)

Status of Estate	No of Estates	No of Units	Estimated Total Investment[3] TL (millions)	Estimated Total Investment[3] $ (millions)	Estimated investment per Unit TL	Estimated new Employment[4]	Estimated investment per job TL	Estimated investment per job $
Operational	23[1]	6,134[1]	262.931	18.781	42,864	12,250	21,463	1,430
Under Construction	44[2]	14,834[2]	1,797.465	128.390	121,172	30,000	59,882	3,970
Under Consideration	13	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.

[1] To the official figures as of Nov. 1975 has been added one independent estate of units set up at Kenya and now operational.

[2] To the official figures five independent estates under construction at Kenya totalling units have been added.

[3] Building costs from the official lists plus 15 per cent for land and infrastructure. The figures include estimated costs for the estates at Kenya mentioned above.

[4] Since all firms on the estates were in business before entry, these figures are for new jobs created as a result of moving. They are based on an average of five insured workers per firm before entry and an average doubling of the workforce after two years on the estate. Insured workers do not include the boys who form a substantial proportion of the workforce in most small firms.

- promoting better and safer working conditions for small industry;
- encouraging cooperation among small firms;
- developing an instrument of decentralisation of the industrial base to produce more balanced development;
- promoting sub-contracting by large firms to small firms;
- enabling extension services to be more effectively deployed and used;
- relieving the fast increasing congestion and dislocation caused by the presence of thousands of small workshops in the cities.

Government policies are discussed comparatively and in greater depth in Chapter IV. Here only two points of Turkish policy may be mentioned as being of special significance. First, only existing small industry or artisan firms are accepted on the estates, the argument being that there is quite enough entrepreneurial talent to be encouraged and developed without seeking out more. Second, before the Ministry of Industry and Technology, whose Department of Small Industry and Handicrafts is responsible for the programme, will even discuss supporting an industrial estate, an executing agency must be formed. This is either a building cooperative composed of industrialists wishing to found the estate or, less often, a municipality. The Department will not deal with individual firms, only with appropriate organisations. In this way, a large number of firms can be dealt with economically with a small professional staff. There are other important advantages in creating such organisations.

Figure 6 shows the location of officially sponsored estates, operational under construction and planned, throughout the country. It will be noted that although the industrial estate programme aims to be an instrument for the development of backward regions, which are in the east, most of the operational estates are in the western half of the country. This is because it was already more industrialised and the entrepreneurs more sophisticated. Their example is spreading the idea of estates towards the east, where a large number are under construction. Even where the industrial estates movement has been more or less spontaneous, it took some courageous people to set up the first ones. Artisans and small

industrialists who were not yet intolerably hampered by conditions in their city workshops feared, as everywhere, loss of contact with customers. Once the growth of firms who had moved out was seen, the movement began to snowball. In this, municipalities were very active in assisting them, by ensuring that city premises vacated by firms moving to estates were not taken over by new entrepreneurs.

The procedure laid down for obtaining Government credits is described in Chapter III. The Government does not invest one lira in the estates, indeed, it makes a small profit through the interest which is used to finance more estates. Very few cases were reported of firms on estates going out of business - less than one per cent in the case of the estates visited. It is interesting to note that often the cooperatives have not taken up the full loans to which they were entitled and at Konya, in Central Anatolia, the consultant visiting an estate learned of six new estates involving 2,367 units which had established themselves with their own financing and of whose existence the Ministry was not aware.

Some Notes on Current and Planned Estates

Table 13 summarises the state of the Turkish programme as of November 1975. A study of the rate of launching new estates over the past twelve years shows some fluctuations but a steadily rising three year average. It would seem as if there are now sufficient examples of success after joining an estate to convince even the most sceptical businessmen. In all the estates in operation visited by the consultant, the average firm had doubled its turnover within two years of joining. Many firms seen had done much better.

It is exceptional to find any vacant premises. In some cases members of cooperatives are unable to move in for financial reasons at the earliest completion of buildings, in which case completion may be staggered across two or three years, 200 buildings, say, being terminated each year. Members continue to pay their dues for infrastructure and common services.

The time taken to bring an estate into operation from the date of first forming the cooperative or other executing agency varies considerably from two to eleven years. So do costs of building as given in the official lists. Table 13 shows that the average for estates operational in 1975, per factory unit, was nearly TL 43,000, but the range varies from about TL 8,000 to TL 73,000. On the estates under construction the costs are much higher, due to a recent inflation rate of 19 per cent per annum and an even greater inflation of wages in the building industry. The cost range on these estates is from TL 46,000 to TL 575,000. There are, of course, many factors which can influence the building costs, including the size of the buildings, which varies from a few as small as 15 m^2 to a few as large as 1,000 m^2, with an average on all the estates studied around 100 m^2. However, an extensive attempt to find any correlation between cost and any other factor, apart from general increase due to the inflation, failed.

The Gaziantep Estates

The only estate whose development is being financed 100 per cent by the Government is the Model Estate, consisting of 50 units, at Gaziantep, a special area near the Syrian border. The origin of the estate goes back to a cooperative of automobile repairers which was formed in 1965 to set up an estate of 1,100 units. The Ministry of Industry and Technology decided to use the estate as a pilot project for a Small Industries Development Centre which would provide technical assistance to industries on the estate and common facilities in the form of workshops, laboratories and training courses. A United Nations team has been attached to the project since 1969. Fifty units subsidized by the Ministry are set aside for selected firms. (See Appendix).

Large and Medium Industry Estates

The Turkish Government differentiates clearly between "industrial estates", which fall under the small industries development programme, and "industrial areas" or "districts", intended for large and medium sized industries. The limit of a "small scale enterprise" in the definition of the Ministry of Industry and Technology is a capital investment, excluding land and buildings, of five million Turkish lire.[1]

1/ The State Institute of Statistics has the figure of less than 10 employees.

The programmes are the responsibility of different Departments of the Ministry; the financing operates under different rules.

The large and medium industry areas programme has been slow to get under way and is only now beginning to develop seriously. Contrary to the small industry programme, the firms joining the industrial areas are nearly all new, many being joint ventures with foreign firms. The first such area was set up at Bursa, a centre of the automobile industry, with extensive assistance from U.S. AID at the beginning of the sixties. This stimulated the Chamber of Commerce at Manisa, near Izmir, to make a study which resulted in the Manisa Industrial district being opened in 1972 on a site of 170 hectares near the town. Unlike the industrial estates, only the plots are sold, firms erecting buildings to their own requirements. To date 10 plants are in operation, employing around 1,200 persons at peak periods. Thirtyfive others are in process of entering: about 45 per cent of the area has been sold.

There is a large industry area at Konya, where there are already eight industrial estates, including six private ones, and application has been made by industrialists at Antalya, on the south coast, to set one up. It seems that the undoubted success of the industrial estates is stimulating the larger scale industrialists to imitate them.

Conclusion

There is no question that the Turkish industrial estate programme is a growing success and is beginning to make an important contribution to industrial development. The factors causing this favourable result are many, including the stage of industrialisation which the country has reached, the fact that so many Turkish workmen have had the chance to work in Western Europe, the policies of the Ministry of Industry and Technology and, not least, the character of the Turkish small entrepreneur himself. All these factors are further explained in Chapter V.

CONCLUSION

The facts emerging from the description of the six industrial estate programmes in this chapter are analysed and sythesised into Conclusions at some length in Chapters IV, V and VI. Three estates, Cuenca, Ahwas and Gaziantep, each presenting special and different problems in their development, are given as case studies in the Appendix. It would therefore be a duplication to do further analysis at this stage and best to treat this chapter as a straight presentation of facts, as far as they are ascertainable, to be examined critically in the second half of the Report.

CHAPTER III

GOVERNMENT POLICIES AND PROCEDURES ON INDUSTRIAL ESTATES

INTRODUCTION

From Chapter II it will be clear that in all the countries studied the governments have active programmes for the creation of industrial estates. These are at widely differing stages of development. The policies and objectives on which they are based are defined sometimes more and sometimes less explicitly. The programmes have advanced or lagged according as interest in them has fluctuated. In Iran and Ecuador there have been periods of years when interest seemed very slight. In Senegal the little Thies estate has been sustained fairly steadily since its creation. In Pakistan there was a major effort in the early fifties and again in the mid-sixties. In all these countries there now seems to be a strong revival of interest and activity with the passing of the Industrial Estates Development Law in Ecuador, the creation of the industrial parks in Iran and new estates in Senegal and Pakistan. Only in Turkey does the effort seem to have been sustained continuously and increasingly since the initiation of the programme in 1963.

At the opposite pole from Turkey, where the initiative is from private entrepreneurs and the Government's role is largely facilitating, stands Cuba, where ll industrial development, including the location of industry, is centrally planned and controlled. Industrial policies and plans are, in turn, an integral part of the global economic and social development programme.

TABLE 4

Government Policies to Promote Industrial Estates.

Objective	COLOMBIA	ECUADOR	IRAN	PAKISTAN	SENEGAL	TURKEY
Objective 1. To bring small and small firms together so as to be able to provide common facilities & encourage complementarity	Implicit	No	Not Stated	Implicit	Implicit	Yes
Objective 2. To promote a spirit of Cooperation between small firms in various fields	Yes	No	No	No	No	Yes
Objective 3. To develop an instrument of decentralisation of industry to achieve more balanced development esp. for backward regions and premote employment	Yes	Yes, but in existence since 1968. Now revised	Yes	Yes	Yes	Yes
Objective 4a. To develop existing small and artisan firms	To a limited extent	Not in practice	Yes, Partly based on Aid	Yes	Yes	Yes
4b. to promote new firms by offering attractive terms & facilities	No	Yes	Yes	No Stated	Esp. in Dak Free Zone	Not SSI. but Less Industrial Areas
4c. To induce foreign firms to establish themselves in the country.	No	Yes	N.A.			
Objective 5. To promote Sub-Contracting by large to small firms	To promote Vertical integration	No	Yes, in new SSI estate programme.	Not Stated	Yes	Yes
Objective 6. To enable Government extension Services to be more effectively channelled to small firms	Yes to firms of all sizes	Not Stated	Not Stated	Yes, to some extent	Yes	Yes
Objective 7a. To relieve Congestion & pollution in cities	To a limited extent.	Starting in Guayaquil	Yes	Not Stated	No	Yes
7b To Combat urban unemployment		Yes	No	Implicit	Implicit	Implicit
Objective 8 To provide better and safer Working conditions for small industries.	Yes- all industries	Not Stated	Not Stated	Implicit	Implicit	Yes
Objective 9 To avoid further overtaxing water and energy resources.	Not relevant.	No	Yes	No	No	Not Stated

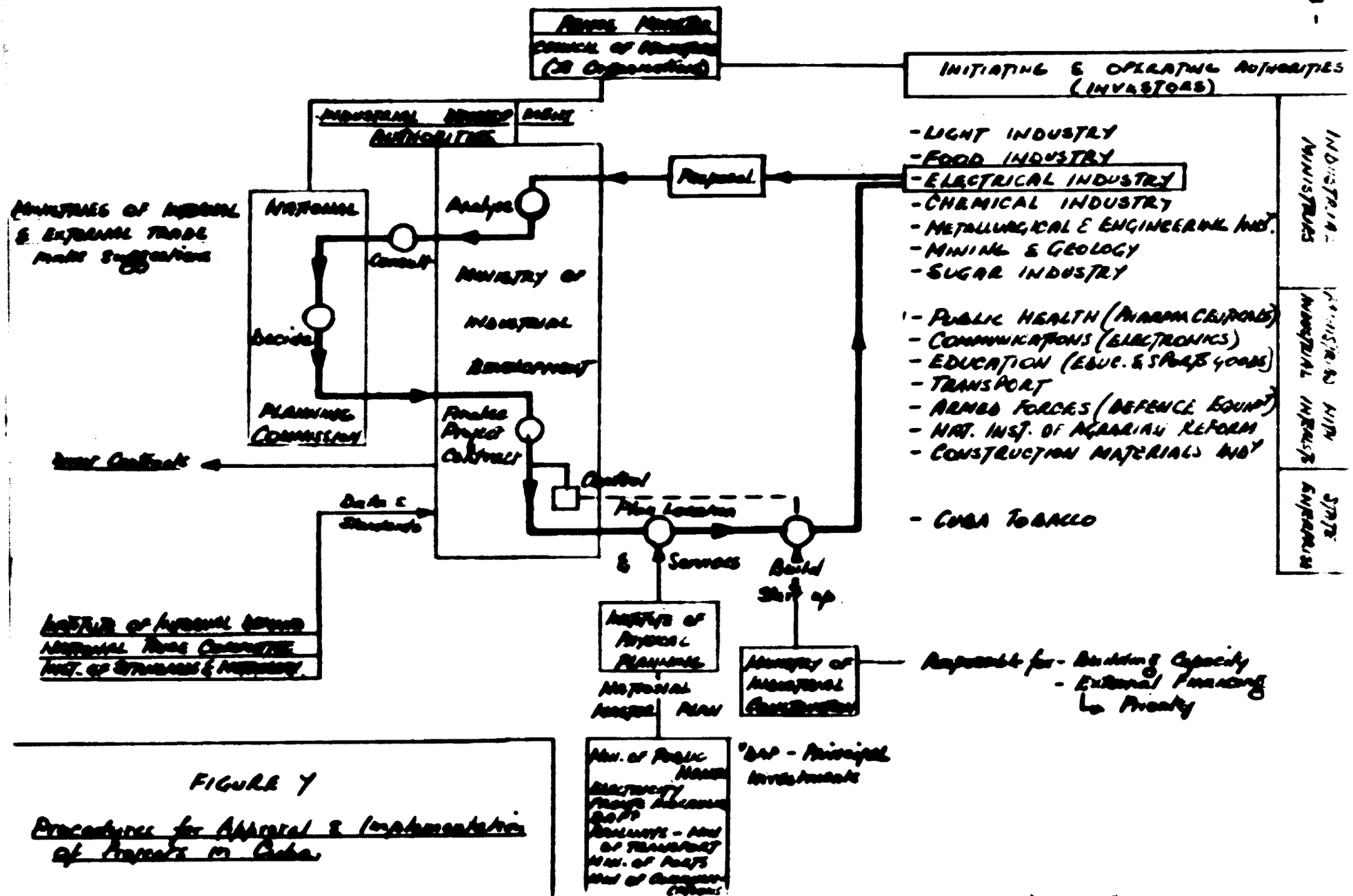


FIGURE 7

Procedures for Approval & Implementation of Projects in Cuba

1. OBJECTIVES

To be effective, a programme must be based on explicit policies and objectives. These may change from time to time as external factors, economic, political or social, change, but unless they are defined in the first place in the light of the best possible assessment of all the factors involved, changes may be made in such a manner that policies become vacillating and subject random pressures which will greatly reduce the effectiveness of the programme and may, indeed, bring it to a halt.

Table 14 lists a series of objectives on which an industrial estates programme may be based. The table is largely self-explanatory. It can be seen that only in the case of Turkey is there a really comprehensive range of objectives; in the other cases they are limited and, in general, less explicit.

The major difference between the Turkish Government's policy and the governmental policies in all the other countries studied is that, while the former strongly favours the development of industrial estates, it does not actually either initiate or invest in estates.[1] The initiative comes from the industrialists themselves. This makes it much easier for the Government, since its role becomes one of setting standards and providing the kind of support calculated to give the greatest impetus to the industrialists. Most of the objectives fulfil themselves in the process, which is not to say that the Government does not do a good deal of promotion, especially in the eastern part of Anatolia where industrialisation is still in an early stage. In the other programmes, the Government or a governmental authority is responsible for setting up estates, after committing large sums of public money, and then trying to persuade industrialists to take up places on them.

In Cuba the objectives in setting up industrial zones, while in some cases the same as those of other governments, do not include that of attracting industry but of directing its location in accordance with two sets of criteria:

1/ Exceptions are the Gaziantep Model Estate already mentioned, which, in fact, was originally created as the result of a request, and the Gediz Industrial Estate constructed to replace workshops destroyed in a disastrous earthquake.

Macro - To create urban centres, usually by enlarging existing towns, so as to avoid dispersing the population and thus to facilitate the provision of more complete social services at lower cost.

Micro - To guarantee an orderly urban development taking into account various environmental factors.

2. INCENTIVES

The Governments set up industrial estates because they believe them to be effective instruments for the achievement of any or all the objectives listed above. Having decided to create industrial estates, they then find it necessary to introduce measures to make it attractive to existing or new firms to take up places on the estates rather than either remain where they are, in the case of existing firms, or establish premises on their own land or go to some town other than that designated in the case of the new firms. Since in many cases industrial estates do offer conditions more favourable than most firms can find on their own, if the incentives and benefits fail to attract, it may well be because the feasibility and other preliminary studies have not been properly carried out. (See Chapter V).

Table 15 lists incentives and facilities offered by various governments wishing to persuade firms to enter estates. It is somewhat incomplete because not all the reports are very specific on this point. Before commenting on the various items, the use of the work "partially" in the table should be explained. It is intended to indicate that the incentive measure has had some success in inducing some firms to take up places but the estate has not achieved full occupancy, especially in Iran and Pakistan.

It should further be noted that the Turkish programme does not offer incentives to small firms to get them to join estates already established. The Government, through the Ministry of Industry, offers facilities, mainly credits, to groups of industrialists once they have decided to set up estates and have shown that they possess the financial means to take the initial steps. In the case of Cuba incentives are unnecessary.

[1] The word "partially" means that the incentive or facility has been successful in attracting firms or achieving its aim in some cases. See texts for clarifications.

[2] In the case of L-A industrial areas.

TABLE 15

Government Incentives & Facilities connected with Industrial Estates

	LIBYA		ECUADOR		IRAN		PAKISTAN		SENEGAL		TURKEY	
	Incentive	Effective	Incentive	Effective	Incentive	Effective	Incentive	Effective	Incentive	Effective	Incentive	Effective
1. Prepared land with services:												
(a) to buy at lower than commercial price	Not	-	Yes	Not yet	N.A	-	?	-	No	-	Yes	Yes
(b) to rent included in building rent	Relevant		Yes	Not yet	Yes	Partially [1]	Yes	Partially	Yes	Yes	No	-
(c) to lease as building site			Possibly	-	Yes		Yes	Partially	No	-	No	-
2. Standard buildings (a) at low rent			yes (5)	Yes	Yes	Partially	Yes	Yes, [illegible]	Yes	Yes	No	-
(b) low purchase price			No		No	-	N.A	N.A.	No	-	Yes	Yes
3. Credits at low interest rates (a) for land			Yes, but		No	-	Yes	Partially			Yes [2]	Yes
(b) in fixed assets			See text	Not yet	No	-	Yes	See text	see text	-	Yes	Yes
(c) buildings					No	-	Yes				Yes	Yes
4. Credits for (a) plant & equipment			Not excl. to IEs.	No	See text	Partially				Some firms	Yes	
(b) raw materials					-		N.A	-	Yes		Yes	See text
(c) working capital					-						Yes	
5. Exemption from/reduction of taxes, imports and other duties.			Not excl. to IEs	No	N.A	-	N.A	-	Not excl to IEs	N.A	No	-
											No	-
6. Common facilities (a) bulk buying			No	-	No	-	N.A.	-	No	-	Sometimes	N.A
(b) warehousing			No	-	No	-	Yes	Yes	No	-	"	N.A
(c) workshops			No	-	Yes	Partially	No	-	No	-	1 only	Estate not yet operational
7. (a) Technical assistance			Not excl	No	N.A	-	to some firms		Yes	Some firms	Limited	-
(b) training facilities at low cost			to IEs	No	N.A	-	but not excl. to IEs	N.A.	Yes	large firms	and not excl. to IEs.	-
8. Help in (a) dealing with authorities			No	-	Yes	Yes			Yes	Yes		
(b) [illegible]				-								Yes
(c) credit facilities			No	-	Yes	Yes	N.A	-	N.A	-	[illegible]	
(d) Other.			No	-	Yes	Yes			N.A	-		
			-	-	-	-	-	-	-	-		

Comments on specific items are:

Incentive 1 — Ecuador had not succeeded in attracting any firm to take up land at Cuenca by November 1975.

Incentive 2 — The term "appropriate" in relation to buildings or plots of land requires amplifying. The buildings must suit the needs and the financial means of the industrialists for whom they are intended. In Turkey the industrialists themselves select the range of sizes on an estate. Elsewhere building or plot areas are chosen by the authorities building the estate. There seem to be indications that areas much larger than industrialists are used to may discourage them taking up space. (See Chapter V).

Incentives 3 and 4 — Turkish practice is discussed later in the Chapter. In Ecuador all registered small firms (see above) benefit from a wide range of credit facilities which in practice do not always work out. No special facilities are given as incentives to enter industrial estates, but the small industry benefits have been extended to large and medium firms on industrial estates, including most of the fiscal incentives in group 5. Credit facilities to small firms wishing to enter the Ahwaz estate were comparatively valueless because they required owned buildings as collateral. A similar complaint was made by several Turkish industrialists about credits for equipment while they were still paying off the loans on their buildings on the estates. In Pakistan various types of credit still failed to attract small firms in sufficient numbers, while in Senegal some firms on the Thies estate are unable to meet the very low rentals.

Incentive 5 — The Turkish Government offers no import duty or tax incentives to industrial estate members. Ecuador and Senegal offer them to all firms which qualify as "small" provided that, in the case of Ecuador, they are approved and registered.

Incentive 6 — The comparatively few common facilities offered on most estates are not seen as important incentives.

Incentive 7 — Most technical assistance, including training, is available to small firms (where there are programmes), whether on estates or not. In Turkey industrial estates have some priority. Only in Senegal was a special effort made for firms on the Thies estate.

Incentive 8 — The management of Ahwaz estate helps member firms in this field. In Turkey such negotiations are carried out through the executing agency or production cooperative.

3. RULES AND PROCEDURES

Most governments have some form of qualification for acceptance on industrial estates. The Ecuadorian Government bars repair shops and service industry of any kind, stipulating only manufacturing firms. The Turkish Government gives priority to manufacturing firms but accepts automobile, agricultural machinery, electrical and electronic repair shops. Indeed, they form the great majority on most industrial estates. As a policy this seems to have paid handsomely, because many firms which entered the estates as repair shops soon branched out into manufacturing spare parts and even complete machines. One such firm encountered at Aydin, Southern Anatolia, starting as an agricultural machine repairer, had developed a heavy plough, for which it had received very large orders from Iran. This case is by no means unique. On the other hand, a firm in Cuenca, Ecuador, which started in automobile repair, has developed into one of the most important heavy plant manufacturers in the country. It is not on an estate; had it applied to enter in the early days, it would have been refused.

Certain industries are specifically excluded from industrial estates in Turkey (but not from industrial areas), including food processing and shoemaking.[1] In general, the rules are interpreted flexibly. Originally the Ahwaz estate was to have been confined to small manufacturing firms, but, since none applied, the estate was thrown open to establishments of all sizes and service industries, including warehouses. The Sialkot estate in the Punjab, nominally a small industry estate, has one firm of nearly 500 workers and several of over 100.

The procedures used in determining whether or not an estate shall be set up or whether it shall receive government aid appear to be an important factor in the ultimate success or failure of the estate. The only country for which detailed information about procedures is available is Turkey and, although the Turkish programme differs in essentials from the others, it is worth examining briefly.

1/ In Konya, Central Anatolia, an estate with 280 shoemakers on it has been set up without Government aid.

Procedures for Approval and Implementation of Projects in Cuba

As in all centrally planned economies, the Governmental structure in Cuba as it relates to industry resembles that of a conglomerate in which the various industrial ministries take the place of the individual firm members of a large private enterprise of this type such as Unilever, ITT or Siemens. Certain ministries with functions common to all industries such as Labour, Finance, Internal and External Trade play the roles of functional departments at Group Headquarters. The Council of Ministers may be compared not unrealistically with the Board of Directors.

The process of decision making connected with an industrial project put forward by an industrial ministry, together with the subsequent action and the related organisations is shown in Figure 7. It is largely self-explanatory. The proposal with a preliminary draft of the project, is forwarded by the industry ministry concerned, (or one of the other ministries with industrial interests), to the Ministry for Industrial Development where it is analysed from every point of view, economic and technical feasibility, cost and benefits, relation to other projects and so on. If necessary it is modified before being passed to the Central Planning Commission where the decision is taken to accept or reject it, or possibly to send it back for further study. If it is approved, financial provision is made and it is returned to the Ministry of Industrial Development where it is completed and passed to the Institute for Physical Planning, the organisation responsible for determining the location of industry and for coordinating the services necessary for its future operation.

Once the project planning is complete and the location has been decided upon, it is passed to the Ministry for Industrial Construction which undertakes the building of new plants. Extensions to existing plants may be carried out by the industrial ministry concerned. On becoming operational the plant is returned to the management of the ministry which originated it. It is understood that this process takes from two to five years from the time the go-ahead is given by the National Planning Commission.

Procedures for obtaining Government support in Turkey

The first step for a group of industrialists wishing to set up an industrial estate is to set up an Executing Agency. This is generally a building cooperative, brought into existence for the express purpose of enabling its members to buy the land, develop the infrastructure and have the buildings, both industrial and administrative, constructed. It has a precise legal status and statutes laid down by the Ministry of Industry and Technology. It is not a permanent body and goes out of existence when all credits on the estate and buildings have been repaid, generally in about ten years.

Apart from being the body which, through its Managing Board, negotiates the purchase of the land and engages the services, supervises and pays the architects, civil engineers and building contractors designing and building the estate, the executing agency is the legal body through which all credits and loans, whether to individual members or to the collectivity, are channelled. It is responsible for the contracts and for seeing that they are repaid with the appropriate interest. It has no powers to borrow money for equipment or working capital.

Once the Ministry received a request from the executing agency for credits, a two-phase survey is conducted. This comprises:

(1) a questionnaire sent to local authorities;
(2) a field survey carried out by a Ministry team.

The objective of the questionnaire is to obtain information about the economic and social structure of the small industries in the town; existing infrastructure facilities and possibilities of alternative locations; details of members of the cooperative, their trades, credit ratings etc; sites proposed and central facilities envisaged. Common facilities, except retail shops, are eligible for Ministry credits.

If the answers to the questionnaire are satisfactory, a team consisting of an industrial economist, architect and mechanical engineer is sent to discuss the information obtained with the Managing Board of the Executing Agency and the local authorities and to look at the physical conditions.

Discussions are held with the provincial Governor or his representative, the local Chamber of Commerce and Industry and the associations of small industrialists and artisans. Confidential discussions are held with the local branch of the Halk Bankasi (People's Bank), the State bank set up specifically to finance small industry and artisans.

The Ministry of Industry team make the decision on the location of the site by agreement with, (and delegation of powers from), the Ministry of Reconstruction, the authority responsible for town planning. The criteria for selecting the site include the cheapness of the land, availability of facilities for infrastructure, possible pollution, soil characteristics and possibilities of extension. Where there is a choice between sites, the Ministry team tend to choose the one furthest from the town, which often leads to conflict with the industrialists, who do not wish to be far out. The area of land to be purchased is determined by the needs of the cooperative members. The Ministry now requires substantial amounts of green space in addition to the roads. Land owned by a municipality is preferred, because it is usually cheaper.

The final project is the outcome of discussions between the Ministry team, the executing agency and the latter's consultants and covers all aspects of the proposed site. Once agreement has been reached the Ministry will normally approve credit facilities being granted to the executing agency. Of course, things are not always so smooth; on a few occasions the land has been purchased before the Ministry has been approached for credit and twice credit has been refused where land and buildings did not meet the criteria.

In the small industry estates the purchase of the land must be completed and construction of the infrastructure provided for before money will be made available by the Government, since the land and buildings are used as collateral. Loans for the infrastructure are available through the municipality from the Iller Bankasi, a State bank set up to service municipal needs. The loans are for 10 years with a repayment holiday in the first year. Interest rates are five per cent normally and three per cent for special areas.

The industrial areas for large and medium industries fall under different rules and the Ministry may grant 90 per cent credit for land and infrastructure, buildings being erected by individual firms. Government loans to small industry are only available for production and common facilities buildings. In normal areas they cover up to 60 per cent of the costs, in special areas up to 80 per cent, and, exceptionally, 90 per cent. Repayment period and interest rates are the same as for the land and infrastructure loans. Not all cooperatives take full advantage of the credit facilities available; some take only a small proportion, not wishing to be saddled with debt if they have the means to put down a substantial amount of money themselves.

Most firms moving on to an estate take the opportunity of moving to enlarged premises and buying additional machinery and equipment, which they can often do from their own reserves. For those who require loans the credit facilities of the Halk Bankasi are available and the Ministry accepts the formation of producer cooperatives to which credits for equipment and working capital may be granted. In practice there are problems with the Halk Bankasi, since it normally demands land and buildings as collateral and these are usually already being used to secure the Ministry loans.

In deciding the rate at which the building credits shall be granted the Ministry consults with the Executing Agency to find out over how many years, up to 10, the members wish to spread their share. The Government share will then be fed in at the appropriate rate.

The interest in the Turkish procedure is that it shows the care taken by the authorities to ensure that all the conditions for setting up an estate are as favourable as possible to its success and that the industrialists and artisans seeking to do so have the means to carry through the project successfully and to benefit from it.

4. EXTENSION SERVICES AND TRAINING

In most of the countries studied, with the exception of Cuba, efforts have been made to provide extension services and training programmes for small industries. In some cases these have been provided

by a national institution or organisation, but in none of the countries studied were such extension services provided exclusively to firms on industrial estates. There are examples from the countries studied such as some of the estates in Pakistan, the Thies estate in Senegal, the Ahwaz estate in Southern Iran, and the planned Gaziantep estate in Turkey, where efforts were made to use the concentration of firms on the estates for the organizing of more efficient extension services and training programmes. There is no basis for believing that the extension services have proved to be more effective or more efficient when provided for a group of firms on the estate, unless there is a large concentration of firms of the same sector or who are engaged in producing the same type of goods. Common workshop or laboratory facilities such as those erected on the Ahwaz estate and at Gaziantep can only operate efficiently if there are sufficient numbers of firms on the estates of the right type to need the services provided. When an estate is set up with a variety of different types of industries; it seems almost impossible for the extension services to cover all the different needs. In such circumstances the major effort has to be in general management or industrial engineering assistance and in some cases in design and marketing. Even here the existence of a single type of industry, such as the sports goods production at Sialkot estate in Pakistan gives much better opportunities for assistance in the fields of design and marketing.

The costs of extension services in relation to the benefits derived from them seems also to be a major factor when related to industrial estate development and planning. According to the information obtained, the very small factories and artisan workshops on the Thies estate in Senegal have derived some benefit from the continued and intensive assistance given by the staff of SONEPI but the question has to be asked whether the costs of this assistance bear any relationship to the very small units that have derived benefit. On the other side of the problem one wonders whether in the case of Gaziantep in Turkey where it is planned that 1,150 firms will set-up on the estate, the workshop or laboratory facilities and extension services, as originally planned, will adequately cope with the needs of such a large number of factories.

There is also a basic problem in the selection of extension services staff to deal with small industrialists. Most of the developing countries lack the type of persons who have the experience and initiative needed to work with this type of entrepreneur who set up small industries, and who are, for the most part, very rugged individualists with little formal education. There seems to be some doubt whether young university graduates, engineers or economists, with theoretical knowledge are the right sort of people to undertake this extension work. Such persons, however well intentioned and dedicated, don't have "a common language" with the small industrialists and are either unable to handle the practical problems that arise or even in the case where they can suggest solutions, their advice lacks conviction and they are unable to demonstrate the better methods or processes themselves. It does appear that there is some evidence to believe that the organization of extension services on industrial estates gives opportunities for these younger extension officers to build up closer less formal relations with the groups of small industrialists who may in the course of time begin to acquire some respect for what they consider to be the superior theoretical knowledge of the extension officer. This is bound to be a long process. There is a basic insuperable problem that the developing countries lack people at the "technician level" who would form the basis of industrial supervisors, workshop managers, and salesmen. It would make more sense to try to give this group more advanced training on theoretical questions and on extension techniques rather than use graduates for this work. Such further training can be organised nationally, or possibly in some cases, an international course might be of value. There is no doubt that such groups of "technician" extension officers would have to be supplemented by a small headquarter staff of graduate engineers and economists to deal with more complex problems.

CONCLUSION

All the above points show clearly that there is need for clear government objectives when establishing industrial estates and that these may vary considerably. In practice, they are usually left rather vague.

One has the feeling, based on the data collected, that decisions as regards objectives, locations and incentives are not usually the result of full studies, but rather the outcome of varying influences and factors. Although some effort is made in some cases to learn from experience, in other cases there has been no real attempt to find out the reasons for successes or failures. Turkey, of all the countries studied, seems to be the major exception because in that country estate development has been left to private initiative. To a much greater extent the market force of supply and demand have operated as far as industrial estates are concerned. In all other cases the establishment of industrial estates have been based more on the decisions of planners. Where there is a fully centrally planned system in operation as in Cuba, and the Government has the power to direct the industries and plan the projects in detail industrial estates or industrial zones have been successfully developed in this way. However, in other cases such as Ecuador, where there have been central planning decisions on locations of industrial estates, but then the establishment of the individual industries have been left to private industries and to market forces, the results have not yet been too successful. The case of Ahwaz seems to show that the objectives of the planners and the resulting effects of local economic factors and influences continue to produce the opposite of what was originally intended. Senegal with its "trial estate at Thies, may be a possible exception if one can be assured that lessons learned in the development of this small estate venture will be applied elsewhere but there does not seem to be any guarantee that this will be the case.

CHAPTER IV

COSTS AND BENEFITS - TANGIBLE AND INTANGIBLE

INTRODUCTION

In trying to assess the costs and benefits and the return on investment of an industrial estate programme, the first question must be: "What are the objectives of this programme?" If the primary objective is, say, the reduction of congestion and dislocation in a great city, then the main beneficiary may and perhaps should be the city whose business will then be conducted more expeditiously and economically, but the financial effects be impossible to quantify. If the main objective is to create employment, then the measuring stick is the number of jobs created and the cost per job on an industrial estate as opposed to the number created and the cost per job by any other means, (firms establishing themselves individually, labour corps or other job-creating entities). If the objective is to attract new, preferably foreign companies to set up factories in the country or in a development area, the pay-off is whether the company would have set up at all - or set up in some other region - had the estate not existed. This, again, is hardly quantifiable except, perhaps, in terms of local employment opportunities gained or lost.

The subject matter of this chapter is primarily concerned with industrial estates set up either for the benefit of private industry by governments, (Ecuador, Iran, Pakistan, Senegal), or through the initiative of groups such as cooperatives, composed of private industrialists and/or artisans, (Turkey).

In Cuba the methods of establishing and to some extent the aims of industrial zones are so different from those of sponsors in the other countries studied that it is impossible to assess the costs and benefits in comparable terms. Indeed, the tangible benefits are impossible to quantify because there are no alternatives. In the other countries, even in Turkey, location on an industrial estate is still the exception;

most firms, large or small, are established on individual sites. In Cuba, no new industrial enterprise, including repair and service units, may be set up outside an industrial zone, with the exception of the few categories noted earlier.

The benefits of being located in an industrial zone cannot be compared with any alternative in the present and can only be set against conditions in the past, a poor enough base. The benefits do not seem to be to the individual firm but rather to the nation and the community. They are discussed in the next Section.

From the point of view of the individual company - and this is a critical factor when trying to induce companies, existing or new, to join estates which have been established by public authorities - the estate must offer and be seen to offer benefits which the firm on its own could not obtain. These might include lower land and building costs or rents, easier loans at lower interest rates and such special benefits as exoneration from import duties or various duties and taxes.

The tangible benefits to the individual firm are probably the easiest to measure. There may be, as in Turkey, the possibilities of comparing the performance of firms on the estates before and after joining or with that of similar firms who have remained behind. There is also a certain number of intangible benefits which the location of industry on estates may offer to both the public and private interest and which, in the long run, may be at least as important as the more easily measurable ones.

It is unfortunate that for no country among those studied are the elements of data for making cost comparisons between firms on estates and firms on individual sites available. It is not known, in general, what are the costs of comparable land with water, drainage, power lines and so on, or what are the costs of erecting standard buildings in large numbers as compared with individual units, or, except in one instance, Senegal's Thies estate, what are the commercial rents as opposed to those on estates for comparable premises. In Turkey, where average costs of buildings on all the estates completed and in operation are known, the variability of average unit cost is from TL 8,000 to TL 43,000 ($ 571 to $ 3,071). In the estates under construction the range of estimated costs is even wider, between TL 46,000 and

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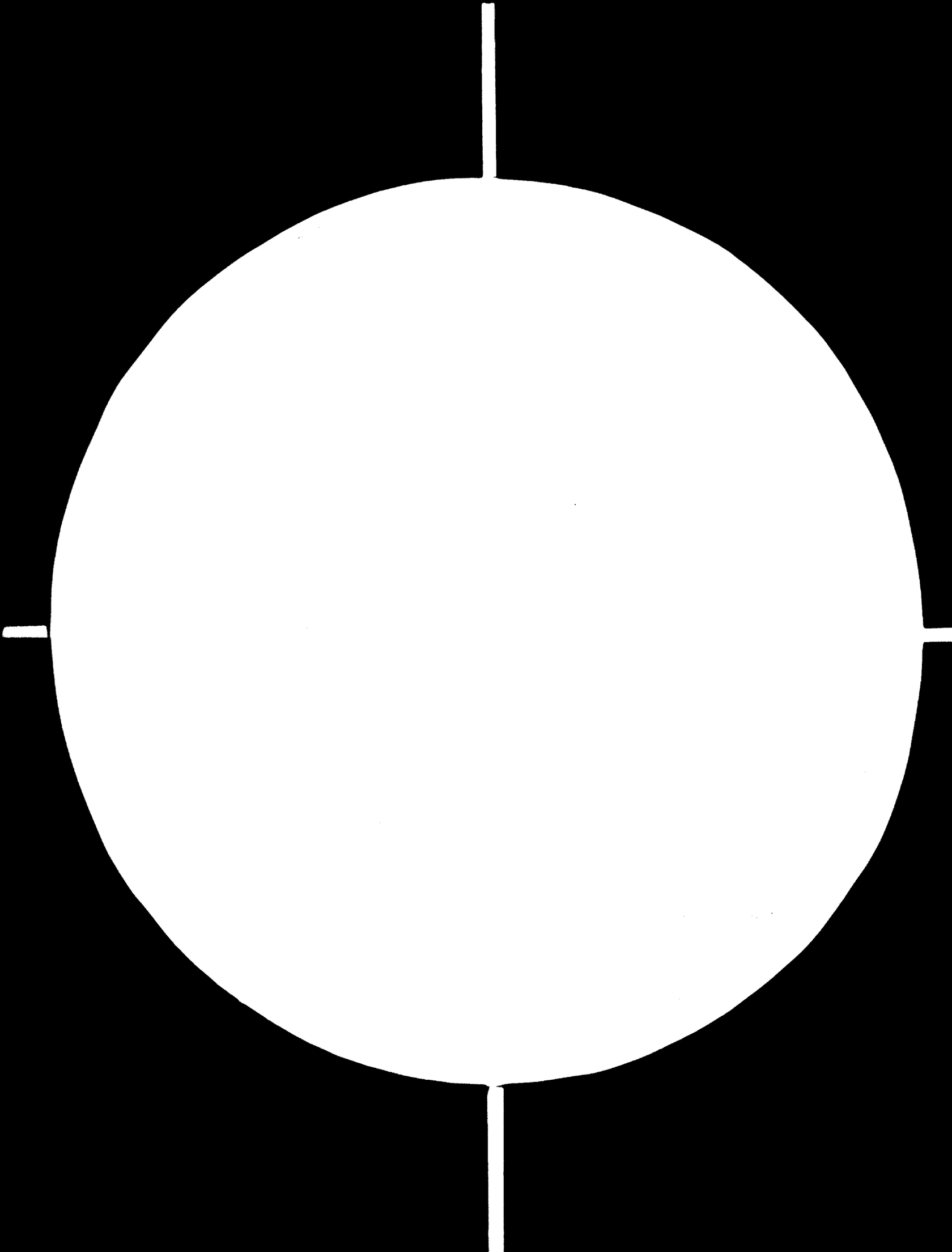

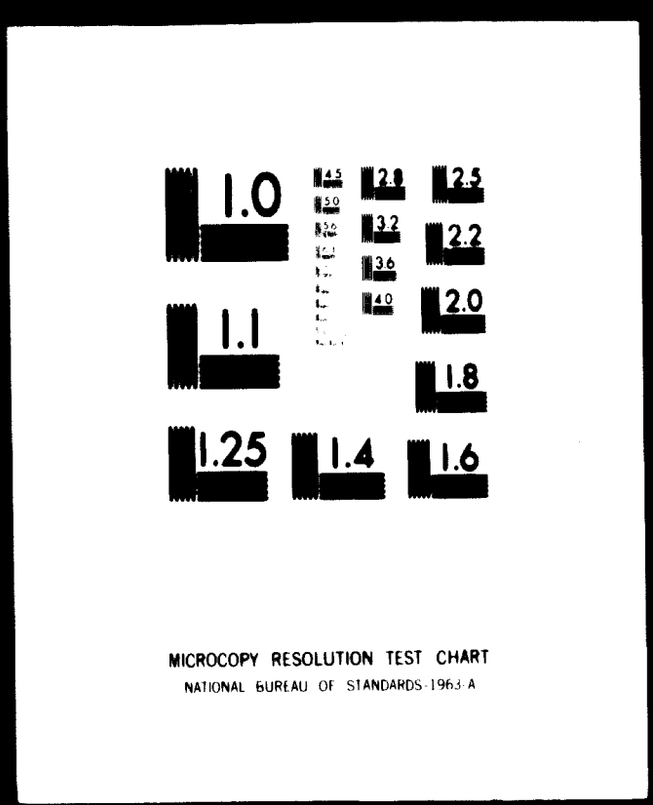

TL 575,000 ($ 3,285 to $ 41,071). It may be noted that these are small industry estates where the range in size of firm and volume of activity is generally fairly restricted. It was said in Chapter II that extensive plotting of these costs against various parameters failed to reveal any correlation between them and other factors, apart from the general inflation in building costs in the last few years. In these conditions, it would be necessary to examine and compare costs estate by estate and town by town.

1. THE TANGIBLE COSTS AND BENEFITS

Costs to Public Authorities and Benefits to the Community

Most of the known costs of setting up and developing the industrial estates were incurred by central governments, with the exception of Turkey, where no Government capital was invested except at Gaziantep, and therefore, no direct cost incureed.

Capital investment was in

Land (everywhere)
infrastructure (everywhere)
common facilities and administrative buildings (everywhere)
industrial buildings (Ecuador, Ibarra and Tulcan; Iran, Ahwaz, Senegal, Thies).

In addition to the capital investment by Government, with or without the participation of other bodies and the firms themselves, most estates had operating costs for management and the staff salaries of the administration, maintenance of the infrastructure and, where applicable, of the common facilities - workshops, guest houses and estate-owned restaurants. In the case of the Ahwaz estate, the only one for which both operati g cost and revenue figures are available, some revenue from the workshops and the guest house and canteen has been set off against the costs. (See Chapter II). No costs are allocated for extension services such as those provided by SONEPI to firms at Thies or the industry service centres in the Punjab, even though some of them are located physically on the estates. (Sialkot, Gujranwala). No relevant data are available for Cuba.

Table 16 is an attempt to tabulate various outlays and set them against revenues, where there are any, jobs created and output, for estates in the six countries studied. The data are very patchy and inconclusive.

The direct return on the Government investment in Ahwaz is negative to the tune of about $ 226,000 in 1974-75. The consultant who visited Thies states in his report that the estate is making a heavy loss and needs to be much larger if it is to break even. It is to be expected that most of the 11 small industry estates in Pakistan are making a net loss because all but two have a very low rate of occupancy. One the face of it, the SITE estate at Karachi, the "cradle" of Pakistani industrialisation, should be now have provided a very handsome return on the original outlay.

In the case of Turkey there is no public investment. The Government and the State banks make loans on which they receive five per cent or three per cent interest, depanding on the area, (see above). The Government makes a profit which, in the case of the loans by the Ministry of Industry, goes back into the funds used to provide credits for new estates.

In Cuba the benefits to the nation might be expected to be products manufactured under conditions more favourable to high productivity than would exist under any feasible alternative. These would include a better utilisation of the input in terms of raw material, plant and equipment, lowered overheads, (through the use of centralised services), and an overall reduced input of resources, material and human.

The community benefits through extended opportunities for employment due to the decentralisation of industry throughout the country. In spite of the current labour shortage, this will become increasingly important as the mechanisation of agriculture causes redundancies on the land.

The measurement of the tangible benefits is impossible because practically all the industry in the industrial zones is new. Measurement in financial terms is meaningless. There is no central authority for industrial zones in Cuba; many different authorities are involved. The total costs of development cannot be easily compiled. The only valid costs for comparative purposes would be in man-hours set against the

Table 10

Performance Data of selected Estates or Programmes in Six Countries

	Total Investment (Estate only)	Government Participation	No. of Productive Units	No. of new Jobs created	Investment per Job (Estate only)	Government Participation per Job	Value of Output 74-75	Annual Value of output per Worker 1974-75	Operating Costs 1974-75	Gross Revenue 1974-75	Net Revenue 1974-75	Return on Investment 1974-75
	$	$			$	$	$	$	$	$	$	%
GHANA No data.				F I G U R E S		A R E	NOT	COMPARABLE				
ECUADOR - All 4 publicly owned Estates - Tulcan Industrial Estate only	1,576,423[2] 36,263	253,846[2] 19,230	5 2	200 140	7,882 259	1,269 137	NA	NA	NA Affecting [illegible]	N.A.	N.A	N.A
IRAN - Ahwaz Industrial Estate	3,655,000	2,655,000[3]	15	500 (officers)[4] 207 (Units)	7,330 17,705	5,330 12,874	609000	{3,200 7,720}	312,740[10]	86,370	(226,370)	(6·2)
PAKISTAN - 11 Small Industry Estates - Karachi SITE Estate	5,266,670[6] 6,770,800[6]	5,266,670 6,770,800	270 700+	4,000 (Est)[5] 28,000 (Est)	1,317 241	1,317 241	N.A N.A	N.A N.A	N.A N.A	N.A N.A	N.A N.A	N.A N.A
SENEGAL - Domaine Industriel de Thiès	222,840[7]	45,460[8]	5	138	2,650[7] (329)	329	3,700 (222 [illegible])	5,850	N.A	7,364[9]	N.A.	[illegible]
[illegible] - 27 Government-assisted Small Industry Estates[1]	16,473,535	6,880,221 (Loans)	5,672 Estate Units	11,344 (Est)[5]	1,452	607 (Loan)	3,945,600[11]	3700[11]	N.A.	Govt. Revenue averages about 4·5% of credit	-	45% of [illegible]

[1] Previous tables & references in the text have referred to 28 SSI Estates, but one is an independent private estate. Other figures have been adjusted to match.

[2] Total investment figure including Canon. See text Chapter II.

[3] The difference is the estimated $1 million [illegible] aid in development

[4] See text Chapter II

[5] On the assumption that the estimated workforce doubled after entry of firms on to the estates

[6] Rupees at pre-1972 rate of [illegible].

[7] Total investment, in the estate only, excluding firms' own investment in plant, etc.

[8] Government & other publicly financed share of estate company capital.

[9] Sale income is rent at 30 francs/sq. m/month

[10] See Chapter II for breakdown.

[11] Calculated from official Census for 1970 on basis of output per worker in the persons engaged group + 30% increase [illegible] to 1974-75. Total workforce at [illegible]

employment of the scarce labour resource to attain the same ends - the establishment of industrial units of the same size - in some other way.

One of the primary objects of Government support of industrial estates in all countries, including the developed ones, is the creation of employment, especially in less developed regions. Here there is a little more data, but still too many "informed guesses".

In calculating the investment per job created, it must be emphasised that the investment is <u>in the estate</u> only, which may be simply prepared land or both land and buildings. Production equipment and other capital assets may be expected to be the same whether a firm is on an estate or in its own land and buildings. Depending on whether the industry is capital or labour intensive, the investment in production assets may be very much larger or very little larger than the investment in land and buildings. The financial savings effected by joining an industrial estate will therefore by progressively less important as capital intensity rises. (See formula below).

Benefits to a given town or region may be:

<u>Direct</u> - Increase in local wealth due to increased employment, either

(1) in local firms which have increased their business as a direct result of having moved onto the estate, or

(2) in firms which have started new ventures as a result of the existence of the estate, or which have moved from other regions, attracted by the estate, including foreign firms;

- increase in wealth and employment through extended use of local raw materials;
- increase in local wealth due to increased business given to local firms - retailers, wholesalers, transport, construction and other local enterprises - by firms on the estate;
- increase in provincial or municipal taxes and other contributions.

<u>Indirect</u> - Increase in spending power of individuals due to increased employment, reflected greater retail sales, construction of dwellings, purchase of consumer durables, etc;

- Creation of secondary industries.

The only place where benefits to local economic life were specifically mentioned was Aksehir, a small town in Turkey. The growth of spending power of workers since the creation of the estate was said to have reflected in increased retail sales. For the rest, such benefits have to be inferred. None of the country reports refer to the creation of any secondary industries arising from the presence of estates other than retail shops and services, (restaurants, hairdressers, banks, etc.) set up on the estates themselves. Even to attempt to put any monetary or percentage value on benefits would demand an in-depth study of a town over a period of years. It is more than doubtful whether the necessary data would be forthcoming, in view of the general paucity of statistical information in all the countries visited. The best place to start might be the local offices for national and municipal taxes.

Costs and Benefits to the individual Firm

The cost or benefit of purchasing premises on an industrial estate as opposed to building on a private plot is the difference between the costs of the land, infrastructure and building purchased as part of a collectivity and the costs of the same bought privately, production equipment and other fixed assets being the same in both cases. There is another factor which may be important, which is the interest rate offered to members of industrial estates. (Three to five per cent in Turkey vs 14 per cent commercially; nine per cent in Ecuador vs 18 per cent commercially). Capitalised over a ten year payback period, this can represent a critically large difference to a small firm in terms of working capital, particularly in the early years. This can be represented by the formulae

Private $C_1 = E + L + F + B + I$ where C_1 = Cost of setting up on own land

C_E = Cost of setting up on estate

E = Investment in production equipment

On Estate $C_E = E + aL + bF + cB + dI$

L = Cost of Land

F = Infrastructure and common facilities

B = Cost of building

I = Sum of interest payments over period of loan

where a, b, c and d are coefficients differentiating each item on an estate from the same item privately

Land, infrastructure and common facilities costs and buildings (where an estate contains many standard buildings), would normally be cheaper than when purchased privately, (but not invariably,) and thus the coefficients less than unity. In Cuenca, Ecuador, two industrialists said that the land on which they had build their factories, even after installing the water, power, sewage etc., was less than half the price of land on the Cuenca estate and they were nearer the town.

The individual firm may expect to benefit from moving on to an industrial estate rather than to a private site because of the lower outlay involved initially and lesser credits required, combined with the lower interest rate for State, as opposed to commercial loans. Most firms leave their existing premises because these have become too small for their expanding production and they need more space if they are to develop further. The lesser initial outlay may also mean that a firm can move earlier than it could otherwise have done and thus have longer to take advantage of the improved physical and other conditions, and that it can purchase more equipment for the enlarged premises than it would otherwise have done for the same total outlay.

An attempt is made below to assess the return on investment of firms on two industrial estates in Turkey. Like almost all the other assessments in this report involving statistics, the figures are estimated but, hopefully, conservative. The main assumption is that firms on most Turkish estates double the number of persons engaged (including the unregistered boys), within two years of moving on to an estate.

(1) Ceyhan[1]	TL	TL
Average investment in buildings - per unit	51,524	
5% interest on 60% of cost over 10 years[2]	15,345	
		66,869

1/ The data on which the examples are based are given in extenso in the country report.

2/ Interest in all cases is calculated simply on the total sum across 10 years and not reducing with repayments. This makes a more unfavourable case than the reality.

		TL	TL
Share of land and infrastructure (1/244 x TL 3,704,000)		15,180	
Interest on bank loan on 50% infrastructure		5,315	
			20,493
Total investment			87,362
Average no. of workers/unit before moving	6		
Average no. of workers/unit after moving	12		
Additional workers	6		
Average annual output/worker		59,300	
Additional output of 6 workers		355,800	
Net revenue on output at 10%		35,580	
Return on investment in land, infrastructure and buildings (due to add. workers only)			$\frac{35,580}{87,362} \times 100 =$ 4.5 per cent

(2) Aydin

Average investment in buildings - per unit		36,366	
5% interest on 60% of cost over 10 years		10,909	
			47,275
Share of land and infrastructure estimated at 15% cost of bldgs. (1/550 x TL 2,997,798)		5,450	
Interest on bank loan of 50% infrastructure cost at 14% over 5 years		1,907	
			7,357
Total Investment			54,632
Est. average no. of workers/units before moving	3		
Est. Average no. of workers/unit after moving	6		
Additional workers	3		

	TL	TL
Average Annual output per worker	80,010[1/]	
Average additional output - 3 workers	240,030	
Net revenue on output at 10%	24,003	
Return on investment in land infrastructure and buildings (due to add. workers only)		$\frac{24,003}{54,632} \times 100 = 44$ per cent

It is believed that the foregoing estimates are conservative, in which case the return on investment to the individual firm and, collectively, to the country, is high.

In Turkey the Department of Small Industry and Handicrafts carried out a survey on the first industrial estate in Ismir in 1970 to find out what benefits had been received and growth achieved by the firms which had moved in. Some firms had been there over two years.

Two questionnaires were issued, one on the estate as a whole, and the other a unit to unit survey. 116 forms out of 141 given out were returned filled in, most only partially. The survey suffered by being handled by different officials at different times. Answers to some key questions are given in Table 17 below. They must be read with some reserve.

Item	No. of firms replying	Before Moving	After Moving	Percentage Increase
1. Total covered area	89	5,934 m^2	13,761 m^2	131
2. Employment(workers)	117	305	388	27
3. Horsepower	N.A.	707	1,553	119
4. Gross sales value	N.A.	TL1,830,000	TL 5,700,000	211
5. Output/capital	29	0.80	1.12	40
6. Capital per worker	49	$ 655 (1967)	$ 1,394 (1970)	112
7. Labour productivity Output per worker	21	$ 727 (1967)	$ 1,944 (1970)	167

1/ The larger increase in output per worker as compared with Ceyhan is due to a change in the category of the firm, which according to the Census, changes the productivity.

reported on the estates visited. It is a pity that more complete information is not available.

2. THE INTANGIBLE BENEFITS

Intangible benefits to the Community

Intangible benefits to the public at large would seem to be of two types:

(1) improvement in environmental conditions and amenities in a town of city due to moving out of large numbers of small firms to an estate, such as reduction of congestion in the streets and consequent easing of traffic problems, reduction of noise and other types of pollution;

(2) creation of amenities such as new roads, improved or extended public transport services.

As in the case of the tangible benefits, the intangible benefits have to be inferred. The removal of over three thousand firms and artisans shops from the centre of a city of 200,000 inhabitants such as Konya could hardly fail to improve conditions within the city itself, the more so because trades tend to be grouped in single streets or blocks of a few streets and whole quarters may thereby be liberated for development.

The provision of social benefits in Cuba is not the responsibility of the industrial zones but of the municipality. They are part of the basic infrastructure, which is supposed to cater for the needs of the people in process of industrialisation.

The individual benefits from the possibility of having better facilities - restaurants, shops, creches and provision for recreation - than he or she might be able to obtain if the enterprises were not integrated into a zone. All workers are theoretically entitled to improvements in the quality of their lives, but with limited resources on which there are many demands, it is clearly impossible to provide them at this stage and for a long time to come, other than on a collective basis. The industrial zone provides this basis for the industrial workers more effectively and

at less cost than, say, doing the same thing for factories scattered around a town or the countryside.

The only public amenities reported were in Turkey and took the form of improved roads and street lighting and improved local bus services.

Benefits to the individual Firm

In some ways the less tangible benefits to the individual firm of joining an effective industrial estate may be, in the long run, even more important than the short term financial ones. The five successful entrepreneurs on the Izmir estate all said that they could not have progressed so fast had it not been for the technical assistance they received and the training in management, accountancy and productivity improvement. The management of the Ahwaz estate gives a good deal of assistance to the member firms at public cost in expediting raw material permits and decisions by public authorities. The small estates in Ecuador do not seem to derive any such benefits, since there are no services and the estates are too small for any real inter-firm cooperation. There is no information on these factors in Pakistan, but the fact of grouping a number of firms in the same branch of industry, say, metalworking, should certainly lend the individual firm additional strength in dealing with authority.

In Turkey the fact of having to form a cooperative as executing agency before the Government will consider giving support and then having to keep it going for up to ten years is probably one of the most valuable spin-offs of the estates. On almost all of them there is quite a large number of firms in the same or related trades and the fact of working together in the cooperative and thus getting to know one another well has, according to almost all the industrialists questioned, resulted in greatly increased inter-firm cooperation and intra-estate contracting. Nearly everyone on the estates said that they were now giving and receiving contracts for goods that they had previously bought outside, sometimes imported. A sawmill owner said that his turnover had greatly increased due to his closeness to furniture makers on the estate. Some people said that they had embarked on new products suggested to them by colleagues. The fact of constant meeting, of moving in and out of one

another's workshops and hearing of one another's needs and problems is an intangible but unquestionable stimulus to higher performance.

The executing agency of the Turkish estate has a good deal of influence with government, municipal and other authorities, representing as it does, possibly hundreds of firms. It can obtain favourable decisions much faster than the lone entrepreneur who may have to beat his head against official doors for a long time before getting what he wants - if he ever does.

Finally, there is the industrial estate, as at Cuenca, Ecuador (which has yet to prove itself), in Karachi or Manisa in Turkey, which sets out to attract new firms, foreign or domestic. Here the questions are:

- would the firm have been set up at all, especially in the case of foreign firms entering the country, if the estate had not existed?
- would it have been set up in some other city or region?

In the first case, had it not been set up there would have been a loss to the national economy and possibly of foreign currency, as well as employment. In the second case, the loss is local, but it could be serious in an under-developed region with a high unemployment level. Certainly at Manisa, the only estate about which there is direct evidence, its existence has been instrumental in attracting firms, including foreign joint ventures, which would not have installed themselves in the locality had the estate not been there.

CONCLUSION

It is a basic assumption in all industrial estate development that the setting up of an industrial estate provides financial benefits to the country as a whole and to the individual firm. It is assumed that by setting up an industrial estate the costs of providing the infrastructure and services per unit is more economic than if each firm established itself individually. There is some difficulty in obtaining feasible data to prove that this is the case. The difficulty seems to arise in obtaining data on these costs for individual firms, setting up away from

an estate. For the individual firm it seems certain that, due in part to economies of scale in infrastructural investment and due in part to special incentives and subsidies, the individual firm does obtain the land and services it needs cheaper on the estate. This is probably more true for small firms but still seems to apply to the medium-sized factory as well.

The above conclusions apply to the tangible benefits. There are, of course, intangible benefits that are covered extensively in this report. It may be that these are no less important in the long run than the concrete tangible benefits derived from industrial estate projects.

CHAPTER V

FACTORS INFLUENCING THE SUCCESS OF INDUSTRIAL ESTATES

INTRODUCTION

Of the programmes studied, one, the industrial estate programme for small industry in Turkey, appears to be very successful. This is not yet true of the programme of industrial areas for large and medium scale industry, which is only now beginning to take off. In Pakistan, on the other hand, it is the large-scale industry estate programme which appears to be the more successful and must have contributed greatly to the country's industrialisation in the early days. The details available at present do not permit this contribution to be quantified. The Pakistan small industry programme does not seem to have been able to attract enough firms on to the estates, with three exceptions, to justify the size of most of them, with the exceptions of Gujranwala, Sialkot and Gujrat. Even then these local successes may be due to the aid received from the International Development Agency. A strong impression is left, especially in the case of Sialkot, that the traditionally export-oriented small industries there would have continued to develop satisfactorily without the aid of the industrial estate.

The foregoing discussion presupposes that efforts have to be made to <u>persuade</u> firms to enter industrial estates, which is not the case in Cuba. There the industrial zones cannot succeed or fail <u>because there are no alternatives</u>. One zone may be more efficient than another in furnishing services which increase labour productivity, but there is no competition between zones. Industry goes where it is directed.

The programmes in Ecuador has yet to take off, in spite of substantial UN, US-AID and other advice and support. The so-called estates at Ibarra and Tulcan are no more than a handful of factories at subsidised rents. The CENDES is interested in selling the buildings and land to the firms occupying them.

In Senegal, currently in the very earliest stages of industrialisation with very few Senegalese manufacturing firms or entrepreneurs, the Thies estate seems to have made a modest progress, with a large input of technical assistance, towards its objective of developing some artisans into real small industrialists with some knowledge and understanding of industrial management. It remains to be seen whether this can be repeated on the larger estates now under development.

The Ahwaz estate is admitted to have failed to achieve its original objectives. A great deal of money has been invested in the estate, including the central workshops and it is heavily in deficit on its operating costs. There seem signs that the industrial parks programme for larger industries, which has been better prepared, is making a good start with the Alborz Estate at Qazvin, although this was initially a spontaneous de development by industrialists to take advantage of the town's relative nearness to Teheran. The other industrial parks planned for large and medium firms are not yet operational. It is possible that the programme could be cut back owing to the recent need to save foreign currency.

The question which this chapter aims to clarify, if not to answer completely, is: "Why do some industrial estates succeed while others fail? What are the factors which influence the success of an industrial estate and of an industrial estate programme?"

1. FACTORS AFFECTING THE DEVELOPMENT OF INDUSTRIAL ESTATES

So far seven groups of factors have been identified, but they are certainly not exhaustive. They include:

(1) the extent to which the objectives which each estate is set up to achieve are correctly formulated and consistently pursued;

(2) the volume and nature of the national and local economic activities and markets;

(3) national characteristics, social and cultural patterns;

(4) the extent to which the supposed advantages offered by the estate meet the perceived needs of the potential members;

(5) the location in the country, the site in relation to its nearest centre of population, the design of the estate and its amenities, due consideration being given to factors (1) to (4) above and the size of the estate, its buildings and plots;

(6) the nature of the support offered by the government and other authorities concerned;

(7) the duration of the planning and construction periods.

These factors are examined briefly below.

1. The Objectives of the Programme

The objectives declared by various governments of the countries studied or to be inferred from their actions are tabulated in Table 14. The more important in the eyes of most governments seem to be:

(a) bringing small firms together so as to be able to provide common facilities, encourage complementarity and promote cooperation;

(b) development an instrument of decentralisation to promote development and employment in backward areas;

(c) to develop existing small firms and artisans;

(d) to attract new and/or foreign firms to a given town or region;

(e) to relieve congestion and pollution in cities and to combat urban unemployment.

Objectives (b), (c) and (d) may have strong political as well as economic motives behind them. An industrial estate is something tangible for a member of parliament to show to his constituents to prove that he is doing something for them. It was stated in Turkey that when credits for industrial estate development came before the Parliament they were always viewed favourably, even when other cuts had to be made.

Objectives can be conflicting. The aim of decentralisation of industry to backward regions - which, almost by definition, are likely to be away from main markets and with poor communications - may conflict with the aim of attracting new national or foreign firms. This seems to have happened at Cuenca. The sort of incentives needed to attract existing small firms out of crowded cities differ from those needed to induce firms to come from other regions.

Whatever the objectives may be, they will only be attained if the incentives are greater in the eyes of potential members than the apparent disincentives and match the aims of the programme. Industrialists convinced that conditions on an industrial estate will be better in most important

respects than their present conditions will come together to found industrial estates as they do in Turkey and as they are starting to do in Ecuador and Iran. In doing so they may further a government objective, but only because it coincides with their own interests, (see (4) below).

One thing seems to emerge from these studies. It is that once objectives have been decided upon - after all necessary studies to ensure that they are realistic and conform to real needs - they should be adhered to and not changed unless the conditions giving rise to them are changed. This seems to have happened in Ecuador at various times and on the Ahwaz estate.

The limited success of the Thies estate in achieving the objective of upgrading local artisans, seems to be due to the fact that this aim was stuck to and furthered by an advisory and training effort, perhaps disproportionately expensive viewed in the light of the financial returns, but necessary in a country where practically no indigenous industrialists existed. In the same way the original Karachi SITE estate succeeded because its objectives coincided with the urgent national need after Partition to provide home produced goods and a local need - that of providing jobs for hundreds of thousands of workless and homeless refugees.

These examples suggest that the diagnosis and definition of the problem which the industrial estate is to solve are critical in formulating objectives and that without a sound foundation in this respect the objectives will be unreal and will not be attained.

2. Volume and Nature of national and local economic Activity

One of the special advantages of being on an industrial estate is that of obtaining facilities, land, buildings, common services and so on, at costs much lower than would normally be available to a firm on its own because many of these facilities and their cost are shared by a number of enterprises. Another is the presence of firms in related fields, possibly complementary, able to provide each other with business opportunities, or firms in the same field able to operate, for example, cooperative purchasing and marketing schemes, maintain stocks of spares in common and similar activities.

Industrial estates cannot be expected to operate economically if the volume of economic activity in the country is at such a low level that it can only sustain a small number of little firms or artisans. So far, this is true of the Thies estate, which may be considered as a "business school", many of the orders being procured from Government agencies. Nor is it much use setting up an estate in a place where there are only a handful of firms able to join it, unless it can be made especially attractive to firms from elsewhere.

Elements in this factor include:

National

(a) GNP and GNP per capita and thus the purchasing power available or potential;

(b) distribution of markets and of industry throughout the country;

(c) the nature of the industries and handicrafts in the country and their potential for development, particularly by exploiting indigenous resources of raw materials and traditional skills for import substitution and exports;

Local

(d) the nature of local activities - heavy or light industry, commerce, services, including repair services, tourism, etc.;

(e) the markets served by the local centre and how well it is situated to serve them, e.g., near a port or frontier for exports, at a road or rail centre, near large industries able to offer sub-contracts, in an area of mechanised agriculture; (see also (5) below);

(f) the number and size of local industrial units;

(g) the level of local entrepreneurial development;

(h) raw materials available from local sources, e.g., wool, timber, kaolin, hides, agricultural products;

(i) availability of skilled labour, traditions of skill and training facilities.

Most countries, including poor countries such as Senegal, (GNP per capita, 1971 - $ 205), have scope for a few industrial estates which can be used to develop industries, but where the general level of economic activity is low and many live outside the money economy, (about one third of the population in Ecuador), they must be considered as long-term investments and not expected to offer any positive return on investment for some years.

The nature of the industries in the country and their suitability for incorporation into industrial estates must be an important factor.[1/] The most important single activity on the estates visited in Turkey is automobile repair and servicing, including lorries. The fact that this is sub-divided among a very large number of specialists, each concentrating on one element of a car - engine, brakes, wheels, electrical equipment, springs, bodywork and so on - makes it a very suitable industry for incorporation on an estate. Mechanisation of agriculture is also very advanced in certain regions. On the Aydin estate of 550 units, 220 are composed of auto and agricultural machinery repair shops. On the smaller Aksehir estate, 90 units out of 298 are in the same fields. A further important proportion of firms are in general metal machining, much of it connected with the auto repair activities. In Izmir one of the new estates of over 700 firms will be almost entirely occupied on auto repairs and the Auto Repairers Association of Gazianter has 878 members waiting to move on to the Cooperative Estate when it is ready.

This huge activity in auto repairing, inoluding rebuilding, in Turkey seems to owe much to the 500,000 or more Turkish workers in Western Europe, nearly all of whom return home with cars, many of which are in very poor condition. Reconditioning them is very much cheaper at home than it is in Germany or Holland, so the owners wait to get them back before having them done up. Some of these repair shops develop into manufacturing units, a few even becoming suppliers of authorised spares under quality control by the car makers.

A similar situation seems to exist in some towns in Pakistan where there are a large number of firms and artisans in the same trades and where the small industry service institutes for those trades can be located on the estates. Gujranwala, (light engineering), Sialkot, (sports goods and surgical instruments) and Gujrat, (electric fans), have already beenmentioned. In Iran the same situation exists in many artisan industries but so far they appear to wish to stay within the bazaars, which are, in fact, industrial estates.

1/ See Chapter VI for further discussion of this point.

On the other hand, the estate at Tulcan, which was set up against UN advice, could only choose even today from among 17 small firms in the town and main local activity is commerce with Colombia, the main flow of trade being into Ecuador because of the currently favourable exchange rate for buying in Colombia.

3. National Characteristics, social and cultural Patterns

This seems to be a most neglected factor when studying programmes of industrial estates and this fact may well be responsible for some failures.

Elements include:

(a) homogeneity or heterongeneity of race or religion;

(b) traditions of honest dealing. Do people trust one another generally or only those of their own tribe, family or religious group? Or nobody?

(c) traditions of cooperation in work;

(d) habits of saving for long term goals or heavy expenditure on social occasions such as marriages, etc.;

(e) traditions of craftsmanship, industry or commerce;

(f) respect for education and training;

(g) tendency to take initiatives or to wait for the authorities to act.

Much of the success of the industrial estates in Turkey seems due to the character of the Turkish workers and small entrepreneurs. They are very hard workers with great technical skills and initiative. Migrant workers in Western Europe have shown quite exceptional capacities for saving money, often living abroad in almost intolerable conditions so that they can buy machines and return home to set up their own workshops. Many estate members work abroad, continuing to pay their contributions during this period. It is rare that a small industrialist defaults on bank loans. At least in the provinces, the society is a homogeneous one with a well understood code of behaviour. The cooperatives necessary to set up industrial estates work well in these conditions.

Similar conditions exist among the Peguiche Indians in Northern Ecuador, whose centre is Otovalo. (See Figure 2). They are energetic, highly skilled in a number of crafts and strongly entrepreneurial.

They are eager for education. They have their own retail outlets in the USA, Spain and the Canaries and have non-Peguiche artisans as sub-contractors. On their own initiative and with their funds, because they wish to be independent of the Government, they have started a cooperative industrial complex near Otovalo. In contrast, the small industrialists of Guayaquil, although they want an estate because of increasingly bad conditions in the city, do not seem willing to participate financially in the preliminary studies and are waiting for the Government to finance them. The consultant was informed several times that, in general, cooperatives do not succeed very well in Ecuador. No doubt a somewhat heterogeneous population containing quite a few fairly recent immigrants has something to do with this, since immigrants generally tend to display a certain independence of others.

In Iran, where there is a long tradition of manual skills of the highest order, there does not appear to be any special tradition of successful cooperatives. However, in Iran the bazaar has a very special place in the economy and in society. Members of the bazaars are members of families who have been in the bazaar for generations. The bazaar has its code of commercial behaviour which is not lightly broken. It may well be that small firms and artisans in Iran and to some extent in Pakistan find it difficult to break out of the bazaar, even where the advantages of an industrial estate may be evident.

The social and cultural factors connected with setting up industrial estates deserve more study than seems to have been accorded them hitherto.

4. How far the industrial Estate meets the perceived Needs of potential Members

If firms, existing or new, are to be persuaded to join or set up industrial estates, they must be convinced that there are advantages in doing so which cannot be obtained by other means. In the case of foreign firms or firms moving from other regions, the location of the estate becomes one of the key factors. (See (5) below).

The elements attracting or dissuading potential members seem to be:

(a) the suitability of premises offered on an estate versus present premises in terms of space, possibilities of expansion, working conditions, etc.;

(b) attitudes of town planning authorities, e.g., how tough they are about getting firms out of the town;

(c) price of prepared land or land and buildings compared with similar facilities available privately;

(d) location of the estate in relation to customers, suppliers, markets and the risk of competitors taking former premises which were favourably placed;

(e) possibilities of increased business through the presence on any estate of firms in the same or related fields or, conversely, the absence of such conditions due to leaving an area where they exist;

(f) common facilities such as warehouses, central workshops or training programmes available on estates which are not available elsewhere;

(g) credit facilities, fiscal and other benefits offered by governments or other public authorities available primarily to estate members and not to industrialists of the same category as a whole.

If industrialists cannot see or understand the advantages to their businesses on an estate, (even though the advantages may be real), over available alternatives, they will not move in. It is as simple as that. In Turkey, even in some of the medium-sized towns, conditions are so cramped that expansion is impossible as business increases. Most building cooperatives have been founded for this reason, strongly supported by municipal councils anxious to reduce the congestion in their cities and often willing to offer land outside at very low prices. They are prepared to guarantee that premises vacated will not be re-occupied. The Government's long term building credits at one third of the commercial interest rate are also an important factor.

In Cuba the planning authority knows what kind of industry will go on to the industrial zone, at least in the medium term.

Fear of losing contact with customers used to finding them easily in town centres when they have moved to an industrial estate several kilometres from the town is mentioned by all the consultants as a major disincentive. Even in Turkey it had to be overcome on some of the earlier

estates, but there are now so many success stories of increased business by firms which have moved out that this is no longer a major element in firms' decisions.

On the Thies estate the five successful entrepreneurs took full advantage of the SONEPI and UNIDO technical assistance. They all said that they could not have developed as they did had they remained in their old workshops, but they had to be convinced in the first place. Much of their new business, which they are now technically and managerially able to tackle, comes from official contacts arranged for them by the SONEPI. Clearly a majority of small businessmen in Pakistan are not yet convinced of the advantages of moving.

In Ecuador, apart from Guayaquil, the pressures on small firms to move out of the towns are not acute. Even in Guayaquil, efforts by CENDES to set up a small industry estate have not so far aroused enough enthusiasm for the industrialists to be prepared to put money into it. In Cuenca, two industrialists who established factories just outside the town, one a relocation and the other a new business, both claimed that their land with infrastructure only cost half that offered on the new estate. One of them was convinced that any advantages the firm might gain were outweighed by the risk of his workers being "tainted with Communism".

The exoneration from import and certain national and municipal duties and reductions in taxes on revenue and the like are not exclusively reserved for firms on industrial estates in any of the countries studied. They do not therefore represent an incentive to join an estate. Only in Ecuador, the recent law promoting industrial estates extends benefits previously given to registered small firms, to firms of all sizes on estates. If fiscal and credit incentives are to be used, they must therefore offer special advantages to estate members not available to others.

The possibilities of increased business only represent a real incentive where there are enough firms in related lines of business on an estate to offer a choice not available elsewhere, or at least not with such ease. So far common workshops and quality control laboratories do not seem to be an attraction. Warehouses do exist on a few of the Turkish cooperative estates, but none of those visited seriously envisaged setting up workshops in the foreseeable future.

In the end, nothing succeeds like success. Once industrial estates are seen as a means of increasing turnover and rate of growth, industrialists will hasten to set them up, with or without government support.

5. Proper Selection and Location of the Site, Size of the Estate and Areas of Buildings or Plots

There are really three factors here - the location of the estate within the country - the location of the site vis-a-vis the town - the design of the estate in terms of its size and the areas offered.

The first group of elements are:

(a) the city's location in relation to national and possibly international markets, transport routes, sources of raw materials and skilled labour resources, etc.;

(b) that the city is one where the industrial estate is the best and cheapest way of obtaining suitable premises, for whatever reasons;

(c) that there are enough suitable industries to warrant constructing an estate of appropriate, economical size.

Cities and towns in which these elements are unfavourable obviously make bad choices for industrial estates. It is little use trying to use estates as a means of decentralising industry or stimulating backward regions because this alone will not induce firms to go there. This seems to be what happened with the small town estates in Ecuador and up to now at Cuenca. Qazvin and Saveh in Iran have, on the contrary, proved spontaneously successful as sites for industrial parks because they are the nearest points to Teheran where industries may be established.

The very large numbers of small firms and workshops in almost every town in Turkey have been repeatedly noted in this study. Even in the rebuilt town of Gediz, with less than 10,000 inhabitants, the industrial estate has more than 50 firms on it. It seems as if an estate can be started successfully, if numbers of firms are the criterion, almost anywhere in Turkey.

Elements in the selection of the site include:

(a) accessibility to the city so that customers can easily reach firms on the estate, goods can be economically delivered and labour can travel easily to and from work;

(b) the location is sufficiently far from the city and so placed in relation to it that it will not cause pollution nor be engulfed in the urban expansion within a few years;

(c) the physical characteristics of the site are such that it does not need a great deal of earthmoving and preparation and that it is suitably placed as regards water, power and drainage facilities.

It was noted earlier that the Ministry of Industry in Turkey pays special attention to the choice of site in terms of price, technical and environmental suitability. It has refused credits to cooperatives which have bought estates not meeting its criteria, which are sometimes at odds with those of the potential estate members. Elements (a) and (b) may conflict and have to be the subject of compromise.

The design of the estate must conform to the needs of its members and to what is economically workable. The question of optimum size is discussed separately in Chapter VI. The only question raised here relates to the areas of buildings or plots.

It would seem as if the areas of buildings and plots offered to small firms whom it is wished to attract to an estate should not be seriously out of line with their existing premises, even though they expect to expand. In most countries these little firms start in very small premises. In many cases the areas they need, (or at least can envisage needing), to double or treble their outputs are not so very large. If the minimum sized building or plot on offer is disproportionately large , they will probably refuse. This is probably more a psychological question than a purely financial one. The entrepreneur cannot see the point of paying for all the space which he sees as in excess of his probable needs. On the Turkish cooperative estates, where the industrialists select the areas of buildings which they think they will need, the average area is around 100 m^2, the range running from about 15 m^2 for artisans to about 400 m^2 with a very few up to 600 m^2 and a rare one above that size. The size of the plots on the Pakistan small industry estates runs from 465 m^2 up to

1763 m^2, the average being towards the lower end of the range. Six estates have small workshops for artisans and it is noteworthy that, while the general occupancy rate on the estates is very low, (see Chapter II, Table 10), the very small buildings are fully occupied. On the Ahwaz estate the plots are 8 each of 260 m^2, 365 m^2 and 1,260 m^2, the buildings occupying about three quarters of the plot areas. At Ibarra and Tulcan the buildings are 520m^2 and 450 m^2 respectively. On the Cuenca estate plots of 2,000 m^2 minimum were discussed.

From the foregoing facts one can come to the conclusion that in dividing an estate into plots one should aim at a size of each plot which is neither too small to permit for healthy normal expansion of workshops nor to make the plots too big, thus offering space in excess of the needs of the entrepreneur. Greater flexibility is probably created by a modular system whereby the individual lot size is reasonably small but permitting those firms that want large plots to buy up a number of units. In this case care should be taken not to generate a situation where a large part of estate is bought up by a few or even a single firm. This would destroy the social and economic balance of the estate and thwart the attainments of the objectives for which the estate was established.

The relation between a firm's existing workshops and what it may be offered on a new estate may be a significant factor and would merit further examination.

6. Appropriate Support by Government and other Authorities

The emphasis is on the word "appropriate". If the policy is to encourage industrial estates, whatever may be the objectives, then the incentives offered and support given by governments and their agencies, municipalities and financial institutions must be such as to make joining an estate by far the most attractive proposition among the various alternatives. The elements in this factor seem to be:

(a) how correctly the objectives have been specified in the first place and the extent to which they are based on adequate study, including studies of the most suitable supporting measures;

(b) the choice of industries permitted on the estates;

(c) the rigidity or flexibility with which the laws are applied;

(d) programmes of technical assistance, training programmes, common facilities, tc.;

(e) how the programme is presented to industry.

At Thies the support offered by the SONEPI, the UN and the French volunteers seems to have been necessary for the limited objectives. The estate firms are also subsidised by low rentals, (20 per cent of local commercial rates), and aided in obtaining Government contracts and in their negotiations with the authorities.

The financial aid offered in Turkey is essentially that of very low interest rates, coupled with long term credits, which make the burden of moving to an estate, where inevitably additional expenses in new plant and equipment are involved, quite tolerable to firms which are reasonably well managed. The performance and credit rating of prospective members is investigated before Government credits are granted.

The firms on the Ahwaz estate are heavily subsidised, (see Chapter II), but the common service workshops seem to be quite unnecessarily large in relation to the number of units on the estate, (twentyfour), so that they are greatly under-utilised and forced to seek work outside which is still insufficient. They were set up against the advice of certain UN consultants when the proposed estate was under study. On all the Turkish small industry estates, central workshops and laboratories are considered to be of very small priority; on the Manisa industrial estate the managing board's original proposal to incorporate workshops in the common services was rejected from lack of interest by member firms. The Gasiantep workshops are in the nature of a pilot project which will eventually serve an estate of 1,150 units.

The choice of industries is an important factor which is dealt with in Chapter VI.

Fiscal incentives such as exemption from various import duties, reduced taxes on revenue or exoneration from taxes on revenue reinvested have been discussed under Factor (4) above. It was said there that if

such incentives are to be used to attract industry to industrial estates, they must offer benefits of a type and level not offered to firms outside. The use of fiscal incentives for this purpose may well be questioned as they appear to produce only limited results.

From the foregoing facts one can come to the conclusion that in dividing an estate into plots one should aim at a size of each plot which is neither too small to permit for healthy normal expansion of workshops, nor to make the plots too big, thus offering space in excess of the needs of the entrepreneur. Greater flexibility is probably created by a modular system whereby the individual lot size is reasonably small, but permitting those firms that want large plots to buy up a number of units. In this case, care should be taken not to generate a situation where a large part of the estate is bought up by a few or even a single firm. This would destroy the social and economic balance of the estate and thwart the attainments of the objectives for which the estate was established.

7. The Duration of the Planning and Construction Periods

The last factor which may have some bearing on the success of an industrial estate, where industrialists are not 100 per cent sold on the need to participate in one, is the period between launching the first initiatives and the estate becoming available for occupation. If this period is excessive, first enthusiasm cools and it is difficult to rekindle. Those who wish to expand make their own arrangements. This seems to have been the case at Cuenca, which is discussed in the Appendix.

In spite of an 11 years delay at Gaziantep, industrialists there seem to have maintained some of their enthusiasm. (see also Appendix).

The Pakistan small industry estates seem to have taken about three years each to complete which seems a reasonable period on the basis of the information obtained from the different estates in the various countries. The completed Turkish estates took periods varying from one to nine years with a median of 4.5 years. Most of these estates now under construction are planned to take much less.

The factors which influence the duration of the construction period are multiple in Turkey. They include the time taken to get a cooperative together to find suitable land, obtain Ministry approval, which can drag out if agreement cannot be reached and, above all, the performance of the consultants and contractors responsible for the infrastructure and buildings. In one case the executing agency became so exasperated with the slowness of the contractor, they threw him out, engaged their own engineer and undertook construction themselves, very much quicker and at a price much lower than that originally quoted.

Even in Cuba the duration of the construction period is relevant in that the longer the period the longer the services of the construction brigade are tied up on that particular project.[1] Given the scarcity of labour and limited number of skilled building workers, another project

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1/ A "brigade" is a body of workers, which may number 2,000 to 3,000 engaged in a specific project or task.

must be delayed. The cost can be reckoned in "brigade hours" and can be increased or reduced independently of the working capacity of the brigade by planning errors, failures in delivery of raw materials or equipment and so on. The average industrial zone is said to take from two to five years from approval to becoming operational, inclusive of detailed planning.

The determinants seem to be to follow carefully the Ministry criteria in making plans, the correct choice of architects, consultants and contractors and, above all, proper supervision and management by the Managing Board of the Executing Agency. It is probably not an accident that one of the largest estates visited, Aydin, with 550 units, which was completed in less than three years, well below the median time, was the only estate visited to have a full time director.

2. CONTRIBUTIONS OF THE UN AND BILATERAL AGENCIES

The above is an attempt to examine the factors which determine the success or failure of an industrial estate programme and/or an individual industrial estate. Inevitable limitations in the obtaining of date has impeded a full evaluation. Undoubtedly there is scope for more study of the question since undoubtedly large sums of money are involved and decisions may affect substantially the rate of industrial development of a country.

In the whole of this question of industrial estate projects in developing countries, the factor of international assistance is becoming of ever greater importance. In the small group of six countries studied in no less than 4 of them, Turkey, (Gaziantep), Iran (Ahwaz), Senegal (Thies) and in Ecuador, the United Nations, mainly UNIDO has provided advice and assistance over substantial periods. The question arises as to what extent this assistance has been effective. It is known also that bilateral donors are assisting industrial estates projects to an ever increasing extent. This is true of the German, Swedish, Dutch and other bilateral programmes, although in the countries studied, most of the assistance had come through UNDP. The World Bank, the various Regional Development Banks and the European Development Fund are now expressing

more interest in providing both technical and financial assistance in the development of estate projects. It is therefore of paramount importance to evaluate what has been the result until now of the contributions made by outside advisers and experts.

There have undoubtedly been several cases of very useful positive contributions by such experts and advisers, but in the countries studied one is forced to a conclusion that much of this advice and aid has proved of little value.. In some cases this has undoubtedly been due to the low quality of the experts and the advisers who were sometimes sent to carry out this work, But in all fairness to the advisers and experts concerned, one has to state that in many cases the lack of real value in the assistance was due to the advice of the expert being ignored. In the case of Ecuador where the industrial estate programme has had little success until now, there is no doubt that the counsel of various UN advisers was ignored. Similarly, in the case of Ahwaz, in Iran the history of which is given as a case study in the Appendix to this document, here too the experts' advice went unheaded.

There are few experts in industrial estates and there has been a tendency for UNIDO to rely heavily on the considerable experience of industrial estates in India, which to a great extent has been a successful one. The Indian experience has made some important contributions both through Indian experts and through fellowships, but there seems to have been too little effort on the part of experts to study local conditions and make appropriate adaptations and modifications.

In the early stages of industrial estates programmes some governments have relied heavily on the United Nations advisers, and usually acted upon advice which took little account of the differing conditions of the various countries, not least the different national characters, and social and economic factors. In the course of the study some disillusionment was expressed in certain countries as regards United Nations and other international advisers. There may be need for both United Nations bodies and bilateral agencies to be more careful in the selection of advisers. There seems also to be more need to involve local personnel fully in all stages of the preparatory studies for an estate project, as well as in the drawing up of plans and in the implementation process.

CONCLUSION

The factors making for success in industrial estate programmes are basically those making for success in any business venture. The brief analysis above suggests that among the most influential are:

(1) correct appraisal of the problems based on in-depth studies leading to a proper definition of objectives;

(2) the consistent pursuit of those objectives, ensuring that all the measures taken are directly relevant to their attainment. Changes in objectives due to changed external factors should not be undertaken without adequate study;

(3) industrial estates should only be established where economic conditions, national and local, are propitious for their development and where they appear to represent an optimal means of promoting industry. Attempts to establish estates under other conditions are likely to lead to heavy disbursement of public money without commensurate benefits;

(4) all industrial estate programmes should be adapted to the social and cultural conditions in the countries concerned. Attempts to transplant programmes successful in other conditions without proper adaptation are likely to fail or be very costly;

(5) the ideal condition is where industrial estates set up spontaneously by groups of industrialists who clearly see them as beneficial and are willing to contribute their own finances. In these circumstances appropriate government support can be economically given and should be on terms as favourable as possible. Where governments decide to sponsor individual estates, they should ensure that their objectives and the advantages expected to accrue are fully recognised by prospective members. Incentives offered should clearly be more attractive than those offered outside the estates.

(6) in seeking to attract new firms to a locality by means of an industrial estate, the selection of the locality must relate to the norms of plant location in good management practice: incentives to locate in unsuitable regions might have to be so uneconomic to compensate for the commercial and other disadvantages to the firm that the funds might be better spent in other ways;

(7) land and buildings offered on small firm industrial estates should not be disproportionately larger than those currently occupied, as they may then seem to be unnecessarily costly;

(8) all support by public authorities, financial or other, should be designed specifically to further the objectives for which the estate has been set up. Expensive common facilities should not be provided without an assured demand;

(9) an undue lapse of time between initiating action and completion of an estate can cause a programme to fail through loss of interest. Energetic management and close supervision by the competent authorities at all stages is essential in maintaining schedules and ensuring satisfactory results.

In the discussion in this Chapter a number of elements have been identified of which further study would be justified. They are noted where they occur. It is suggested that special attention to them should be paid in any future programme of research.

CHAPTER VI

TENTATIVE ANSWERS TO FURTHER KEY QUESTIONS

INTRODUCTION

In the last chapter the factors which may influence the success of individual industrial estates or of a programme were listed and examined briefly. That was the most important of the four questions which this study is designed to clarify. The remaining three are discussed in turn below.

1. WHAT TYPE OF ENTERPRISES FIT INTO INDUSTRIAL ESTATES?

Table 16 shows firms established or about to be established on selected estates in four countries. Everywhere, except in Ecuador, there is a good representation of engineering and metalworking industries.[1/] On the Aydin estate, characteristic of other estates in Turkey, as already pointed out, a very important percentage of the firms are agricultural equipment and auto repair. The Iran Report mentions a number of industries on the Alborz estate at Qazvin, including motor oil, batteries, motor cycles, aluminium doors and window frames, structural steel building components, refrigerators and coolers, porcelain bathroom products, PVC pipes, washing powder, glucose, processed foods, spectacle frames and lenses.

The Ministry of Industry in Turkey specifically bars food processing and manufacture and shoemaking, as well as retail shops, from the estates which they support, but this does not apply to the large industry estates such as Manisa. Independent estates may include any trades they wish, subject, of course, to general town planning regulations. An estate of 288 shoemakers is reported at Konya, as well as other independent estates composed of single trades. In a sense this is a reversion to bazaar practice where trades are grouped by streets.

1/ Covering all forms of metalworking not including much machining such as metal furniture making, steel section rolling, sheet metal products.

No other government is known to have restrictions on specific industries, except in Ecuador, where repair establishments are excluded. There is little information on the breakdown of trades among the 700 firms on the Karachi SITE estate. The small industry estates at Gujranwala, Sialkot and Gujrat tend to be fairly homogeneous, reflecting local industries.

A commonsense approach suggests that the sort of industries and firms likely to obtain greatest benefit from being on an industrial estate would be:

(1) in industries where there are large numbers in the same trade and in related and complementary trades;

(2) small and medium sized; the larger a firm becomes, the more it is able to rely on its own resources, and indeed, may find it economical to do so, e.g., setting up its own maintenance facilities and toolrooms, achieving economies through bulk buying, etc. It also needs less aid in negotiating with the public authorities;

(3) labour rather than capital intensive;

(4) in manufacturing rather than process industries.

(5) in general, industries not dependent on being near sources of raw materials.

One of the advantages of joining an estate is to obtain land and buildings at lower costs than possible as an individual firm. Small and medium-sized industries can be housed in standard units, generally cheaper to build than diversified buildings. Manufacturing industries can more often use standard buildings than process industries, especially chemical manufacture. The more capital intensive a firm, the less it will benefit proportionately from being on an industrial estate with savings in land and building costs. In the formulae quoted in Chapter IV,

$C_I = E + L + F + B + I$ for firms <u>not</u> on an estate, where E represents cost of plant and equipment.

$C_E = E + a.L + b.F + c.B + d.I$, where a, b, c, d are coefficients modifying land, infrastructure, building and interest charges as a result of joining an estate.

a, b, c, d are normally less than 1, (otherwise there would be no financial advantage), but E remains the same whether on an estate or not. The greater E, the less the relative advantage of the savings on the other factors.

Firms which should normally be barred from estates would include:

(1) firms in basic industries such as ore treatment, smelting, heavy chemical manufacture, which are generally very capital intensive and usually pollute the environment;

(2) large textile, spinning, weaving and finishing firms;

(3) any other industries which may give out noxious fumes or other forms of pollution, including noise pollution, (weaving sheds, engine testing);

(4) firms whose products may be sensitive to pollution, such as certain food or pharmaceutical products;

(5) wholesalers and retailers, except as suppliers of spares to important trades on the estates and services to the estate, in which case they would be treated as common facilities;

(6) firms using large areas specifically for storage. This involves using large areas of land at subsidised rates which could be put to more productive use.

In Cuba, offensive industries are allocated areas separated from other firms in the zone. Light industry using many female workers is also kept out.

2. WHAT ARE THE OPTIMAL SIZES OF INDUSTRIAL ESTATES UNDER DIFFERENT CONDITIONS?

This is a complex question to which there can be no precise and definite answer. It will depend on a number of factors, such as the size and extent of the populated area from which it would draw its labour force, the number of firms that have need for relocation on the estate or new ones to be established and the extent of the services which the estate wishes to provide for its member firms. These are only a few of the possible factors which have to be taken into account in determining the optimal size of an industrial estate.

In the case of a large populated area with a large heterogeneous collection of firms, a study should be made whether it is economically and socially desirable to establish one large estate which may mean that the labour force would come from a very wide area or two or three smaller estates suitably located which would impose less problems of workers' travel.

The extent of the services to be provided may also be a decisive factor regarding size. The examples of Ahwaz and Thies show that central workshop services or advisory services cannot be economically organized if there is not a sufficient number of firms on the estate to benefit from them.

The management of the estate may also call for a minimum number of management and administrative staff as well as a suitable number of workshop and laboratory technicians. This would require a suitably large estate so that there would be enough firms to justify the man-power investment.

The size of the estate may be judged by the extent of area covered or by the number of factories with large industries on the estate where there would inevitably be less firms covering a wider area. If these factories are from a single sector e.g. woodworking or metal working firms, then the possibilities of co-operation and the provision of common services appear to be simpler than in the case of a large heterogeneous collection.

A further factor that will enter into this decision is whether or not standard factory buildings are to be erected and offered for rental or in some cases for sale. If such buildings are to be constructed the larger the estate the cheaper they can be built. It is interesting to note that the figures obtained in the studies of the estates in the various countries indicate a wide variation in construction costs, both as regards the provision of infrastructure and the erection of buildings. Even in the case of the 27 estates supported by the Ministry in Turkey that are now operational, there is a wide variation in costs that don't seem to correlate with any set

of factors. It would appear that construction costs are more a result of efficiency and organization in construction than in the design of the estate.

The experience in Pakistan, a country in which there is a comparatively large number of smaller industrial estates, seems to show that a large number of estates spread out, achieve a lower level of occupancy and that it takes longer to fill them with firms. This has led the Government of the Sind Province in Pakistan to establish mini-estates of about two hectares which can be set up in the smaller towns and where it is hoped the occupancy rate will be higher. Such smaller estates may have advantages in that they can provide facilities for very small artisan types of firms and can be located near sparsely populated areas or small towns. There is no reason why such mini-estates cannot in fact be the first phase of larger estates should the demand for factory space grow. On the other hand the experience in Ecuador has shown that a large number of smaller estates spread out all over the country have been ineffective in developing industries in the different provincial towns. The answer again seems to lie in undertaking suitable studies before locating the estates and providing incentives so that estates are part of an overall plan of industrial development.

The sample studied was too small to provide the basis for a full detailed analysis of all the factors involved.

3. IN WHAT CIRCUMSTANCES HAVE INVESTMENTS IN INDUSTRIAL ESTATES PROVED JUSTIFIABLE?

The short answer is surely: "Wherever the objectives aimed at in setting up the estate have been achieved with an input, financial or other, less than would have been needed by any other means." In effect, the benefits, tangible and intangible must justify allocating resources to an industrial estate which could have been used effectively for other purposes or in another way. This cannot apply in Cuba.

It would therefore seem that the circumstances in which investment in industrial estates are justified would be, inter alia:

(1) where they are an effective means of developing entrepreneurs and industries at a very early stage of industrialization, (Thies);

(2) as a means of accelerating industrial development and creating employment under emergency conditions, (Karachi SITE estate, 1948);

(3) where they permit firms to expand their production and increase employment by providing more spacious premises at lower cost than possible elsewhere, (Turkish SSI estates);

(4) where they permit industry to be removed from congested urban areas and these areas to be redeveloped, either at a financial profit or to provide additional amenities to the city's population, (various cities in Turkey);

(5) where they succeed in attracting new industries, including foreign or joint-venture firms, which would not otherwise have come to the region or locality, (Manisa).

In none of the cases noted above does the investment seem excessive in terms of the results obtained. The Government investment at Thies is very modest, even though there is a continuing outlay in running and servicing the estate and the firms. The investment of $ 6,770,000 to establish 700 firms at Karachi works out at only $ 9,672 per firm or about $ 240 per employee, (estimated); (See Chapter II).

At the other end of the spectrum are Cuenca and Ahwaz. According to the manager of the estate company, about $ 1,461,500 has so far been invested at Cuenca without a single firm having entered the estate. A total of $ 3,655,000 has been invested in developing Ahwaz, (combined Government and UN funds) to set up facilities for 15 companies and a maximum of 500 jobs, if the official estimates are accepted. Furthermore, the firms on the estate are not those for which it was originally intended.

Too little has been found out in the present studies about the alternative costs of establishing similar facilities. This should certainly be done if this question is to have a meaningful answer.

CONCLUSION

The above discussion shows that much more needs to be known before these questions can be answered with any degree of certainty.

It does not seem necessary to write any general conclusions to this Report, because the conclusions on the subjects covered have, for the most part, been either incorporated in the various chapters or dealt with as attempts to answer the key questions in this and the preceding chapter. Some of the reports providing the basic material are more complete than others. All of them have some omissions which have only come to light as this Report has been compiled. In any future studies these omissions can be rectified and a much more structured scheme of research can be prepared which should throw light on points at present obscure.

¹ Firms already operating and some with factories in construction. Not all industries are known.

TABLE 17
Industries on selected Industrial Estates

³ One firm works in each of the three trades.

CUBA	ECUADOR	IRAN	SENEGAL	TURKEY	
Holguin Ind.ᴸ Zone	Ibarra Industrial Estate / Tulcan Industrial Estate — I-3 firms, T-2 firms	Ahwaz Industrial Estate 29 Units 15 Firms	Dakar Industrial Estate 9 Firms	Bursa Industrial Estate 550 Units 550 Firms	Manuka Industrial Area 32 Firms ³
Harvester Mfg. Complex 1		Ag. Equipment Mfre ⅓	²	Ag. Equipment Repair, Ag. Equipment Parts, Tractor Repair } 104	Ag. Equipment Mfre 1
Ag. Equipment Mfg. Complex (Antillana) 1			Automobile Repair 1	Automobile Repair, Auto Parts Mfre, Auto Painting } 116	Auto Equipment Mfre 1
Military Tractor Mtnce & Repair Group 1					
		Engineering Products 3		General Engin. Machinery, Engineering Products } 79	Engineering Products 1
				Blacksmiths, Foundries } 3	
		General Metalworking ⅔	General Metalworking (& repairing) 3	General Metalworking 40	General Metal Products 3
	Timber Drying 1			Sawmills & Timber 15	
	Furniture Mfre 1	Furniture Mfre 1	Furniture Mfre 1	Carpenters, Furniture Mfre } 72	
Building Mat. Complex 1		Building Materials 1	Building & Civil Eng. 1		Building Materials 1
Terrazo 1				Tanning, Leather Goods, Chemicals } 5	Tanning, Leather Goods } 1
Ceramic Sanitary Ware 1					Chemicals (Salt) 1
Ceramic Tiles 1					
Concrete Pipes 1					
Pre-fab. Const. Elements 1					
		Plastic Products 3			Plastic Products 2
		Electronic & Electrical ⅓	Electrical & Plumbing 1		Clothing & Footwear 4
Oxygen Prods. 1			Clothing & Footwear 1		
		Papers & Printing 2	Printing 1		
Ice Making 1	Food Processing 1				Food Processing 2
[illegible] 1	Animal Feeds 2	[illegible]		Misc. Artisan Shops 116	Animal Feeds

A P P E N D I X

WHAT WENT WRONG?

Three Cases

1. ECUADOR - CUENCA INDUSTRIAL ESTATE

Everyone involved directly in the early days of the Cuenca project has now moved elsewhere, so that most of the information is from UN reports and interviews with the manager of the Cuenca Industrial Estate Company and others in the city. This makes the historical data rather uncertain.

A rough outline of the Cuenca industrial estate project existed in 1964, when it was brought to the attention of a United Nations mission. At this stage the regional development agency, CREA, was considering a programme to provide more efficient working premises for a few existing co-operatives of artisans. The UN mission advised that the project should embody the promotion of new small-scale enterprises rather than rehouse existing ones.

A second UN expert recommended Cuenca as the most promising site for a demonstration industrial estate and outlined the possibility of financial assistance from the UNDP, (then the Special Fund). By this time 41 hectares of land had been acquired; this was later increased to 67 hectares.

In April, 1965, CENDES produced a project envisaging the development of five hectares and the erection of six standard factories. An agreement had been reached between CENDES and CREA, ratified by the Ministry of Development, whereby the five hectares would be devoted exclusively to the development of small industries and artisans. The Ministry would grant 375,000 sucres for building three factories and 25,000 sucres for infrastructure costs. Immediately thereafter, an inter-organisational committee, assisted by a UN official, prepared an official request to the UN Special Fund. This involved the

improvement of 10 hectares and construction of 30 factories within five years with common service facilities. An area for industries of all sizes and two demonstration plants for processing local raw materials were included.

Major emphasis was placed on:

(a) the philosophy of decentralisation, then being pursued by the Government;

(b) taking advantage of special resources in labour and materials then available in the region; (kaolin and felspar, among others).

(c) capitalising on legal and fiscal incentives available locally;

(d) making use of the prospects of industrial investment, then judged to be good;

(e) fostering the growth of small scale industry to broaden the base of local employment.

At this point the Government seems to have admitted to difficulties in meeting proposed counterpart obligations. A mission from the Special Fund studied the request very closely and rejected the project on the grounds of insufficient industrial potential at Cuenca, while agreeing on the need for technical co-operation. A Government request led to the assignment of a UN expert for three months in 1968, four years after the initial proposals. In spite of the setbacks, regional enthusiasm and confidence remained high, but support from CENDES became half-hearted and the competent Ministry seems to have turned its attention elsewhere.

The Development of the Site

The site of 41 hectares was acquired for 1,850,000 sucres, ($ 71,150 at the present exchange rate). It is accessible, near a main highway and two kilometres away from the city centre. It is not wholly satisfactory, some areas have a high water table. By 1968 an adjacent lot was occupied by three large factories, later joined by two more, one, the municipal slaughterhouse.

Plans were drawn up by local engineers, but the UN expert criticised them as wasting space. After intensive studies he recommended substantial changes to enlarge the area available for production buildings, but the final compromise allowed only a very small increase. By 1968 a fund of 400,000 sucres had been established by the Ministry of Development but no other Government money was made available. No full time manager of the estate had been appointed.

Further UN Recommendations

Another UN expert was sent out to examine the industrial estates programme as part of a larger industrial project in 1972. He examined all the industrial estate projects in the country according to 12 criteria and awarded the highest marks to Cuenca, where he then concentrated his main effort. His recommendation was accepted by the competent authorities. A feasibility study, which he carried out as basis for a five year programme, concluded that the estate should be devoted basically to small industries. 17 hectares should be developed initially with provision for 26 buildings for which demand had been established. 10 basic common services should be established including advisory services, plant maintenance shop and quality control facilities. Plots and buildings would be rented for the first five years and then purchased over the next 15 years. Rentals would be subsidized. A company would be organized to own and administer the estate.

The feasibility study, completed in 1973 with the aid of the expert, envisaged the employment of 600 people with a direct public investment of 32,000,000 sucres, ($ 1,231,000) and a further $1 million by industry. This would have worked out at about $ 2,700 per job.

The present Situation

In November, 1975, when the estate was visited for this study, the following had been implemented:

- a holding and managing company had been established;
- 17 hectares of land had been provided with the necessary infrastructure;
- one show building of the open-sided, metal type on light lattice girders, common in Ecuador, had been erected.

Early in November the estate was formally opened by the President of the Republic with accompanying nation-wide publicity.

On other points policy seems to have changed. No central services have been set up, nor are they envisaged. The plots into which the estate is divided now seem to be about 2,000 m^2, much too large for most small firms. Firms moving on to the estate may rent, rent and buy after three years, or buy at once. It is not clear whether they are required to erect their own buildings, which would be a further departure from the 1973 recommendations. The estate company will accept only manufacturing industry from firms outside the city, foreign or now and firms in the city whose premises will not permit expansion and which are planning to expand. However, the impression was gained that the present manager was only really interested in attracting foreign firms - delegations from Europe and Japan have visited Cuenca and the estate has been advertised in Business Week. The President of the Cuenca Small Industries Association said categorically that in spite of 18 requests from local small firms for places on the estate, one of which has been trying for years, the company seems quite uninterested. Small firms applying are required to submit feasibility studies, financial analyses, sales analyses and the like, which has discouraged most firms. The President said that he felt that Cuenca was still too isolated, in spite of the building of the Pan-American Highway, recently completed, and could see no reason why outside firms should come there. Only one or two outside firms seem to be interested; a Swiss-backed watchmaking firm at

present established locally which wants to expand on to the estate is faced with obstacles in its efforts to do so.

The Causes of the Problem

Some of the reasons for the long lag in development seem to be:

(1) In 1964 the idea was premature. Cuenca was then quite isolated from the main population centres. Local and even national markets before the oil boom were very small. Conditions in the city for small industrialists were not bad and they could see little point in moving to more expensive premises while there were few chances of expansion.

(2) In-depth studies of the various factors involved, especially the socio-cultural ones, were inadequate.

(3) The objectives changed several times without any very convincing reasons.

(4) There seems to have been a loss of interest on the part of all the authorities between about 1960 and 1973. The site had been acquired but nothing further was done.

(5) The emphasis on "manufacturing" industry, also part of National Government policy, to the exclusion of repair shops, etc., narrows the field excessively and inhibits firms which might later go into manufacturing. In Cuenca itself one of the most successful firms started as an auto repair shop and now employs 80 workers making a wide range of heavy machinery, much of it for the construction industry and has an investment of $ 2 million. The policy needs re-thinking.

(6) The minimum plot size should be reduced, if, as is understood, it is 2,000 m^2. The minimum cost at 140 sucres, ($ 5.4) per m^2 is $ 10,800, excessive for a small firm which then has to find the money for the building at a minimum of nine per cent.

(7) The delay in having anything at all to offer, (10 years), must certainly have discouraged many firms which have now built elsewhere. It was stated that "small entrepreneurs were now very sceptical" about the estate.

(8) It may be that in Ecuadorian conditions Government sponsored estates are a mistake. The first viable estates seem likely to be the wood-workers' estate at Quito, the Peguiche estate at Otovalo and the private estates at Guayaquil.

(6) The UN, (later UNIDO), advice and assistance, which has been quite extensive over the years, seems to have been ineffective.1/ The last UNIDO expert was spoken of disparagingly by several national officials. The staff of CENDES still feel the need for assistance on industrial estates, but they are wary of further experts. Only one of the UN experts' reports shows an awareness of Ecuadorian conditions and the need to take them into account.

1/ There was also some US-AID and Peace Corps aid, but nothing is known about this.

2. IRAN - AHWAZ INDUSTRIAL ESTATE

The Ahwaz Industrial Estate was set up as the result of a UN feasibility study in 1962. This study was concerned to identify alternative sites for a demonstration or model estate to help modernize small-scale industries in Iran. Ahwaz, in Khuzestan State, (see Figure 3), was chosen from 17 examined. It has good road and rail connections, is close to a major seaport, can draw water and power from the Pahlavi Dam, has adequate supplies of skilled labour and had "an excellent industrial atmosphere".

Only two local raw materials were identified - bagasse and natural gas - both waste products of local industries. The UN team provided a long list of products suitable for small-scale units, all needing materials either imported from abroad or from elsewhere in Iran. They recommended that the estate be developed in three stages, the first two developing about 46,500 m^2 at each stage, including the construction of factories covering 6,500 m^2 and 15,520 m^2 respectively. The third stage involved developing a further 93,000 m^2, to be filled partially by Government built factories and partly by those built by the firms themselves. The estate was expected to employ about 3,000 workers when completed, as compared with 2,971 workers employed in all the industrial units in Ahwaz in 1956 out of a population of 210,000. Total outlay planned was $ 4.43 million, which would have given a cost per job of $ 1,476. Once established, rents were expected to cover all running costs. Central workshops, if established, should be left to private enterprise.

Work on the estate began in 1963. The only recommendation of the UN experts accepted in the end was that the estate should be at Ahwaz. The five year delay between the feasibility report and starting in production was partly due to difficulties in recruiting a UN technical co-operation team for a project of aid approved by the Government and the UN in 1963. The project document was signed in 1965 and the project manager came on to his post, but

there were serious delays in recruiting experts thereafter. The second cause of delay was due to defaults and defects on the part of the building contractors, which continued till 1969. Contracts for all the firms were signed in 1971.

Buildings and Costs

The estate consists of 24 units, eight each with plot sizes of 260 m^2, 492 m^2 and 1,260 m^2 respectively. Standard factories on the two smaller sized plots are 188 m^2 and 365 m^2 respectively. The total factory space is now 13,272 m^2. The estate has three central workshops, (machine shop, foundry and electroplating shop), guest house, administration building, including a post office, bank, conference room and showroom. There are also a gatehouse, pump house and co-operative shop.

Costs of establishing the estate are detailed in Chapter II and need not be repeated. The total cost was $ 2,655,000 of Government money and about $ 1 million of UN contribution. The overall cost of factory space is thus $ 273 per square metre. Of the total cost about $ 655,000 is taken up by the workshops, administration building, guesthouse and "miscellaneous charges".

Management of the Estate

A resident manager appointed by OSSI and a staff of 83 are responsible for the day to day running of the estate. The management undertakes negotiations with the national authorities on behalf of member firms, covering, among other things, raw material permits. Ahwaz is funded by the central Government. In 1974-75 it had an operating deficit of $ 312,740 after deducting revenue from rents, the guest house and the workshops.

Member Firms

15 firms rent 22 of the 24 units; five firms account for 12 units. Two firms are managed by the estate staff for absentee owners and two large units are occupied by a warehouse. A list

of the industries is given in Table 17. Figures employed are in dispute; official figures are 500, a UN survey says 207. The OSSI believes most workers do two jobs on the estate, one of which is not reported to avoid complications with social insurance. On the official figures, investment per job is $ 7,330, on the UN figures it is $ 17,705. Either way it seems expensive. The firms are larger than the average for the country and the province, contrary to the aims of the estate. The difficulty of interesting local small firms led the administrators to accept any firms willing to come. Many came from Teheran after the ban on industry within 120 kilometres.

One factor discouraging small firms has been the credit system, which demands owned assets, such as buildings, as collateral. A recent OSSI scheme to support small firms without this requirement is available only to firms on the estate, (and presumably not to firms trying to enter the estate, although this is not explicitly stated). The reason for the establishment of a number of Teheran based firms at Ahwaz has been noted above; a third reason for the reluctance of local small firms is the common one that they do not want to leave the downtown bazaar area to relocate on an estate 4.5 kilometres away from customers, suppliers, workers housing and adequate public transport.

The estate has thus contributed little to employment and there has been spin-off in improved amenities to the local community. The Government has recently allotted 27 million rials, ($ 400,000) for a social amenities complex, but this will be available only to the comparatively few workers on the estate.

The Central Workshops

The central workshops were set up against UN advice and were designed and incorporated in the plans before any of the firms arrived, this, without any knowledge of the nature and scale of services which would be required. The UN supplied machinery and advisers, but both were delayed and the workshops became operational

only in 1971. The original objectives of being central facilities and a demonstration unit for small firms have not been achieved. In mid-1975, the electro-plating shop, foundry and pattern shop, (14 workers), were working well below capacity due to lack of orders and raw material. The machine shop, with 19 machines, has only two operators. Some training has been done in the workshops for trainees from outside the estate. The die-making and drop forging sections were not operating and there was little welding.

The workshops have a reputation for high cost, poor quality and late delivery. Most of the income received is from outside. The defects may be summarized as due to poor management, lack of complementarity with firms on the estate, poor pay of workers and inadequate financing of operations.

Shortcomings and Constraints

The consultant making the Iran study attributed the avoidable shortcomings at Ahwaz to:

- lack of coordination with local industrialists in planning estate facilities;
- poor location of the site in Iran and vis-a-vis Ahwaz town;
- weak coordination between Government departments;
- ineffective technical assistance from the UN team;
- poor local management.

The top management of the OSSI are aware that the estate has fallen far short of the original expectations, but the organization has been forced to work under certain constraints in both the past and present.

(1) OSSI is not a free agent in choosing locations for its industrial parks; the decisions are taken by the Government on grounds of regional policies, regardless of the economics.

(2) Industrial estates have been, and to some extent still are, a relatively small component in Iranian industrial policy and not necessarily in line with the main thrust of that policy.

(3) OSSI must work within the existing institutional framework for industry, for example, as regards credits, rather than press for reforms which would make the Ahwaz method of operation easier.

(4) Account must be taken of the tendency to over-staff, (80 on the estate staff at Ahwaz), and underpay in Government agencies.

All these constraints are operating at Ahwaz, but policies and plans for future estates are taking Ahwaz experience into account in an attempt to produce a more realistic and viable programme.

3. TURKEY - THE GAZIANTEP INDUSTRIAL ESTATES[1/]

Gaziantep is a city of nearly 300,000 inhabitants situated near the Syrian frontier in South-Eastern Anatolia. (See Figure 6). It is considered a backward area. The city has a high reputation as a centre of very skilled metalworkers and auto repairers and is said to contain more than 5,000 small industries and artisan shops. Conditions in the quarters of the town where these are located are very congested. This is partly due to the fact that an industrial quarter originally set up outside the town has now been swallowed into the urban zone by the town's rapid growth.

In 1965 a co-operative of small industrialists, mainly auto repairers, was founded in order to set up an industrial estate of 1,100 units outside the town. The Ministry of Industry and Technology decided to use this estate as a pilot project for a small industry development centre to provide extension services to firms on the estate in the form of workshops, laboratories for quality control of raw materials and products, training courses and advisory services. The United Nations Committee for Industrial Development, predecessor of UNIDO, was approached and a project approved by the Government in June 1965. It was, however, not approved by the UN Special Fund Governing Council till June 1968, for reasons which are not known, possibly because the Government did not consider it as high priority as some rival claimants for UN aid. The Plan of Operation was signed in June 1970.

An advance allocation enabled the UN project manager to be in post in 1969, but nothing seems to have happened between 1965 and 1969, apart from the purchase of the land. Action was suspended pending the approval of the UN component of the project.

Between 1968 and 1976 there were four leaders of the UN team, only two of whom were fully fledged project managers. The longest individual stay was three and a half years.

1/ As in the case of Cuenca, almost everyone connected with the early days of the estate has gone elsewhere, which makes historical data difficult to verify.

The Model Estate

As a result of early difficulties on the part of members of the Co-operative in raising funds, in 1971 the Ministry decided to provide the money to construct 50 factories of 800 m^2 each to form a "Model Estate". Unlike the Co-operative Estate, which occupies, with the administration and central facilities buildings, most of the 200 hectares purchased, firms on the Model Estate might rent the buildings at very low rentals or purchase them on special terms, but must be manufacturing industries in the narrow sense of the term and might include new firms. These firms are selected by a committee composed of representatives of the Ministry and of the industrial associations under the chairmanship of the Under-Secretary. There have been nearly fifty applications for places, but the process of selection, based on feasibility studies made by the staff of the Small Industries Development Centre, is very slow. Only 15 firms had been chosen up to November 1975; at this rate it could take about six years to fill the remaining places.

Construction of the Estates

It was decided by the Ministry that the buildings should be made of prefabricated concrete units, a technology not previously used in Turkey. Tenders were received from 16 firms of building contractors and in July 1972, a contract was awarded to a large firm in Eskisehir. Completion of the buildings on the Model Estate was stipulated for July 1974. The same contractor was engaged for the Co-operative Estate.

The contractor failed completely to meet his deadline and early in 1975, when the first cross members for the roofs were set on the pillars, they proved to be too heavy and the pillars collapsed. In November, 1975, when the estate was visited in connection with this study, a number of reinforced pillars had been erected and the first redesigned roof members were in place. It seems unlikely that any buildings on the Model Estate will be ready much before mid-1976 and the Co-operative Estate is even

further behind. The infrastructure is more or less complete, except for the electricity supply, which at present only serves the administration and central workshops. The roads have to be tarmacked.

The Small Industries Development Centre, (KUSGEM)

The buildings of the Centre were taken over incomplete at the end of 1973. It had previously been housed in rented buildings in the city. They comprise offices for the estate administration and the Centre staff, meeting and training rooms, a toolroom equipped with precision machine tools, forging shop, heat treatment shop and metallurgical, foundry sand and chemical laboratories. Most of the machines and equipment have been supplied by UNIDO as part of the technical co-operation project. Total expenditure to date, UN and Government, on equipment is about $ 43,600. The cost of the central buildings is estimated at about $ 364,000, but they are not yet complete. At the time of the consultant's visit, the laboratories were out of action because the concrete around the roof lights had begun to fall in, letting in the rain.

The Centre is staffed with engineers, chemists, economists, finance and marketing specialists. They have been assisted over the last five years by a team of UNIDO experts. Among their most important current duties are the feasibility studies connected with firms applying to join the Model Estate. In the continuing absence of any firms actually on either estate, the Centre staff and their UN counterparts have been providing extension services to members of the Co-operative at their city premises and to some other firms. Training programmes have also been developed over a wide range of subjects, technical and managerial. In the 12 months to March 1975, 225 entrepreneurs attended courses, some of which are over-subscribed. The extension and training activities have achieved a wide degree of acceptance among small industrialists. This augurs well for the time when the firms are finally located on the estate. The success of KUSGEM has led the Government to

set up a National Small Industries Development Centre in Ankara with UNIDO aid, to serve the country as a whole.

There have been serious staffing problems, particularly among the professionals. Gaziantep is considered by many to be the "backwoods" from the point of view of amenities and cultural life. Qualified staff from other parts of the country need special inducements to go there. By February 1975 they felt that the original financial advantages had been eroded by inflation, (19 per cent per annum), but they received no compensatory rises. Both the professional staff and the workers in the shops went on strike. The professionals were forced to return by a court order in April 1975, but the workers stayed out till June. This has left the professional staff bitter and there will certainly be more people leaving. The strike rendered the work of the UNIDO team, then in its last year, more or less ineffective as regards aid to the Centre.

Cost of the Estates to Date

It is very difficult to obtain a reliable picture of the financial provisions and the costs of the two estates and the central facilities. The best available data give the following totals:

Turkish Provisions and Expenditure - Government and Co-operative	$ 16,334,400
UN Expenditure	$ 1,072,784
Total	$ 17,407,184

Of this, about $ 5 million of Government and Co-operative money seems to have been spent so far on land and infrastructure and the central facilities, and an unknown sum on progress payments to the building contractors. In addition, the whole UN contribution has been spent, totalling at least $ 6 million over 10 years without a single production building being completed. On the credit side of the balance sheet, it must be said that the Small Industries Development Centre has proved itself and may be the precursor of a

national service offering very great returns in the long run.

The Causes of the Delays

After reading the various UN reports and discussing the progress of the estates with both national and UN personnel, none of whom has been present during the whole period of the project, the following picture emerges.

(1) The approval of the UN project by the Special Fund Governing Council took three years. The Government, having intervened in 1965 in the original action of the Co-operative, seems to have done nothing further until the arrival of the first UN project manager in 1969. The Ministry seems to have felt unable to proceed without expert guidance, since there was no previous experience of estates of this size. Had the Government not intervened in the way they did at this time, the Co-operative Estate might well have gone ahead normally, albeit on a rather smaller scale or by stages, since not all the members seem to have had all the funds necessary.

(2) Given the financial problems of some of the Co-operative members, the industry associations involved should, perhaps, have insisted on stricter financial qualifications and aimed for a smaller estate.

(3) The cardinal mistake seems to have been the Government decision to use pre-fabricated buildings of a type new to Turkey for the Model Estate in its entirety and for the Co-operative Estate. No contractor in Turkey had any experience of such buildings, whereas many thousands of standard buildings such as may be found on other estates had already been erected and proved. The new and untried technique should have been tested on a very limited number of buildings in the first place until the problems had been overcome and provision made to construct other buildings of normal standard units.

(4) In general there seems to have been lack of adequate supervision of the contractor and poor planning. The whole estate has been laid out and seems to be tackled as a single operation. Its construction by stages, particularly the very large Co-operative Estate, would have permitted the building problems to be better controlled, to have allowed a switch to standard buildings and, at the same time, enabled some of the member firms of the Co-operative to have taken up their places. Progressive entry has been satisfactorily achieved on several other large estates and is sometimes a convenience to the firms concerned.

(5) The UNIDO expert in industrial estates was in post from 1970 to 1972. In the Final Report of the project manager in post during this period it is stated that "he designed the buildings of KUSGEM and factory units on the estate". If this is so, he must take a heavy responsibility for the subsequent failure of the designs and for not having taken action to procure expert assistance to the contractor in the new technique. However, the recent roof collapses in the central buildings suggest that some very poor quality control was involved. This must fall on the shoulders of both the contractor and the Government supervisor.

(6) Although it does not affect the building problems and the most recent group of UN experts seems generally to have given satisfaction on the technical level, there were in the past many problems within the UN team and the Turkish authorities became very disenchanted. Operating a team composed of experts of various nationalities is not easy at the best of times. The rather isolated situation at Gaziantep, difficulties of integrating into local life, (the very big differences in remuneration between UN staff and nationals often inhibit much social mixing), lack of entertainments must have forced families together to an extent which is bound to impose strains and stresses. Single experts were little better off. The fact that they had to work throughout the project without the estate ever being operational certainly did not help.

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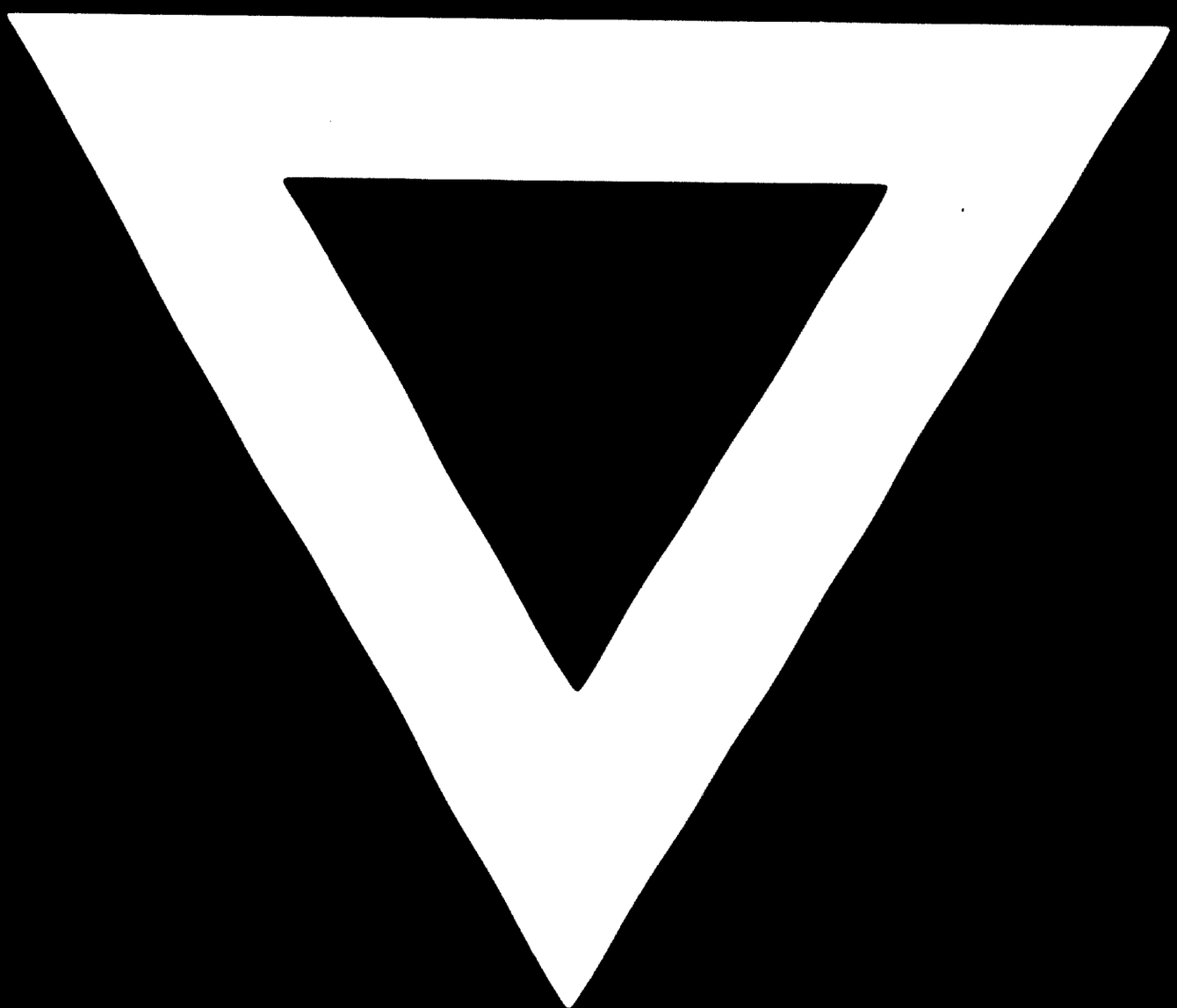

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