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07142



United Nations Industrial Development Organization

Distr.  
LIMITED

ID/WG.231/1  
23 August 1976

ORIGINAL: ENGLISH

Expert Group Meeting on Evaluation of the Effectiveness  
of Industrial Estates in Developing Countries

Vienna, Austria, 13 - 16 December 1976

EVALUATION REPORT ON INDUSTRIAL ESTATES NO. 1 ;  
TURKEY <sup>1/</sup>

by

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<sup>1/</sup> The views and opinions expressed in this paper are those of the consultant and do not necessarily reflect the views of the secretariat of UNIDO or of the Swedish International Development Authority (SIDA), under whose joint auspices the study was undertaken. This document has been reproduced without formal editing.

id.76-4456

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INTRODUCTION

This study of the contribution of industrial estates in Turkey to the nation's industrial development is part of a programme of six such studies undertaken by the United Nations Development Organisation in the autumn of 1975. The programme is financed by the Swedish International Development Agency. The study was carried out by Mr. C.R. Wynne-Roberts, Consultant, during the period 1 - 20 November, 1975.

Many people contributed to the study. Officials of the Ministry of Industry and Technology and industrialists interviewed gave freely of their time and knowledge. The study was supported by Mr. Mehmet Gölhan, at that time Under-Secretary to the Ministry. Special mention must be made of two officials of the Ministry, without whose aid the study would have been impossible. The first is Mr. Aydin Karlıdağ, Director General, Department of Small Industry and Handicrafts whose guidance, resulting from a deep and wide experience in the field, was of the greatest value. The second was Mr. Attila Çoruh, Team Leader, National Small Industries Development Centre, Ankara, who accompanied the consultant on the main tour. No praise can be too high for his organising ability, knowledge, patience and above all, his painstaking and often exhausting interpretation. During this tour the consultant was accompanied by Mr. K.L. Nanjappa, UNIDO project Manager, N.S.I.D.C., whose lifetime's experience of small industries in India and many other parts of the world enabled him to provide valuable insights. The interpreter at Gaziantep was Mr. Ahmet Aydin of the Gaziantep Small Industries Development Centre. His aid was also of great value.

Mr. Nessim Shallon, Resident Representative, UNDP, provided great encouragement and aid in necessary administrative matters. The official at UNIDO Headquarters responsible for the formulation of the project was Mr. Jacob Levitsky, whose guidance and support played an important part in facilitating the work of the consultant. Any omissions or errors in this report are the sole responsibility of the latter.

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SUMMARY OF CONCLUSIONS

1. The Turkish small industry industrial estates programme is beginning to be successful and to make a significant contribution to the country's industrialisation.
2. The return on investment both nationally and to the individual entrepreneurs seems to be satisfactory.
3. The absence of adequate statistics hampers analysis and action.
4. The most important reason for the growing success appears to lie in the character of the entrepreneurs themselves.
5. Government policy over the last 11 years has done much to stimulate the development of industrial estates and guide it into effective channels. It has offered both incentives and safeguards.
6. The executing agency system has proved to be most effective in establishing and operating industrial estates as a channel for official funds and other aid.
7. The Government policies of encouraging existing rather than new entrepreneurs to enter the estates and of permitting the many repair establishments to do so are paying off.
8. The disciplines imposed by the Ministry of Industry and Technology during the setting up of the estates and in the handling of credits have contributed to their stability and growth. The aid and advice of the Department of Small Industry and Handicrafts is playing an important role increasingly in the initial stages.
9. The country is at present in a fairly early stage of industrialisation in which small industry has an important role to play. This is favoured by certain local factors, but it must be expected that industry will tend to evolve into larger units.

10. Industrial estates may be expected to accelerate this evolution and there are signs that they are doing so. Many of the small firms will be absorbed in the process.
11. The proximity of firms in the same and related trades on the estates is stimulating inter-estate contracting. This may offer some of the smaller firms a longer lease of life.
12. Large firms in Turkey seem rather self-sufficient. More could be done to use the capacities of small firms. This should be taken into account when planning new major industries, especially in the engineering field.
13. The under-utilisation of machinery, especially machine tools, is still widespread and represents a serious drain on foreign exchange resources. The industrial estates can make it easier for the Government to determine the extent of under-utilisation and introduce policies to intensify capacity-sharing and, if necessary, tighten up on import licences.
14. Common facilities on the estates visited are not yet much developed.
15. There is a very great need for extension services to provide assistance and advice in both technological and managerial fields.
16. The Gaziantep Centre is proving successful in the city's small industries and its aid is increasingly sought. Similar centres need to be set up in other major industrial cities. The problem of financing may possibly be partially resolved by some form of levy or contributing scheme.
17. The selection of field staff needs special care. Practical men who can empathise with small industrialists and help them in practical ways should be selected, with a back up service staffed with graduates.
18. Entrepreneurs on industrial estates could do more for themselves in initiating training and technical services.

19. There are great variations in the time taken to launch estates which in many cases seems still too long.
20. The possibility of obtaining financing for capital equipment purchases and working capital needs through the formation of producers' cooperatives does not seem to be sufficiently widely known.
21. Working conditions on the industrial estates are for the most part very poor. More attention needs to be paid to safety, and a start might be made by providing protective clothing, particularly goggles and gloves, compulsory where processes requiring them are used.



1. THE NATIONAL BACKGROUND

1. Basic Statistics

Area <sup>1</sup>		767,935 sq.km.
Population (1975 Census) <sup>1</sup>		40,300,000
G.N.P. (1974) <sup>1</sup>	U.S. \$	35,900,000,000
G.N.P. per capita (1974) <sup>1</sup>	" \$	893
*Growth Rate (1975) <sup>1</sup>	" %	7.4 per cent
Imports (1974) <sup>2</sup> c.i.f.	" \$	3,777,680,000
Exports (1974) <sup>2</sup> f.o.b.	" \$	1,532,200,000
Workers' Remittances (1975) <sup>1</sup>	" \$	1,000,000,000 plus
<u>Imports</u> <sup>2</sup> Investment Goods	" \$	1,289,000,000
Raw Materials	" \$	2,331,500,000
Consumer Goods	" \$	157,100,000
<u>Exports</u> <sup>2</sup> Agricultural Prods	" \$	851,800,000
Mining & Quarry Prods	" \$	84,700,000
Industrial Prods	" \$	595,700,000
Insured Workers (1974) <sup>2</sup>		1,800,000
Non-Agric. Employment (1972) <sup>2</sup>		1,141,000
of which manufact. empl.		553,000

\* Official estimate

Exchange Rate U.S. \$ 1 = TL 14 (1974)

2. General Information

Apart from the small European province of Thrace, Turkey lies in Asia, an approximate rectangle roughly 1,500 kilometers long and 500 kilometers wide. This is Anatolia. It is bounded on the north by the Black Sea, in the West by the Sea of Marmora and the Aegean Sea and on the south for about half its length by the Mediterranean. The rest of the southern part has frontiers with Syria and Iraq, while the eastern end is bounded by Iran and the U.S.S.R. The south coast has a Mediterranean climate, but the centre of the country is a plateau with an average height of around 1,000 metres, hot in summer and cold in winter. It is bounded in the south by the Taurus mountains, rising in places to over 2,000 metres. Eastern Anatolia is mountainous, rising to 3,000 metres and above.

The central plateau is a huge wheat growing area, cultivated by modern mechanised methods. Western and south western Anatolia produce sugar beet, citrus fruits, grapes and hazelnuts, the fruits and nuts being the country's principal agricultural exports. The south also grows cotton, an important export, and rice.

<sup>1</sup> "Turkey" Financial Times, London, December 19, 1975. pp 9-13

<sup>2</sup> Türkiye İş Bankası: Review of Economic Conditions, 1973/5, Ankara.

The per capita income varies greatly throughout the country. The principal cities, the west and south west are well above the national average, while Eastern Anatolia has parts where the income is less than U.S. \$ 200 per capita and per annum. There are, however, patches of poverty even in the great cities.

Although there are minorities in the cities and particularly in Eastern Anatolia, the population is fairly homogeneous. The mass of the people are Moslems, in the countryside and in certain cities, very conservative. Comparatively few women work in industry and although the wearing of the veil was banned by Ataturk in the 1920s, many women in the smaller towns and in the country still cover themselves in the presence of men.

The principal cities are<sup>1</sup>

Ankara (Capital)	1,209,000 inhabitants
Istanbul	2,248,000 "
Izmir	522,000 "
Adana	352,000 "

Figures are from the 1970 Census, since detailed figures from the 1975 census have not yet been released. There is reason to suppose that the main cities have grown by at least 25 per cent since 1970. The major industrial cities are Istanbul, Izmir, Adana and Bursa.

### 3. The Industrial Background

The last three or four years have seen a sharp rise in level of industrial activity and the rate of industrialisation. In spite of the influence of the recession in Western Europe on the country's economy, the State Planning Organisation estimates industrial growth in 1975 at 7.6 per cent. In 1974 it was 9.4 per cent.<sup>2</sup> The Prime Minister recently stated that 26 new heavy industry projects are due to be implemented in 1976. These include heavy construction machinery, factory equipment, heavy diesel and petrol engines, gears and transmission assemblies, machine tools, hydro and steam turbines, steam boilers, transformers, equipment for transmission lines, electronic equipment, shipyards, aircraft and four iron and steel making projects.

<sup>1</sup> The Economist Diary - 1972, London. The Economist Newspaper Ltd. 1972

<sup>2</sup> Financial Times, op.cit. p.12

Table 1 shows some basic figures for industry in 1970. According to these, the total number of industrial establishments in 1970 was 174,538. The figure is made up of 4,415 establishments classes by the State Institute of Statistics as "large and medium", (with 10 or more persons engaged), and 170,123 firms classified as "small scale industries".<sup>1</sup> It is unfortunate that details of the large and medium sized undertakings similar to those given for the small ones are not available, since Part I of this Census has never been published.

A problem is immediately posed by the fact that the definitions of "small scale industry" of the State Institute of Statistics and the Ministry of Industry and Technology differ. The definition of the Institute of Statistics is that given above; the Ministry definition is "a manufacturing establishment with power equipment to a value of not greater than TL 5,000,000. (U.S. \$ 333,333 at current exchange rate of U.S. \$ 1 = TL 15)". On this basis many of the firms included in the large and medium industry figures in Table 1 should be classed as small industry establishments. At the other end of the scale, the Census states that 114,920 establishments had no power.<sup>2</sup>

The average earnings of employees in 1970 is given as 541,726, while the I<sup>9</sup> Bank figures quoted for manufacturing employment in 1972 are 553,000, an increase of less than 12,000 in two years, (2.2 per cent), which seems far too small on the face of it. These discrepancies are a fair example of the difficulties in obtaining consistent data and suggest that most of the statistical data in this report should be treated with reserve. The research worker was informed by officials of the Ministry and was later able to see for himself that a high proportion of the workers employed in small firms is made up of boys. As much as 70 per cent was suggested as a figure in some cases. The primary school leaving age in Turkey is 12 years and the minimum age for full time employment is 15, but many of the boys seen in the course of visits looked very young, certainly below the official employment age. These boys are not insured and would not therefore be shown in any official statistics of employment. In fact, there is good reason to believe that their existence as workers is often concealed.

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<sup>1</sup> "Persons engaged" include all persons not paid regular salaries, such as family members, and not insured.

<sup>2</sup> Census 1970, op.cit. Table IV, p.19

TABLE I  
Manufacturing Industry - Some Characteristics of Industrial Establishments Group according to Numbers engaged per Establishment - 1970<sup>1</sup>

Numbers engaged per Establishment	Number of Establishments	Annual Average of Employees	Annual Average of Persons engaged	Annual Wages & Subsidies paid	Capacity of Equipment (end of year)	Gross Addition to Fixed Assets during Year	Input	Output	Value added
Persons	No.	No.	No.	Value TL ('000)	H.P.	Value TL ('000)	Value TL ('000)	Value TL ('000)	Value TL ('000)
All Establishments	174,538	541,726	774,209	6,922,308	3,551,692	3,687,567	37,790,722	61,757,678	23,966,951
10 & over <sup>2</sup>	4,415	443,401	449,301	6,267,994	3,125,063	3,450,817	29,686,263	50,002,918	20,216,555
Small Industries Total	170,123	98,326	324,908	554,314	426,629	206,751	8,104,457	11,754,860	3,650,396
5-9 <sup>1</sup>	7,701	30,940	47,160	201,069	60,822	57,271	2,076,058	2,798,954	722,897
4-3	28,732	42,001	95,465	219,736	127,084	76,108	2,662,234	3,685,487	1,023,251
2	46,803	21,753	94,023	109,675	122,294	41,456	1,676,639	2,570,831	594,190
1	86,887	3,631	88,259	23,834	113,429	38,005	1,689,523	2,659,578	1,010,055

<sup>1</sup> The figures for establishments with less than 10 persons engaged have been compiled from State Institute of Statistics: 1970 Census of Industry & Business Establishments, Manufacturing Industry. II. Small Scale Manufacturing Industries, Ankara, 1974, Table III p.13.

<sup>2</sup> Supplied by the Ministry of Industry & Technology. Part I of the 1970 Census has not yet been published. This covers establishments with 10 or more persons engaged, which fall into the State Institute of Statistics category of "medium & large industries".

4. The Contribution of Small Industry

In addition to the statistics discussed, Table I provides data which, subject to the reserves already expressed, gives some indication of the contribution which small industry makes to the national economy.

From Table I it can be seen that in 1970 the number of persons engaged in small industries was 324,908, 42 per cent of the total number engaged. However, they provided only 19 per cent of the total output and 15 per cent of the value added. Only 5.6 per cent of the gross additions to fixed assets was made in the small industry sector.

The productivity and investment per worker can be derived from Table I. The output per worker in large and medium industry proves to be TL 111,364 (U.S. \$ 7,424) per annum and the value added is TL 45,000 (U.S. \$ 3,000). The additional capital assets per worker acquired in the course of the year were TL 7,752 (U.S. \$ 516). For small industry as a whole the comparable figures are TL 36,168, TL 11,235 and TL 636. Unfortunately, no figures exist which would enable such an analysis to be done for firms on industrial estates. It might be attempted in order to obtain some indicative values if Part I of the Census were available.

5. The Turkish Small Industrialist and Worker

The term "industrialist" as used in Turkey would probably not be applied to the majority of small entrepreneurs in Western Europe: "independent artisan" or "craftsman" might be a better term, at least for the 86,887 establishments composed of one person and even, perhaps for those 28,732 establishments reported as consisting of three persons. Nor would it normally be applied to activities such as automobile repair, which would be ranked under "services" and not "manufacturing". However, no general category for services is included in the breakdown of industries in the Economic Indicators of the Türkiye İş Bankası.<sup>1</sup>

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<sup>1</sup> Op. cit.

Those met with in the course of visits to the industrial estates were not quite typical of the whole population of small industrialists in the sense that the industrial estates seen, excluding the medium industry estate at Manisa, contained a very high proportion of members in the metal trade, general machining, metal working, forges and foundries, auto and agricultural machinery repairing.

The typical owner of such units is a self-made man. Only two or three of the 40 or so persons encountered had much formal education above primary level, although many had later done specialist training courses in their trades. Those who had had further education were generally technical high school graduates, a level between the secondary school and the university graduate. Only one proprietor was met who was himself a university trained engineer: others had brothers or sons who had graduated.

Some had worked in larger firms where they had received more or less structured training but the impression was gained that most had themselves started as boys in craftsmen's shops and learned more or less haphazardly on the job, as many boys were seen to be doing. Their knowledge was pragmatic and some, at least, must have had difficulties in reading drawings. About four were met who had been working in Germany, although many returned workers have set up businesses in industrial estates. One at least had been trained in the Army and his workshop was impeccably clean and well-organised, although he claimed that this was not really due to his army training.

One characteristic which was reported everywhere and which most of those encountered had in common was a willingness to tackle almost any job within their fields. Everywhere small firms had developed and were manufacturing and selling products which they had copied from foreign machines or which they had decided to make because they felt there was a market for them, even if they had never dealt with such machines before. Such men were found both on and off the estates. In many cases they had introduced into the original designs improvements of their own. Some examples which were seen and discussed with their makers are described briefly in the notes attached to each visit report in the Appendices to this paper.

They included:

- a standard power loom - built by a small general engineer on the suggestion of a friend and selling well. (Polatli)
- an improved seed drill - for which the investor was paid TL 60,000 by a representative of UNSAID who said it would be manufactured in the United States. (Polatli)
- a d.s. brake boring machine - exhibited in Izmir, this machine was awarded a certificate by the Halk Bank (Izmir)
- a spot welding machine - copied from various foreign models by a technical high school graduate. Selling at 50 per month. (Konya)
- an improved plough for operation with tractors - Three brothers developed the plough: they have been offered very large contracts from Iran and are moving to larger premises (Aydin)
- an improved circular metal saw - made in a cave and exported (Gaziantep)
- an improved slotting machine for joints in wood - The Gaziantep Technical Centre is helping to find financing for production. (Gaziantep)

Apart from these major and sometimes sophisticated developments, many of the small firms seen had embarked upon a high class of work in fields with which they were previously unfamiliar. Quite a number had been accepted by major firms such as Fiat, Renault, John Deere as producers of spares bearing the companies' labels. Of course, it is only natural that the visitors tended to be shown the firms of which the Chairmen of the estates were proudest. Nevertheless, all the evidence seemed to point to a high degree of skill and enterprise generally and, above all, an extraordinary amount of self-confidence in their abilities to tackle any sort of job. The city of Gaziantep in south eastern Anatolia has a special reputation in this respect. The small engineers and metalworkers there are said to claim that they have only to be allowed access to a machine to be able to reproduce it accurately. Several firms visited had built machines for their own uses, including lathes and in one case a very large friction driven press for hot stamping auto valves. It was seen in operation and appeared to be working well. One would perhaps need to enquire into such things as the qualities of the steels used - whether these were the same as in the originals or of lesser specification, which seems likely in some cases - and how the tolerances were arrived at.<sup>1</sup> A gear manufacturer who was making spare parts for various makes of automobile was copying the original components. He assured us that his gears were made to specific tolerances, but where he got these from it was not possible to find out. He was not using drawings.

<sup>1</sup> One of the main functions of the Metallurgical Laboratory at the Small Industries Development Centre at Gaziantep (see Appendix III B.2.) is to ensure a better understanding of steels.

Another feature of the small Turkish entrepreneur is that he is prepared to make almost any sacrifice to obtain the funds necessary to set up his own business. Those working in Europe, especially Germany and Holland, seem prepared to put up with conditions over a period of years which to almost any European worker would be completely intolerable. Living sometimes three or four in a room and often bringing their basic foodstuffs back with them from Turkey when they have been there on leave, they live lives of almost complete isolation within the countries and communities in which they are working. Problems of language (the structure of Turkish is wholly unlike that of any West European language, making it much more difficult for the uneducated man to pick up - say - German, than for a Spaniard to pick up French), and differences in religion and culture all go to emphasize this isolation. The Turkish worker goes abroad to earn as much money as he can and to bring as much as possible back to Turkey intact in order to ensure his own and his family's future and in this he is entirely single-minded.<sup>1</sup>

While in Germany or Holland, the future small industrialist seems to be continuously on the lookout for ideas and information which will be useful to him when he goes home to set up his own business. Most Turkish workers abroad are doing the less skilled work in industry and average wages in Germany are probably not much more than DM 1,000 per month. The price of a new lathe, for example, may be anything from DM 13,000 (TL 75,000) upwards. Many machines worth twice this sum were seen in small workshops.<sup>2</sup> Yet many of the small industrialists bring back machines with them from abroad and have to pay import duties of up to 200 per cent ad valorem on them. The sacrifices needed to achieve this can only be imagined, especially when it is borne in mind that those who have become members of industrial estate cooperatives before leaving must maintain their membership fees and their contributions to the repayments on the loans taken out for the buildings and infrastructures, which may be important sums. Indeed, the observer is puzzled that those who have never left the country have been able to raise very large sums for the purchase of plant and equipment. In many of the workshops visited an investment in production machines of 2 - 3 million TL (U.S. \$ 133,333. - U.S. \$ 200,000 at current rates, which in fact represents much more inside the country) was quite usual. Some of the owners said that these had been raised entirely from their own funds, although many others had heavy bank loans. It may be noted in passing

<sup>1</sup> Of course, not every Turkish worker who goes to Western Europe is such a model of single-mindedness. Those discussed here are the potential entrepreneurs, maybe 5 - 10 per cent of the population in any country.

<sup>2</sup> The import of second hand machines is forbidden.



that there was a lot of under-utilisation of machinery; from both the personal and national points of view satisfactory arrangements for cooperation within industrial estates are a high priority.

With one very notable exception, where one could have "eaten one's dinner off the floor", the housekeeping in the workshops visited ranged from poor to very poor and the working conditions, even on the estates, were unsatisfactory.<sup>1</sup> Safety measures of any kind were non-existent; presumably the workers, including the boy labour, are expected to look after themselves. It was noted, for example, that the "home made" valve press mentioned above could be operated by a single handle. It is usual in this type of machine to have two handles, both of which have to be depressed before the machine will operate in order to ensure that both hands are out of danger when the press comes down.

It is understood that woodworking shops and spray painting shops on the estates are normally fitted with appropriate exhaust systems, but none were visited. No protective clothing of any kind was seen, not even goggles for hand grinding operations. However, bad as conditions may be in some of the workshops on the estates, they are a paradise compared to those which the industrialists have left in the cities. (See below)

It was noted earlier during the discussion on numbers employed that a high percentage of the workers in the small workshops are boys, some of whom certainly seem to be under the legal age for employment. This appears to be winked at by the authorities, although it was suggested to the research worker that one reason, possibly secondary, for the Government's support of the industrial estates is that conditions of employment, and the employment of young persons are more easily controllable on the estates than when the workshops are in the cities.

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<sup>1</sup> The average small industry workshop in any country, with the exception perhaps of Germany and Switzerland, is likely to be rather a mess.

The small industrialist likes to use boys as much as possible: first, because they are paid low wages and second, because they do not have to be insured, representing a further saving. The point has been made, with justice, that these boys are receiving training for skilled trades. One would like to feel that this training was structured, but the impression is strong that it depends entirely on the capacity and goodwill of the industrialist himself and his senior workers. Certainly these boys seem to work hard (maybe because the boss was taking round visitors), and many were working complex machines with apparent efficiency and confidence. Indeed, it is striking to the visitor from Western Europe to see a boy who appears to be about 12 years old operating a universal milling machine with a dividing head at a tempo which would do credit to an adult skilled worker.

The picture of the Turkish small industrialist which emerges is one of a man of great natural skill and determination, a craftsman who is prepared to work very hard himself to achieve his ends and to have those working for him work equally hard. The owner is normally working in the shops alongside his employees and is sometimes indistinguishable from them except, perhaps, for a certain poise. However, the ordinary Turkish worker does not appear to be oppressed: it is not in his temperament and there seemed to be very democratic relations between masters and men - and even the boys.<sup>1</sup> His personal life, inside or outside the country, is very modest, although it was noted that some of the owners visited who were working in their shops had very nice new cars.

It is to be expected that the Turkish entrepreneur suffers from some of the limitations to be found among skilled and dedicated craftsmen everywhere and which begin to show as they succeed in building up their firms to the point where they are unable to control everything themselves. Often imaginative and innovative in their technical fields, they know little of management, especially financial management and marketing or of the organisation of production once it has passed the artisanal level. They need a lot of help in these areas, but first of all they have to be convinced that anything which is not a technical improvement will contribute to the better performance of their firms.

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<sup>1</sup> In one shop visited a boy working a process wanted to get more workpieces but was prevented by the crush of visitors. He became very angry with one of the men who told him to wait till the visitors had gone.

6. The Workshops in the Cities

All the small industrialists met with joined cooperatives to set up industrial estates because operating conditions in their workshops in the cities became intolerable and they found the growth of their businesses hampered by cramped premises and the impossibility of expansion where they were. In every case they had expanded their productive capacities and volume of business very considerably since moving into their new premises, often by as much as 200 per cent.

Several industrial areas within the cities were visited, notably at Gaziantep, Poiatli (where conditions were much above average), and Izmir, where some of the workshops were right in the middle of the better residential quarters. In other towns the workshop quarters were observed while driving through.

As a general rule conditions were terrible. Machine shops were set up in premises so confined that it was awkward to walk between the machines without the operators stepping aside and the movement of materials was very difficult. Spray painting was being carried out in very cramped premises with no form of exhaust. In Gaziantep three firms (two potteries and one large foundry) were operating in caves. The successful exporter of circular saws working in a cave has already been mentioned. In fact these caves were quite roomy and the temperatures were even - cool in summer and not excessively cold in winter - and the conditions were very much better than in some of the shacks and basements in which production was being carried on in back streets. Lighting generally was very poor.

One of the reasons already cited for the municipal authorities and the Government wishing to encourage industrial estates is the traffic congestion caused in the industrial areas which are often on main traffic routes. In the absence of adequate space indoors, much work is carried out outside on the sidewalks. Since auto, tractor and agricultural machinery repair forms such an important proportion of the work of the small firms, cars, trucks and agricultural machinery tend to be parked on the sidewalks and in the roads, often restricting the passage of through traffic to a single line, negotiated with difficulty. The movement of vehicles in and out of the workshops and parking places can hold up traffic for minutes at a time: since it is going on at frequent intervals, the congestion may be imagined.

Hardly any of the premises have even elementary toilet facilities. One industrialist said that he was delighted to move out to the estate because his boys had to use the public toilet facilities of the town and this gave them a good excuse to absent themselves for 15 to 20 minutes at a time !

Once the industrialists have moved out to the estates, the former premises are either destroyed, if they are one storey buildings or converted to retail shops or similar uses if they are on the ground floors of large buildings. In any case, no other manufacturing industry (including repairs) is allowed to move in. Should anyone try to do so, the municipality denies him electricity and water. This treatment is also used to encourage such firms who are slow in moving to the estates once their premises there are ready for occupation.

#### 7. The Small Industry Associations and Unions

Small industry in Turkey is grouped in organisations according to trades.

The smallest unit is the union which is composed of a single sub-branch of an industry, such as auto electricians or safe makers. These unions are grouped into associations, such as the Metalworkers' Association or the Association of Auto Repairers, the latter embracing all branches of auto repair specialists. (See below). These are both at municipal or district level.

Still at the municipal level is the Chamber of Commerce and Industry which unites the representatives of the Associations and their component unions.

At the national level the Turkish Confederation of Artisans and Tradesmen represents the interests of its members.

In Gaziantep the research worker had the opportunity to visit the Chamber of Commerce and Industry and two associations, the Metalworkers' Association and the Auto Repairers' Association.

(a) Chamber of Commerce and Industry - The Chairman of the Chamber of Commerce and Industry said that in Gaziantep<sup>1</sup> there were some 5,000 small industries and craftsmen with about 250 medium and large industries. The total numbers employed in the small industry sector was between 20,000 and 25,000 with an average of 4 - 5 workers per establishment, including the owners and family members.

<sup>1</sup> Gaziantep is a city around 300,000 inhabitants in S.E. Anatolia, 35 km. from the Syrian border. (See map. Figure I)

The Chamber of Commerce and Industry is mainly concerned with promoting the products of its members which include:

- trying to obtain orders, including sub-contracts, from other areas;
- exhibitions of local products both locally and in other cities;
- helping to obtain import licences and quotas. The office collects requests and consolidates them and establishes quotas;
- helping the producers' cooperatives;
- in general, doing everything possible to promote local commerce and industry by representation to the national authorities and making its products and facilities known inside and outside the region.

The Gaziantep Chamber of Commerce and Industry includes in its membership firms in the following fields:<sup>1</sup>

auto repairers (all branches)	Blacksmiths and forges
general metal machining	furniture manufacturers
metal pressing	food industries <sup>2</sup>
coppersmiths	plastic footwear
sheet metal industries	carpet & rug making
safemakers	
foundries	

The Chamber of Commerce and Industry organises the provision of technical and vocational training facilities according to demand. Some 17 programmes are currently being developed as evening courses by the Technical University. In the past, boys have been exclusively trained on the job, the effectiveness of which in practice depends upon the abilities and willingness of owners and adult craftsmen to transmit their knowledge. Industrialists in Gaziantep are slowly beginning to understand the need for more structured and formal training for their workers and are starting to support the technical training programmes. There is still much educational work to be done in this direction. A programme is given at the local College of Commerce in financial management, but so far few industrialists have attended.

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<sup>1</sup> The Papers for the Review Mission issued by the Small Industries Development Centre, Gaziantep, on the occasion of the Mid-Term Review by UNDP and UNIDO lists the numbers of units engaged in the various branches and sub-branches of small industries in Gaziantep.

<sup>2</sup> 40 medium sized factories are making plastic footwear.

(b) The Metalworkers' Association - The Gaziantep Metalworkers' Association has 685 members, most of whom operate with 3 - 4 workers. The types of industry, each of which forms a union, of the membership are:

<u>Union</u>	<u>Average No. of workers</u>
Stoves for wood and coal	3 - 7
Blacksmiths <sup>1</sup>	3 - 4
Metal door & window frame makers	4 - 6
Knife makers	2 - 3
Foundries	5 -20 Av. about 10
Tin can makers & metal printers (1 each)	2 - 5
Safe makers (41 firms)	4 -12
Sheet metal workers	7 -15

The work of the Association on behalf of its members consists broadly in

- transmitting knowledge of and interpreting legal requirements and procedures to its members;
- appraising raw material demands, consolidating them and submitting applications to the Ministry of Industry;
- assisting in obtaining loans from the Halk Bank. Membership of the Association is essential for favourable consideration unless the applicant has mortgageable assets;
- disseminating new technical ideas and knowledge to members.

The monthly subscription is TL 5 (U.S. \$ 33) which makes a total monthly revenue of TL 3425 (\$ 228) out of which rent, services, cleaning and upkeep of the offices have to be paid and, presumably, part or all of the Director's salary and expenses. The office is pathetically shabby and the furniture is very old. They do not even possess a duplicating machine for circulars. One is bound to ask whether a contribution of, say, TL 15 (\$ 1) per month would not be well within the capacity of the members to pay, which would bring in a revenue of TL 10,275 (\$ 685) per month. This would enable the Association to do a much more effective job and would, in the end, be of profit to the members.

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<sup>1</sup> The term "blacksmith" seems to include repair of agricultural machinery and equipment and forges.

(c) The Automobile Repairers' Association - the total membership of this Association is 878, divided into unions as follows: <sup>1</sup>

Engines  
Transmissions  
Auto electrical units  
Wheels and tyres  
Body building  
Painting  
Upholstery  
Springs  
Brakes

And any other aspects of auto repair and rebuilding. There is almost complete specialisation among the members, most of whom will move to the Gaziantep Cooperative Estate, <sup>2</sup> However, one group hesitated about going for fear of losing customers and by the time they had become persuaded that this would not be the case, all the places on the Estate were taken. The Gaziantep Municipality will take drastic action (See above) if any new entrepreneur tries to take over vacated premises. <sup>3</sup>

The role of the Association vis-a-vis its members is the same as the Metalworkers' Association. It is not known what the monthly subscription is, but the offices look a little more prosperous than those of the Metalworkers'.

(d) The Turkish Confederation of Artisans and Tradesmen - Owing to shortage of time the research worker did not have the opportunity to visit the Confederation. Its role appears to be largely political, that is, representation of its members at national level, especially with Ministries, and in influencing legislation. The President is himself a Member of Parliament.

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<sup>1</sup> It is not certain that this list is exhaustive. The visit had to be cut short owing to pressure of time.

<sup>2</sup> See Appendix III Report B.3.

<sup>3</sup> The fear of these small men is in some ways understandable. The auto repair quarter in Gaziantep is right in the middle of the town and easily accessible to clients, apart from the traffic congestion it causes. The new estate is about 6 km. out of the town, right in the country.

## II. INDUSTRIAL ESTATES

### 1. The Place of Industrial Estates in the overall industrial Scene

The statistics and data relating to industrial estates given in this Section refer only to those sponsored by the Department of Small Industry and Handicrafts of the Ministry of Industry and Technology, because this study was carried out under the auspices of this Department. Large and medium industry estates, (known as "industrial areas" or "industrial districts"), are the responsibility of another Department, which limited time made it impossible to contact.<sup>1</sup> Only one district was visited (See Appendix III, Report A.7.). This was the Manisa Industrial District. Data on it was provided by the Director. It is understood that there are two such areas in operation, (Bursa and Manisa, the latter partially), four under construction, (a further district at Konya seems partly operational, see Appendix III, Report A.3.), and 10 in the project planning stage.

The number of industrial estates for small industries officially listed are:

<u>Status</u>	<u>No. of Estates</u>	<u>No. of Units</u>	<u>Source of Data</u>
Operational (Table 2) <sup>2</sup>	27	5,762	Dept. of S.I.
Under Construction (Table 3)	39	12,948	Dept. of S.I.
Under Consideration	13	N.A.	" " "
			(Verbal) <sup>3</sup>

Estates not seeking Government credits are not recorded in the official lists. Six such estates were found at Konya, (Appendix III, Report A.3.) and there must be others. Of the Konya Estates one, with 372 units is operational and five, with 1,995 units, are under construction, bringing the totals of estates operational and under construction known to the research worker to 28 and 44 respectively, embodying 6,134 and 14,834 units.

<sup>1</sup> The difference between an industrial estate and an industrial area or district seems to be that in the former standardised buildings are provided into which firms can move immediately they are completed. Areas or districts provide the infrastructure and central facilities but sell plots of land on which firms build to their own requirements.

<sup>2</sup> Some estates listed as under construction already have units in operation (Akschir, Konya-Karatay).

<sup>3</sup> Dept. of Small Industry figure.



It is very difficult to make a meaningful estimate of the contribution which industrial estates are making either to industrial growth or to employment, if only because no complete set of statistics is available for any one year and the rate of change is high. From discussions with cooperative chairmen and estate directors it would seem as if the average firm has doubled its output and the numbers employed in five years, (some of those seen within two or three years), offering a growth rate of about 20 per cent per annum, more than double the national industrial average quoted above.

In the estates visited, persons engaged seemed to average 5 - 6 per unit, but it is not known how many of these were insured workers and how many were boys. It can be seen from the visit reports in Appendix III that most of the firms visited were, in fact, larger - sometimes much larger. An average of four insured persons might be realistic. Most of the estates visited were in the wealthier parts of the country and those in the poorer parts, such as eastern Anatolia, where there are as yet few operational estates, probably have a lower average.

The national average of persons engaged per unit for small industries given in the 1970 Census works out at 1.9. However, from the total of 170,123 units registered, 114,920 firms not using power ought to be deducted, since they are not small industries within the Ministry definition and few are likely to be in industrial estates today.<sup>1</sup> This leaves 55,203 power users. It may be noted that, according to Table III in the Census, 86,887 firms in which only one person is engaged used 113,428 HP, giving an average of 1.3 per firm. The horsepower per firm rises with the numbers engaged per unit as follows:

<u>Persons engaged per Unit</u>	<u>No. of units</u>	<u>Total Horsepower</u>	<u>Horsepower per Unit</u>
1	86,667	113,429	1.3
2	46,803	122,294	2.6
3-4	28,732	127,084	4.4
5-9	7,701	63,822	8.3

It is reasonable to suppose that the bulk of units without power equipment are in the 1 and 2 "persons engaged" categories, so that the national average of persons engaged in power using firms may be around 3 - 4, which tallies with the figures given by the Director of the Metalworkers' Association at Gaziantep.<sup>2</sup>

<sup>1</sup> Census, 1970. Table IV, p.19

<sup>2</sup> Section I, p. 17.

TABLE 2

Completed Industrial Estates aided by the Ministry of Industry & Technology -  
November 1975<sup>1</sup>

	Town	Population (1970)	Executing Agency	Action <sup>2</sup> Started	Estate <sup>3</sup> Operating	No. of Units	Cost of	Cost per	Government
							Buildings	Unit	Credit Assigned
							TL	TL	TL
1	Adapazarı	101,233	Cooperative	1967	1972	100	2,623,064	26,231	900,000
2	Akyon	53,497	Municipality	1968	1972	343	18,884,243	55,056	11,300,500
3	Akhisar	48,736	"	1965	1972	50	3,137,809	62,756	1,894,700
4	Antalya	95,616	Cooperative	1964	1972	528	19,741,800	37,389	11,500,000
5	Aydın	50,566	"	1966	1969	527	19,985,992	37,992	7,996,000
6	Bozüyük	13,307	"	1967	1969	32	1,637,380	43,088	818,690
7	Cayhan	51,183	"	1967	1973	293	12,572,000	42,907	7,269,600
8	Demirci	13,007	Municipality	1966	1969	50	1,002,000	20,040	400,000
9	Develi	15,553	Cooperative	1964	1970	86	2,000,000	26,256	1,300,000
10	Erzincan	58,362	"	1967	1970	56	2,920,332	33,937	1,483,000
11	Erzincan	58,362	Municipality	1964	1967	51	842,816	16,525	421,408
12	Gerde	7,536	Cooperative	1967	1972	82	6,012,586	73,324	1,860,000
13	Gediz <sup>5</sup>	10,651	Municipality	1971	1973	68	2,291,000	33,691	2,250,000
14	Izmir (Demir)	520,832	Cooperative	1964	1969	725	23,464,785	32,370	3,260,000
15	Kastamonu	29,388	"	1967	1972	300	7,397,500	24,658	3,693,400
16	Kayseri	160,985	"	1969	1974	464	24,958,731	53,790	14,975,300
17	Kırşehir	33,178	"	1962	1966	255	5,047,200	19,792	500,000
18	Konya I	200,464	"	1964	1969	535	15,000,000	28,037	7,000,000
19	Kınak	8,982	Municipality	1966	1967	44	350,000	7,954	200,000
20	Kütahya	62,222	"	1967	1973	59	2,600,300	44,072	1,757,000
21	Niğde	25,685	Cooperative	1967	1970	223	7,699,000	34,522	3,550,000
22	Niğde	26,006	"	1970	1974	151	7,084,267	46,922	3,500,000
23	Orhangazi	9,191	Municipality	1967	1973	47	1,649,748	35,101	400,000
24	Sivas	133,979	"	1963	1969	310	6,159,507	19,869	3,513,500
25	Sivas	133,979	Cooperative	1969	1972	96	1,266,540	13,193	400,000
26	Tekirdağ	35,387	"	1967	1971	146	3,302,079	22,616	1,790,000
27	Turhal	28,948	"	1967	1973	125	3,787,612	30,300	2,400,000
	TOTALS					5,762	203,630,634		96,323,098

<sup>1</sup> Information supplied by the Department of Small Industry & Artisans.

<sup>2</sup> Year in which the first action was initiated, except where application to the Ministry was delayed. In this latter case it is generally the year in which Ministry approval was sought.

<sup>3</sup> Year in which firms moved on to the estate.

<sup>4</sup> In some cases the official number does not correspond with information from visits

<sup>5</sup> Gediz is a special case: it was destroyed by earthquake & the estate is 100% Government subsidized

If the modest figure of four insured persons per unit is accepted for industries on industrial estates, the figure for persons employed, excluding boys, for the 6,134 known to be operational must be about 24,500. If the 1972 figures for insured persons employed in manufacturing industry and given at the beginning of Section I, namely 553,000 can be used as a base, this gives 4.43 per cent of the labour force working on industrial estates. Add to this the numbers who will be employed on those estates under construction, most of which should be operational by, say, 1977, (14,834 units), and a figure of around 60,000 additional workers is arrived at. This would make a total of about 84,000 workers. Assume that by 1977 the insured workforce in manufacturing has increased by 20 per cent on 553,000 (110,400), to 663,4000, then 84,000 represents about 12.6 per cent. However, given that the industrial estate movement seems to be snowballing and taking into account the large and medium industry industrial areas, it may well be that in a few years' time the percentage of the workforce employed on industrial estates will be as high as 20 per cent, certainly one of the highest in the world.

It must be stressed again that the above figures can only be regarded as indicative because of the uncertain quality of the basic data. If this is clearly recognised, some idea can be obtained of the importance of industrial estates to the industrial development of Turkey and to the growth of employment opportunities.

## 2. Government Policies on Small Industry and Industrial Estates

Formal Government action action in promoting industrial estates as a means of accelerating industrial development dates from the First Five Year Development Plan (1963-1967). Before this there had been isolated initiatives such as the Konya (Meram) Estates, (see Appendix III, Report A.2), on which action was started as early as 1954.

The principal objectives of Government action were:<sup>1</sup>

- (1) to provide better and safer working conditions for small industries;
- (2) to promote a spirit of cooperation among small firms in various fields;
- (3) to bring scattered firms and small workshops together so as to be able to provide common facilities and encourage complementarity, thus establishing a basis for their development and integration;

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<sup>1</sup> Some of these are referred to in UNIDO: Industrial Estates in Europe and the Middle East, New York, United Nations, 1968. p.99

- (4) to develop an instrument of decentralisation of the industrial base to produce more balanced development, with special emphasis on the development of backward areas;
- (5) to promote existing small entrepreneurs rather than to encourage the establishment of new firms; (see below)
- (6) to promote and facilitate sub-contracting by large firms to small firms;
- (7) to enable the various extension services provided by the Government to be more rapidly and more effectively channelled to small firms;
- (8) to relieve the increasing congestion and dislocation of traffic in the cities, where most small firms are located, with a view to implementing a town planning programme.

The first industrial estates had been started by municipalities and cooperatives of small entrepreneurs and craftsmen. 1964 was the first year in which the Government intervened to provide support. The reason why it was decided not to open industrial estates to people setting up new firms was that the Ministry of Industry and Technology, which was charged with the support programme, including the allocation of credits, felt that there were already enough small industrialists with under-utilised capacity to provide the necessary industrial growth in this sector for some time to come without creating new ones.

### 3. Criteria for Government Support for Industrial Estates

Before financial and other support can be obtained from the Ministry of Industry and Technology, (hereinafter referred to as "the Ministry"), a number of criteria must be met. Those relating to the city or locality where the estate is proposed include:

- types of industry which it is proposed to house on the estate. Priority is given to towns where manufacturing units are in the majority.
- the existing accommodation and working conditions of the small industries in the locality from which the estate members will be drawn.
- the unemployment rate. Priority is given to "special" or "backward" areas.
- the demonstrable existence of the entrepreneurial potential;
- the marketability of the products produced;
- the possibilities of increased utilisation of local raw materials;
- possibilities of improved relations with larger industries, e.g. sub-contracting.

The Ministry is primarily concerned to promote manufacturing industry. Places on the estate are normally limited to firms in the following industrial sectors:

metal products  
wood products  
chemical products  
electrical and electronic equipment  
leather goods.

Specifically excluded are food manufacture and shoe manufacture.

Metal products include

general metal machining  
presswork  
welded products  
sheet metal products  
foundry products  
forgings and blacksmiths products  
electro plating

They include machinery and machine tools, agricultural machines, spares for automobiles, automobile body parts, including painting.

Wood products include

sawn timber (sawmills)  
carpentry and joinery work  
furniture

Chemical products include

plastics  
plastic products  
soaps and detergents  
cosmetics  
rubber goods

Electrical and electronic equipment include

all types of electrical machinery  
batteries  
radios, televisions and industrial electronic equipment

Leather goods include

tanning  
all types of leather goods except footwear

Packaging materials are also included.

The inclusion of firms specialising in repair work in the automobile and agricultural equipment fields and of electrical and electronic equipment is permitted. The Ministry is also prepared to consider suitable trades outside those listed. It may be seen from the visit reports in Appendix III that, in fact, a majority of the firms on most of the estates were auto or agricultural equipment repairers. Many had begun to manufacture after coming to the Estates.

In most of the cities where there were a large number of small industries and artisan workshops the working conditions are very bad, there are no possibilities for expansion and much congestion in the streets causes inconvenience to the general public. (See various places in this Report, including the Appendices). In some areas designated as industrial zones some years ago have become engulfed in residential or commercial districts as the cities have expanded. The Ministry of Reconstruction is responsible for town planning, but in the matter of approval for sites for industrial zones, some powers have been delegated to the Ministry of Industry.

An essential preliminary step to obtaining Ministry approval and support is the setting up of an Executing Agency, (see next sub-section). In the small industry sector this is normally either a municipality or a cooperative of industrialists wishing to participate in the estate. The Department of the Ministry dealing with large and medium industry has given financial support to an industrial area set up by a chamber of commerce. The principle in both cases is that the Ministry should deal with a single responsible body representing the industrialists in all negotiations and use it as a channel through which aid can be provided to the individual firms.

The demands for credits are considerable and have greatly increased in the last four years due to inflation. According to Table 3, the Government

TABLE 3

Industrial Estates aided by the Ministry of Industry & Technology -  
Department of Small Industries & Artisans - Under Construction, Nov. 1975 <sup>1</sup>

	Town	Population (1970)	Action Started	Estate Operating (Est)	No. of Units Planned	Cost of Buildings	Cost per Unit	Government Credit Assigned
1.	Akşehir	32,591	1970	1975	302	17,189,042	56,917	8,000,000
2.	Avanos	N.A.	1970	1974	72	3,924,850	54,652	2,600,000
3.	Burdur	32,746	1973	1975	34	2,505,960	73,705	1,700,000
4.	Bolu	26,344	1969	1975	296	21,111,916	71,324	11,500,000
5.	Çankırı	26,124	1973	1975	120	23,517,030	195,975	4,800,000
6.	Diyarbakır	148,566	1967	1975	230	10,814,935	37,233	6,262,400
7.	Edirne	53,806	1973	1975	288	27,790,624	96,496	7,300,000
8.	Elazığ	107,344	1969	1975	597	30,000,000	50,251	21,000,000
9.	Erzurum	133,444	1969	1975	645	57,725,885	89,497	32,900,000
10.	Ereğli (Konya)	See Konya	1972	1974	242	11,429,401	47,228	6,900,000
11.	Gaziantep (G)	227,625	1970	1975	50	30,000,000	600,000	10,000,000
12.	Gaziantep (C)		1973	1976	1,100	104,722,828	95,181	10,000,000
13.	Isparta	50,005	1969	1975	571	77,434,733	135,612	32,000,000
14.	Izmir II (Auto)	520,832	1970	1974	747	34,310,829	45,797	27,800,000
15.	Kadirli	28,109	1973	1975	85	8,341,400	98,723	1,800,000
16.	Karaman	11,801	1973	1975	136	16,274,640	119,666	7,700,000
17.	Karacabey	19,954	1972	1975	124	9,200,895	74,201	5,800,000
18.	Kahramanmaraş	110,781	1973	1975	589	81,817,800	138,818	18,000,000
19.	Konya (Karaman)	200,464	1969	1974	900	50,000,000	55,555	4,400,000
20.	Kırklareli	N.A.	1973	1975	184	18,271,685	99,304	7,000,000
21.	Kütahya (Coal)	62,222	1967	1974	150	15,584,087	103,893	4,800,000
22.	Malatya	128,841	1968	1974	540	31,107,288	57,606	24,300,000
23.	Merzifon	28,034	1973	1975	248	27,835,965	112,241	3,000,000
24.	Mersin	112,982	1971	1975	382	25,000,532	65,446	10,000,000
25.	Polatlı	32,326	1971	1975	347	38,904,977	112,118	6,000,000
26.	Samsun	134,061	1971	1974	463	39,935,785	86,254	21,100,000
27.	Salihli	34,478	1972	1975	244	26,501,194	108,580	3,400,000
28.	Söke	30,000	1973	1975	210	28,516,043	140,557	13,200,000
29.	Trabzon	80,798	1970	1974	262	20,457,500	78,196	17,800,000
30.	Tekel	44,110	1971	1974	238	26,091,028	87,553	10,800,000
31.	Tonya	16,698	1973	1975	185	16,463,192	88,990	7,000,000
32.	Van	46,751	1967	1974	75	3,479,510	46,353	4,400,000
33.	Yerköy	18,208	1972	1975	188	10,851,341	58,251	11,300,000
34.	Zile	27,423	1972	1975	154	17,521,394	113,775	10,900,000
35.	Eskişehir	216,373	1973	1977	697	83,500,000	119,799	10,000,000
36.	Istanbul (Döğ)	2,132,407	1973	1977	282	145,000,000	575,396	4,000,000
37.	Izmir III (Auto)	520,832	1973	1977	424	79,545,000	187,616	2,400,000
38.	Aksaray	30,138	1975	1978	285	43,137,124	165,243	2,100,000
39.	Bafra	28,900	1975	N.A.	188	32,088,728	162,088	N.A.
	TOTALS	-	-	-	12,048	1,362,585,320	-	385,662,400

<sup>1</sup> Information supplied by the Ministry of Industry & Technology - Department of Small Industries & Artisans. The information is not completely up to date, in that certain estates, e.g. Konya (Karaman), are now fully operational. There are a further 10 proposals under examination at present. (Nov. 1975)

<sup>2</sup> Gaziantep (G) is the model estate wholly financed by the Government. The cost of buildings includes the central workshops & laboratories, now operational, to which a substantial contribution in equipment & expert services has been made by UNIDO. See Appendix.

credits to estates under construction amount to a total of TL 395,662,400. (U.S. \$ 26,377,000 approximately). In fact, much more is involved. For example, the Gaziantep Model Estate, wholly financed by the Government, is costing at least TL 30,000,000, but the listed credit is only TL 10,000,000.

The Director General of the Department of Small Industry and Handicrafts (hereinafter referred to as "the Department"), stated that politically industrial estates are popular, since they are evidence that Members of Parliament are doing something concrete to help their constituents and credits asked for usually pass without reductions. However, they are not unlimited, and this is why a system for priorities for special areas such as Gaziantep, where unemployment is high, has had to be instituted. Figure I shows the distribution of Government sponsored estates in November 1975. It can be seen that the majority of operational estates lies west of a line running north-south through Samsun and Ceyhan. There are, however, a number of estates either under construction or under study in eastern Anatolia, the most under-developed region.

#### 4. Procedures for obtaining Government Credits

(a) The Executing Agency - The first step is the setting up of the Executing Agency. In most cases this is in the form of a Building Cooperative. The Building Cooperative comes into existence for the express purpose of enabling its members to purchase the land, develop the infrastructure, (roads, water supplies, electricity supplies and drainage), and build the industrial and administrative buildings of the estate concerned. It has a very precise legal status and statutes laid down by the Ministry in standard form.<sup>1</sup> The building cooperative is not a permanent entity. Apart from being the body, through its Managing Board, which negotiates for the land and engages

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<sup>1</sup> T.C. Sanayi ve Teknoloji Bakanligi: Sinirli Sorumlu..... Kicuk Sanayi Sitesi - Yapi Kooperatifi Statigi - Kicuk Sanatlar Dairesi Reisligi Ankara, 1974.



the surveyors, architects, civil engineers and contractors who design and build the estate; it is the legal body through which credits and loans to individual members for the purchase of their buildings and collectively the purchase of land and development of the infrastructure and common facilities buildings are negotiated. As long as there are any loans outstanding on buildings or infrastructure, the building cooperative remains in existence. It is normally the executing agency responsible for the contracts and seeing that they are repaid with the appropriate interest. The managing board manages the estate for its members. Once the loans are fully repaid, the building cooperative must be dissolved. It has no powers to borrow for equipment or working capital. (See below).

The great majority of executing agencies are cooperatives. A few are municipalities. The demand for Government support must come from the executing agency and not from any single individual or group of industrialists. Two exceptions were seen:

- (1) Gediz - In the case of this town, destroyed by earthquake in 1970, with great loss of life, the Ministry took the initiative of setting up the estate. The Town Council was made the Executing Agency under the Chairmanship of the Mayor.
- (2) Gaziantep Model Estate - Composed of 50 model units associated with a much larger cooperative estate and a Ministry-run Development Centre, the Ministry acts as Executing Agency. It is currently selecting 50 firms to be housed on the estate.

(b) The Ministry Surveys - The Ministry conducts a two-phase survey involving:

- (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 existing economic and social structure of the small industries of the town;
- existing infrastructure facilities and the possibilities of alternative locations in the town;
- details of members of the cooperative or applicants for places on a municipal estate: their trades, credit ratings etc;
- sites proposed;
- central facilities proposed.

The central facilities may include an administration building with offices, meeting/training rooms, conference and exhibition halls. Common facility workshops and warehouses are also eligible for credits from the Ministry. In addition, estates may have restaurants and cafeterias, post office, bank, first aid post, fire brigade, police post and parking lots. The cooperative estates visited all had some, but never all, of these facilities except common workshops which, it seems, were not generally wanted.

The completed questionnaire is studied by officials of the Department and, if found generally acceptable, a team is sent to the town to discuss the information provided with the Board of the Executing Agency and other local authorities and to examine physical conditions. The team is composed of an industrial economist, mechanical engineer and an architect. They evaluate the situation taking into account, among other things, the criteria listed in sub-section 3.

Discussions are held with the provincial Governor or his representative, the local Chamber of Commerce and Industry, and the associations and unions of small industrialists and artisans.

Confidential discussions are also held with the local branch of the Halk Bank, the State bank set up for the specific purpose of financing small industry and artisans. The credit rating of firm members of the cooperative is examined. In some cases, smaller industrialists do not use the Bank's credit facilities, preferring to go to friends or relatives.

One of the criteria already mentioned is the nature of the industries in which firms applying for places on the estate are engaged. It is specified that they should be engaged in manufacturing industry, which includes repair activities in specified fields. Retail shops may not be members of cooperatives applying for loans, but may rent premises on the estate so as to provide

shopping facilities to the firms there. A case was met with during the research worker's tour in which some retailer members of a cooperative were forced to leave the cooperative before the Ministry would grant a loan.

The Ministry team make the decision on the location of the site. Strictly speaking, this is a matter for the Ministry of Reconstruction but, as noted above, there is an agreement between the two Ministries that the Ministry of Industry will make its decisions based on agreed criteria. Where there is a choice of sites, the Ministry team will tend to select one which is well outside the town, other things being equal. The objective in doing this is that Turkish cities are expanding so rapidly that, as already noted, industrial areas situated close to city boundaries may be surrounded in a few years' time and the situation will be no better than before. This has already happened. The direction of the prevailing wind is another factor which may influence choice where more than one site is under consideration.

Other criteria relating to the site include:

- cheapness of the land
- availability of facilities for the infrastructure
- possible pollution
- structure of the soil
- transport facilities
- availability of adjacent land for future extensions.

There is often conflict of views between the Ministry team and the industrialists themselves, especially where there is no industrial estate already in the locality. The industrialists and artisans are used to being in close contact with their customers and fear that if they move out some distance from the town, their customers will desert them. In practice this has shown not to be the case, as was stated on many occasions in the course of discussions. In fact, some people when asked to join a cooperative did not do so because they feared this loss, and later changed their minds when it was too late: their places had been filled.<sup>1</sup> A compromise is sometimes reached.

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<sup>1</sup> Gaziantep Auto Repairers' Association. Section I. p.18

The area of the land to be purchased is determined by the needs of its members, that is, how many workshops in each area category (50 sq. m., 100 sq. m. etc) are required. The Ministry now require substantial amounts of green space along the main roads and in the form of open spaces. In recent estates the covered factory area may occupy from 40 to 55 per cent of the total site area. In some of the older estates which were set up, in some cases, before Ministry aid was sought, there are no green spaces and conditions between and in front of workshops are again becoming congested.

As far as possible the Ministry prefers land owned by the municipality since it is normally cheaper and purchase is simple. A committee determines the rate of compensation. The Department also has specifications for the buildings.

The final project is the outcome of discussions between the Ministry team, the Executing Agency and the Executing Agency's consultants and covers all aspects of the proposed estate including the designs of the workshop buildings and the range and design of the common facilities buildings. There is usually give and take on both sides. The Department has now gained much experience in the field and is in a position to offer much helpful advice.

Once the agreement is reached, the Ministry will normally give its approval to credit facilities being granted to the executing agency.

In practice, however, matters are not always so simple. One or two of the cooperatives visited did not approach the Ministry for credit until well after the land had been bought and work started on infrastructure and buildings. In the case of the Meram estate at Konya, already mentioned, land was acquired and work was well in hand before the Ministry launched its credit schemes. In fact, though the land was bought in 1956 and production buildings started in 1959, the cooperative was only approaching the Ministry in 1966, after running into financial difficulties.<sup>1</sup> Many cooperatives bought their land before approaching the Ministry and the latter has generally accepted the situation. In two cases the Ministry has refused credit where site and buildings did not meet its criteria.<sup>2</sup>

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<sup>1</sup> See Appendix III. Report A.2.

<sup>2</sup> Baybure, Usak.

Finance and Credit Facilities

In the case of small industry estates the purchase of land and construction of infrastructure must be paid for by the Executing Agency before money will be made available by the Government. This is the proof of the serious intentions of the cooperative members. Nevertheless, the plans and designs for services, roads and buildings forming the infrastructure must, as noted above, be approved by the Ministry. The exceptions in practice have also been noted. The Government will not give loans for the land and infrastructure, but they are normally available to municipalities through the Iiler Bank, a State Bank, which was set up to service municipal needs. The loans are for ten years, with a repayment holiday in the first year. Interest rate to executing agencies in normal areas is five per cent, but to those in special areas it is three per cent.

In the case of the Manisa Industrial District, (which de facto is an industrial estate with all the amenities), and which is set up for medium and large industries, the Ministry granted a 90 per cent loan for the land and infrastructure. On the other hand, buildings are erected by individual firms according to their particular needs, which necessarily vary much more than those of the more restricted range of small industries. The Gaziantep Model Estate, where the Ministry paid for land and infrastructure, represents a special case.

Government loans are only available to Executing Agencies for the erection of the production buildings and common facilities buildings. They are not available to individual firms for machinery or equipment. (See below). In normal areas, they may cover up to 60 per cent of the building costs. In special areas they may cover up to 80 per cent and in certain circumstances 90 per cent of the costs. Only in Gediz, so far, has a 100 per cent loan been granted and, in special circumstances, to Gaziantep Model Estate.

Not all cooperatives take advantage of the full credit facilities available to them from the Government. Of those visited - for example - the Karatay Estate Cooperative at Konya drew only 4.5 million TL on a total expenditure, excluding the cost of the land, of 43 million TL. The Polatli Cooperative, which has spent nearly 39 million TL to date, including project, equipment and infrastructure, has only requested six million Turkish Lira from the Government.

The repayment period for the Government loans is normally ten years at an interest rate of 5 per cent. There is a one year repayment holiday. For special areas the rate of interest is 3 per cent.

Most firms moving on to the industrial estates take the opportunity of entering enlarged premises to buy additional machinery and equipment. In many cases they are able to do this from their own reserves. Indeed, one of the most striking characteristics of the Turkish small industrialist and the worker is their capacity for saving money to buy or do something they really want. However, for the many who do require help in enlarging their productive capacities, the credit facilities of the Halk Bank are available. The Ministry also permits the formation of Producers' Cooperatives to which credits for capital equipment can be granted.

In this connection, one problem was raised by several industrialists in the course of the visit to estates. Where the cooperative has a loan from the Government for the buildings, the Government has first mortgage on land and as long as any part of the loan is outstanding. This poses problems when industrialists approach the Halk Bank for loans for equipment and machinery. No case was met with where a production cooperative had been formed for this purpose and industrialists did not seem to know of this facility. The only case met with where some industrialists did not have problems of this sort was in Aydin, where many held agricultural land of their own.

In deciding the rate at which the credits shall be granted, the Ministry consults with the Executing Agency in order to find out how many years the members wish to spread over their 40 per cent share. For example, if the total cost of the buildings on which a 60 per cent loan is wanted is TL 60 million, and the members want three years to pay their 40 per cent contribution (TL 24 million), the Government will feed in its contribution at the rate of TL 12 million per annum.

6. Services to the Industrial Estates

Until recently the small scale industry programme of the Ministry of Industry has been rather starved of funds for the provision of technical services, despite the large and ever-increasing investment in loans to industrial estates. The first major step in this direction has been taken with the setting up of the Small Industries Development Centre at Gaziantep. This Centre is situated on the Gaziantep Industrial Estate which is composed of two units: the Model Estate, financed wholly by the Ministry, on to which 50 selected firms will be invited to move when it is completed, and the Cooperative Estate, composed of 1,100 units, financed and operated on normal lines.<sup>1</sup>

The common facilities workshops contain a toolroom, a precision machine shop, heat treatment shop and forging shop. Laboratories are composed of a metallurgical laboratory, sand and chemical laboratories. There are also conference and training rooms, a technical library and an audio-visual laboratory.<sup>2</sup>

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<sup>1</sup> Small Industries Development Centre: Papers for Review Mission, KUSGEM, November 1973.

<sup>2</sup> UNIDO: Meeting on Promotion of Small Industries in the RCD Countries, Teheran, Iran. 11-17 April 1971. An Overview: C.Y.Chang and Aykut Ertem, SIDC, Gaziantep. (Mimeographed)

The workshops are intended to offer facilities for product and process development for the industrialists on the estate. Industrialists wishing to develop inventions or improved products and processes may have the services of design and production engineers and the possibility of building prototypes at cost. The laboratories are intended to provide quality control services, testing facilities for raw materials and diagnosis facilities for trouble shooting. The precision machines and laboratory equipment have been provided by UNIDO, together with the services of a number of international experts.

The national and international staff carry out extension services to firms in the town. These are beginning to be appreciated and increasingly used by local small industrialists.

The beginnings of a national service are to be found in the National Small Industries Development Centre which has been recently established in Nakara with support from UNIDO. It is intended that this Centre shall eventually provide nation-wide extension services.

An important service which the Ministry offers to small industries in general through their associations is the provision of certain raw materials including iron and steel at substantially reduced rates. For example, pig iron bought through Government channels costs 260 kurus per kg. and through commercial channels 350-400 kurus per kg.<sup>1</sup> According to the Ministry's Regional Director at Kenya, about 60 per cent of the Small Industries' demand is met by the Government, the remaining 40 per cent coming from commercial channels. Credits for working capital for raw materials may also be obtained from the Ministry through Production Cooperatives.

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<sup>1</sup> 100 kurus = 1 TL.



7. Training

Since 1963 the Ministry has been providing training courses for small industry. In the period 1963 - 1974 inclusive, 28,582 people attended technical courses and 19,545 diplomas were distributed.<sup>1</sup>

In its training activities for small industry the Turkish Government has pursued policies different from those followed in many developing countries. In the past, an attempt was made to set up institutions involving fixed centres, but the cost of buildings, equipment and staff were found to be incommensurate with the results obtained. The Ministry of Industry does not at present have its own schools, (with the partial exception of the Gaziantep Centre). It cooperates with the Ministry of National Education, which has technical high schools with the necessary equipment and qualified teaching staff. These are not normally used in the evenings, and thus are available for these courses. The technical school teachers are used and paid small honorariums.

The programmes are decided upon a two-yearly basis by an ad hoc committee which meets in Ankara every year. It is composed of representatives of the Ministry, the Ministry of National Education, the Confederation of Artisans and Tradesmen and the Halk Bank, the last named being responsible for financing the operation.

The selection of towns in which courses are to be run is made with the following criteria in mind:

- the potential of the small industries in the localities which have applied;
- the capacities and amenities of the local technical schools;
- the estimated needs ;
- the availability of funds.

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<sup>1</sup> Information derived from discussions with the Director General, Department of Small Industry and Handicrafts and a cyclostyled document put out by the Ministry.

Individual estates have some priority. A team is sent to the towns provisionally selected where a local executive committee is formed, composed of:

- The Manager or Chairman of the Credit Guarantee Cooperative<sup>1</sup>
- Principal of the local Technical High School;
- Local Director, Ministry of Industry;
- Manager of the Halk Bank;
- Chairman of the Small Industry and Handicrafts Associations.

This committee studies the needs of local small industries in terms of:

- what programmes they want;
- at what level the programmes should be;
- who wants to participate.

This is done by means of questionnaires. Based on the responses the nature and levels of the course are decided. There are usually three levels for manual workers, for skilled workers, semi-skilled workers and unskilled workers and apprentices. Orientation courses are also given to the teachers, since teaching adults, possibly of a rather low academic level of education (compulsory education in Turkey is only five years), is quite different from teaching secondary schoolboys.

The courses are of 72 hours duration spread over 12 weeks in six months. There are two semesters per year. The most popular programmes are in the various metalworking trades, electrical and radio manufacture and repair, automobile engine repair and in woodworking.

Programmes are also given for entrepreneurs which include the elements of marketing, standardisation, cooperative action, quality control, quantity production organisation, accounting and business administration. These are of 24 hours duration, spread over six weeks. A large number of owners have attended the programmes.

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<sup>1</sup> Building or producers' cooperative.

The Ministry has been supplied with two mobile training workshops by UNIDO and is using these for specialised training. A scheme has been developed whereby large firms supplying production equipment are invited to supply the trainers to tour with the workshops. A start was made in a welding programme for which the trainers were provided by three makers of welding rods. Paint manufacturers have also cooperated in courses on automobile painting.

### III. SOME GENERAL COMMENTS ON THE INDUSTRIAL ESTATES PROGRAMME AND THE ESTATES VISITED

#### 1. Rate of Growth of the Programme

Tables 2 and 3 give the estates completed and under construction in November 1975. The dates on which action to set up the estates, normally the formation of a cooperative or a committee of the municipality, was initiated or given. However, these dates are only those on which the Ministry was approached to support them, and the tables do not include estates not receiving financial support. One or two of the estates visited, for example, Kenya - Merani, were started in the 1950s and there are probably others. Only the starting dates given in the tables are used in Table 4 below, for lack of other information.

Table 4

Number of Estates on which action was started - per year - 1962/75

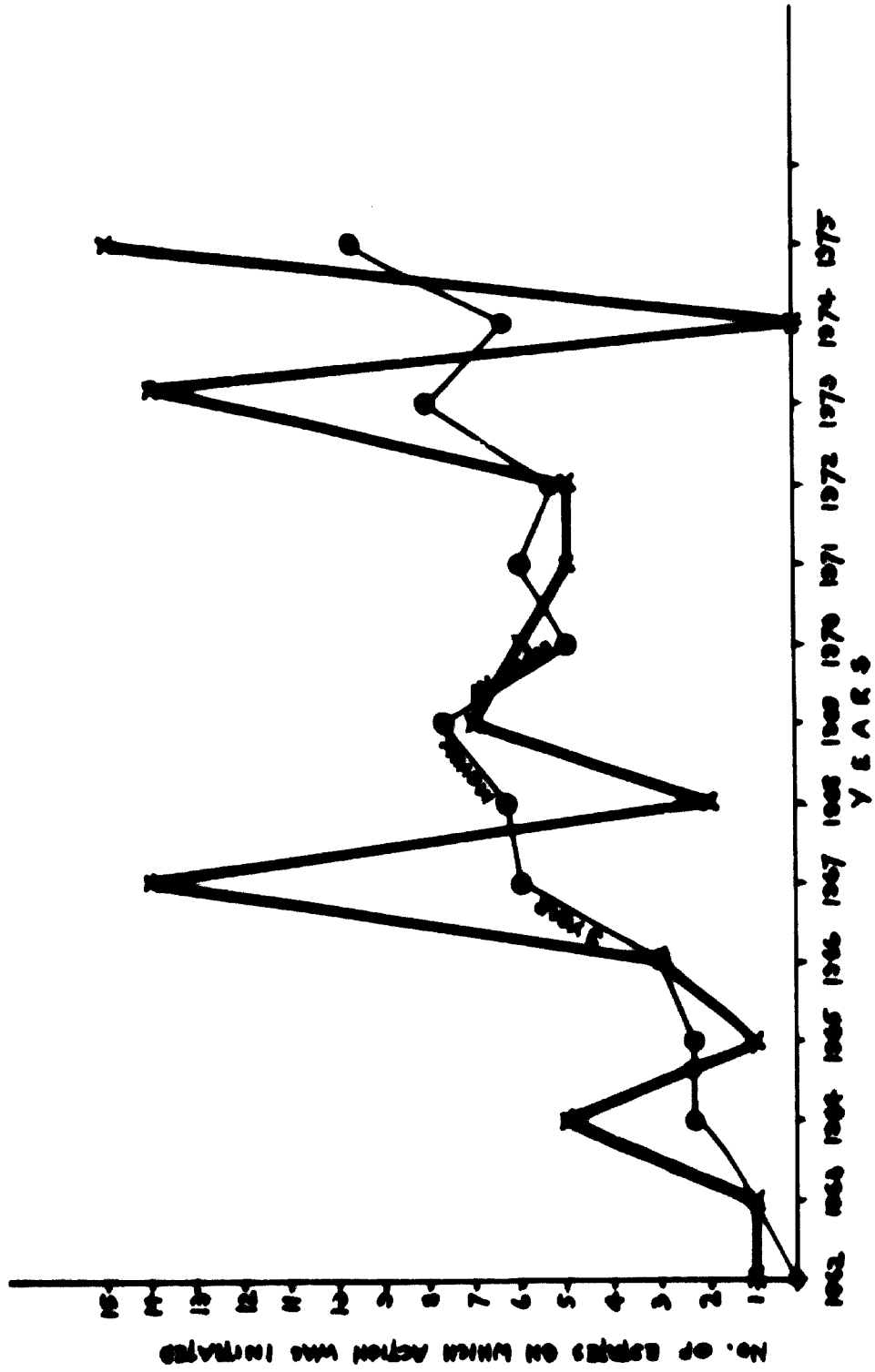
<u>Year</u>	<u>No. of Estates</u>	<u>3 year Moving Average</u>
1962	1	-
1963	1	1
1964	5	2.3
1965	1	2.3
1966	3	3
1967	14	6
1968	2	6.3
1969	7	7.7
1970	6	5
1971	5	6
1972	5	5.3
1973	14	8
1974	0	6.3
1975	15 *	9.7

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The reasons for the extreme fluctuations are not known; they probably have something to do with the timing of requests. The figures for 1967 may include estates on which action was started earlier but where the executing agencies have run into financial problems and had to turn to the Government. The table is shown graphically in Figure 2. In spite of the fluctuations the moving average shows a steady climb and this takes no account of the unsponsored small industries estates such as were discovered at Konya and which had been set up because of the success of the official estates. Nor are large and medium industrial areas included.

\* The 1975 figures include 2 estates under construction and 13 at present under consideration by the Department and which are assumed to have had the action initiated in this year.

**FIGURE 1.**  
**NUMBER OF ASPECTS ON WHICH ACTION WAS INITIATED - YEARLY**  
**1963 - 1975**



## 2. Duration of Construction and Costs

Tables 2 and 3 give details of the building costs and number of units on each estate. Enquiries in the course of visits throw some doubt on the accuracy of some of the figures, but in the absence of more complete data they must be accepted. The cost per unit has been calculated from these figures.

The duration of the construction period, which includes the infrastructure, as well as the industrial buildings, varies very much. In Table 2 the variation is between nine years and one year with an average of about four and a half years. The durations given in Table 3 vary between eight and two years with an average of rather less than four years. However, most of these estates are not yet completed and some of the completion dates may be pious hopes.

These variations are difficult to explain. Clearly, there should be some correlation between the construction time and the size of the estate, but in fact there is little. Discussions in the course of visits suggest that the selection of the consultant architects and engineers and especially of the contractor play an important part, as well as the strength and energy of the chairman of the managing board of the cooperative. It may not be an accident that the large estate at Aydin, completed in three years, was managed by a full time professional director. Aid from the municipality may be a factor.

The variations in unit cost are even greater than those in construction time. The variation in unit cost of completed estates in Table 2 is between TL 7,954 and TL 73,324. In Table 3 the cost, in most cases incomplete or estimated, has risen steeply and varies between TL 37,293 and TL 575,396, excluding the Gaziantep Model Estate, where the unit cost is TL 600,000. but which is a special case.

Clearly, the rises in cost of recent years are partly due to inflation, in which building wages have increased disproportionately, but this would not account for the whole rise.<sup>1</sup> Attempts to correlate cost with duration of the construction period, years during which construction was proceeding, and number

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<sup>1</sup> Due, inter alia, to the departure of many skilled building workers to Europe.

of units to be constructed failed to show anything which would account for the wide variations, especially in the last few years. They would certainly be accounted for in part by the average size of units on an estate. Unit cost at Aydin, where areas of buildings run from 15 to 140 sq. metres, is TL 37,992, while at Ceyhan, where areas are from 50 to 200 sq. metres, they are TL 51,524. At Aksehir, which is not yet complete, and where areas extend from 50 to 900 sq. metres, with an average of rather less than 100 square metres, the unit cost is TL 56,917.

The variations would certainly be accounted for in part by differences in design and in the quality of buildings on different estates, but those seen at Izmir II, almost ready for occupation, and apparently superior to most of those seen on other estates, only cost TL 45,757 per unit, at the lower end of the range of recent construction and only a little above the average for the completed estates. It can only be concluded that these variations must be due to various factors acting together which certainly include the competence of the building contractors and the supervision to which they are subjected.

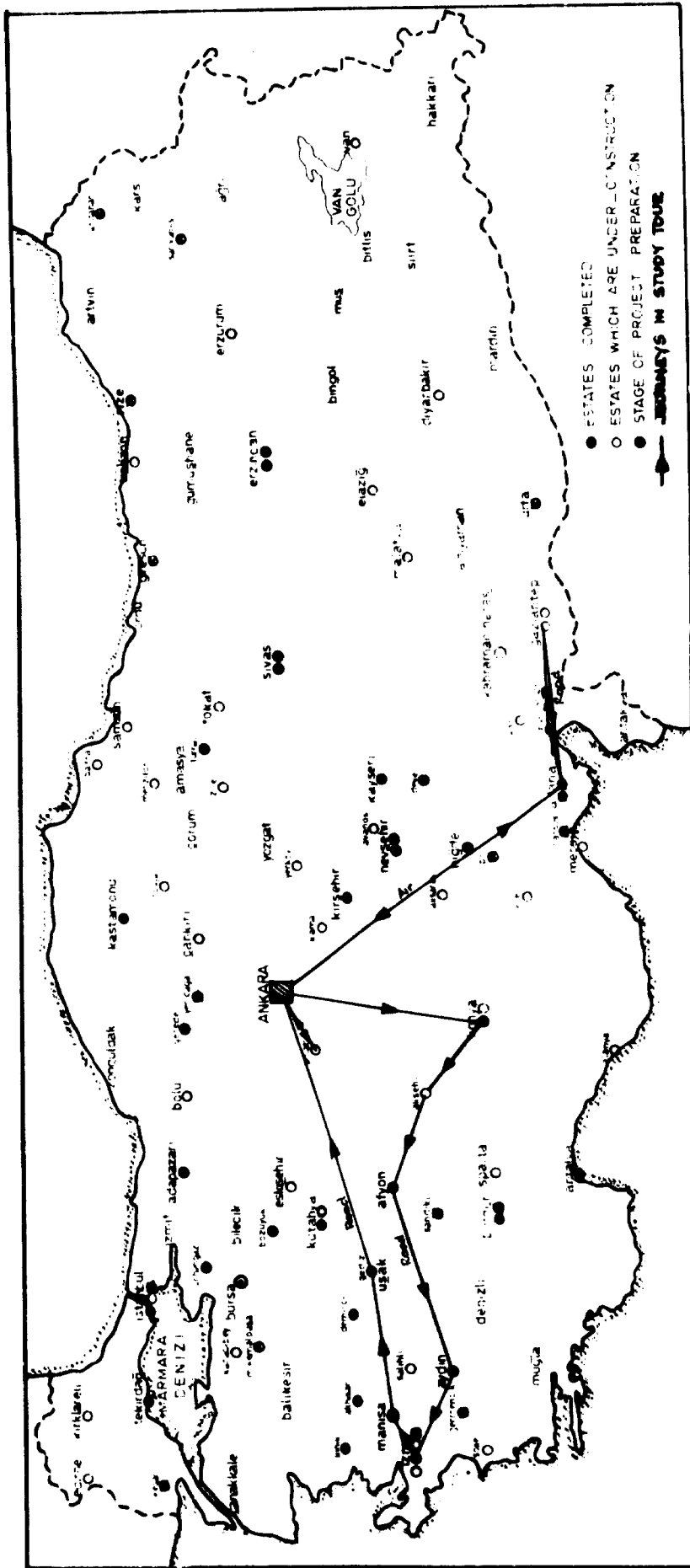
3. Some Characteristics of Estates Visited

Table 5 offers a summary of the main characteristics of the estates visited, both those in operation or partial operation and those under construction. It should be read in conjunction with the reports in Appendix III.

- (a) Physical Data - It will be noted that in most cases the actual areas of the estates and the planned areas are in agreement. Only in the case of Ceyhan is there some increase. There is some variation between the numbers of units erected, but in certain cases this is due to the occupation of buildings being staggered across several years. (Konya - Karatay, Izmir III). There is quite a variation in the distribution of sizes of individual units to suit local needs, although it is surprising to see the Aydin Estate with so many units of only 15 square metres, which would seem to make the occupiers little better off than when they were in the town and allow no room for expansion.
- (b) Persons Engaged - In most cases no figures were available for the numbers engaged before entering the estates and records are not kept centrally of numbers engaged in the firms on the estates, except in the case of Konya - Meran. Nevertheless, all the Chairmen and Directors as well as other industrialists with whom the question was discussed

FIGURE 1

INDUSTRIAL ESTATES IN TURKEY



4.11.1975

Ministry of Industry and Technology



were convinced that the numbers employed had at least doubled in the course of three or four years. This represents a new employment, as it does in toto on the Manisa District.

(c) Left Estate - The success of the estates is attested by the fact that very few people have left for reasons of business failure: (five on the Aydin Estate out of 550 firms and individual owners). In the case of Akşehir, the 67 who went to work in Europe were unable to wait for the estate to be completed. They gave up their membership of the Cooperative.

(d) Industries Represented - With the exception of the Manisa Industrial District, the dominant industries on all the estates visited were automobile and agricultural equipment repair and manufacture of parts and general metalworking industries, including foundries and forges. The Gaziantep Cooperative Estate will be almost entirely occupied by members of the Auto Repairers' Association and other metal workers, and the same is true of Izmir II. For a country which still has a relatively small number of automobiles per thousand inhabitants, the amount of work available in this sector is remarkable. A good deal of it seems to be provided by workers returning from Western Europe, particularly Germany, each of whom seems to return with a second hand car, often in very poor condition. Some of these cars being reconstructed were seen in Izmir and they certainly give rise to a deal of repair and replacement. With around 500,000 workers continuously in Western Europe until recently, most of whom seem to stay about five years, there must be an inflow of 50,000 or 60,000 automobiles per year, apart from those of workers at home on holiday. If this is so, it is a somewhat artificial condition, and the work available must fall off considerably in the future, if only because of the recession in Western Europe which has much curtailed emigration. The more enterprising of the auto repairers have branched out into making spare parts, in some cases having them accepted by the local car makers such as Fiat and the Turkish motor industry and sold under the car makers' labels. The same is true of the agricultural machinery repairers, a few of whom are now making their own machines, as may be seen from the visit reports.

A feature of all the estates visited, with the exception of Manisa, is the very large number of general engineering machine shops, often with a heavy investment in high quality machine tools, as well as with a quota of elderly machines. Some of the shops were doing high quality work to fine tolerances. There was, however, a great deal of under-used capacity and many new and expensive machines were seen idle. Although all the estates have developed intrastate contracting, sometimes extensively, there is obviously scope for a lot more cooperation as well as for a closer look by the authorities at capacity available when granting import licences. (See Conclusions).

- (e) Common Facilities - In general the weakest areas on the estates seem were the common facilities. Most of the administration buildings had meeting rooms and conference halls. A few had exhibition halls for products of the estates. None had technical libraries, except the Gaziantep Centre, although one or two chairmen said they were planning to have them. None had any central workshops except Gaziantep and none seemed to feel the need for them. The Director at Manisa said they had been planned but postponed because of lack of interest.

In this connection, there seem to have been few initiatives regarding training. Sometimes workers are sent to evening classes at the local technical high schools, but in general entrepreneurs seem to be content to wait for Ministry action. Those who had had Ministry programmes on the estates or in the towns wanted more. Management training seemed almost completely lacking unless provided by the Ministry.

General facilities varied very much. Most of the estates had at least one restaurant, (that at Ceyhan was very good), and/or coffee shop, a barber and a bank. Only Akşehir seemed to have retail shops such as grocers, probably because few wives were working and the men would not do the shopping anyway. Only Akşehir had a first aid post in operation. First aid posts, fire brigades and police posts were planned for others. Gaziantep will, of course, have the full range when completed.

- (f) Progress in Implementation - None of the dates given for the start of action correspond with those given in the Department's lists. In general it seems to have taken longer to complete estates than the lists suggest. This was noted above. Questioned regarding delays, chairmen and others seemed to feel that it was often a problem of inexperience in organising and directing an operation much larger and more complex than any that they or members of the managing boards had previously experienced. This was sometimes coupled with problems in obtaining Ministry approval of sites or building plans and a poor choice of consultants and contractors. The cases of Konya-Meram and Gaziantep are discussed in the respective reports in Appendix III.
- (g) Financial Data - It may be noted that not all the cooperatives visited took up their permitted allocations of Government building credits, normally 60 per cent. For example, Konya-Karatay cooperative took up only TL 4,500,000 out of TL 43,000,000 building costs. Aksehir Cooperative took TL 6,000,000 on building costs of TL 18,500,000. Many of the other estates listed in Tables 2 and 3 seem only to have taken up part of their maximum allocations. It may be good business to borrow as little money as possible so as not to be saddled with the interest on repayments, even at the low rate of five per cent. Certainly, many industrialists think so, having some dislike of being in debt. What is surprising is that so many very small firms seem to have had the capital and the revenue to put down deposits and maintain payments whilst borrowing so little.
- (h) Sub-Contracting - One of the purposes of the industrial estates programme is to encourage sub-contracting, both between firms on the estates and between them and larger firms outside. The first aim seems to be in process of being achieved; everywhere it was reported that firms were placing contracts with others on the estates either to supplement their own capacities or to obtain products which they had previously bought elsewhere. Certainly there is room for more cooperation, particularly in improving plant utilisation.

Progress in the second type of sub-contracting seems to be slower. Some cases were seen, at Ceyhan, for example, where firms were making spares for automobile and agricultural machine manufacturers to be

1 Detail in Appendix II Reports A1-A7 & B1-B5  
 The Code of abbreviations is on P. 1 of Appendix III  
 SUMMARY OF CHARACTERISTICS OF INDUSTRIAL ESTATES VISITED 1

ESTATE DATA	OPERATIONAL										UNDER CONSTRUCTION																
	CEYHAN	KONYA (MURAD)	KONYA	KONYA (KARAHISAR)	AKSEHİR	AYDIN	GEDİZ	MANİSA	GAZİANTEP (GÖZÜP)	GAZİANTEP (KÖRÜK)	POLATLI	İZMİR II	İZMİR III	CEYHAN	KONYA (MURAD)	KONYA	KONYA (KARAHISAR)	AKSEHİR	AYDIN	GEDİZ	MANİSA	GAZİANTEP (GÖZÜP)	GAZİANTEP (KÖRÜK)	POLATLI	İZMİR II	İZMİR III	
1. REGION	Adana	Konya	Konya	Konya	Afyon	Aydın	Kütahya	İzmir	Gaziantep	Gaziantep	Ankara	İzmir	İzmir	Adana	Konya	Konya	Konya	Afyon	Aydın	GEDİZ	MANİSA	Gaziantep	Gaziantep	POLATLI	İZMİR II	İZMİR III	
2. CITY POPULATION (EST.)	51,183	200,464	200,464	200,464	32,591	50,566	10,657	70,000 (est)	227,625	227,625	32,326	520,832	520,832	51,183	200,464	200,464	200,464	32,591	50,566	10,657	70,000 (est)	227,625	227,625	32,326	520,832	520,832	
3. EXECUTING AGENCY	Cooperative	Cooperative	Cooperative	Cooperative	Cooperative	Cooperative	Municipality	Chamber of Commerce	Ministry of Industry	Cooperative	Cooperative	Cooperative	Cooperative	Cooperative	Cooperative	Cooperative	Cooperative	Cooperative	Cooperative	Municipality	Chamber of Commerce	Ministry of Industry	Cooperative	Cooperative	Cooperative	Cooperative	Cooperative
4. PHYSICAL DATA	293	537	537	537	298	537	68	10,000	227,625	227,625	32,326	520,832	520,832	293	537	537	537	298	537	68	10,000	227,625	227,625	32,326	520,832	520,832	
5. OWNERSHIP	Local-Relocate	Local-Relocate	Local-Relocate	Local-Relocate	Local-Relocate	Local-Relocate	Local-Relocate	Local-Relocate	Local-Relocate	Local-Relocate	Local-Relocate	Local-Relocate	Local-Relocate	Local-Relocate	Local-Relocate	Local-Relocate	Local-Relocate	Local-Relocate	Local-Relocate	Local-Relocate	Local-Relocate	Local-Relocate	Local-Relocate	Local-Relocate	Local-Relocate	Local-Relocate	Local-Relocate
6. PLAZAS ENCLAVED (TOTAL)	6	12	12	12	6	12	12	12	6	12	12	12	12	6	12	12	12	6	12	12	12	6	12	12	12	12	
7. LEFT EXPENSE	D.3	BF. Some	BF. Some	RM. Some	E. 67	BF. 5	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None
8. INDUSTRIES DEMONSTRATED (See Code in Footnote)	AR, AM, TR, AN.P, AN.M, GM, EP, F, MW	AR, AM, TR, AN.P, AN.M, GM, EP, F, MW	AR, AM, TR, AN.P, AN.M, GM, EP, F, MW	AR, AM, TR, AN.P, AN.M, GM, EP, F, MW	AR, AM, TR, AN.P, AN.M, GM, EP, F, MW	AR, AM, TR, AN.P, AN.M, GM, EP, F, MW	AR, AM, TR, AN.P, AN.M, GM, EP, F, MW	AR, AM, TR, AN.P, AN.M, GM, EP, F, MW	AR, AM, TR, AN.P, AN.M, GM, EP, F, MW	AR, AM, TR, AN.P, AN.M, GM, EP, F, MW	AR, AM, TR, AN.P, AN.M, GM, EP, F, MW	AR, AM, TR, AN.P, AN.M, GM, EP, F, MW	AR, AM, TR, AN.P, AN.M, GM, EP, F, MW	AR, AM, TR, AN.P, AN.M, GM, EP, F, MW	AR, AM, TR, AN.P, AN.M, GM, EP, F, MW	AR, AM, TR, AN.P, AN.M, GM, EP, F, MW	AR, AM, TR, AN.P, AN.M, GM, EP, F, MW	AR, AM, TR, AN.P, AN.M, GM, EP, F, MW	AR, AM, TR, AN.P, AN.M, GM, EP, F, MW	AR, AM, TR, AN.P, AN.M, GM, EP, F, MW	AR, AM, TR, AN.P, AN.M, GM, EP, F, MW	AR, AM, TR, AN.P, AN.M, GM, EP, F, MW	AR, AM, TR, AN.P, AN.M, GM, EP, F, MW	AR, AM, TR, AN.P, AN.M, GM, EP, F, MW	AR, AM, TR, AN.P, AN.M, GM, EP, F, MW	AR, AM, TR, AN.P, AN.M, GM, EP, F, MW	
9. SERVICES & COMMON FACILITIES	AR, AM, TR, AN.P, AN.M, GM, EP, F, MW	AR, AM, TR, AN.P, AN.M, GM, EP, F, MW	AR, AM, TR, AN.P, AN.M, GM, EP, F, MW	AR, AM, TR, AN.P, AN.M, GM, EP, F, MW	AR, AM, TR, AN.P, AN.M, GM, EP, F, MW	AR, AM, TR, AN.P, AN.M, GM, EP, F, MW	AR, AM, TR, AN.P, AN.M, GM, EP, F, MW	AR, AM, TR, AN.P, AN.M, GM, EP, F, MW	AR, AM, TR, AN.P, AN.M, GM, EP, F, MW	AR, AM, TR, AN.P, AN.M, GM, EP, F, MW	AR, AM, TR, AN.P, AN.M, GM, EP, F, MW	AR, AM, TR, AN.P, AN.M, GM, EP, F, MW	AR, AM, TR, AN.P, AN.M, GM, EP, F, MW	AR, AM, TR, AN.P, AN.M, GM, EP, F, MW	AR, AM, TR, AN.P, AN.M, GM, EP, F, MW	AR, AM, TR, AN.P, AN.M, GM, EP, F, MW	AR, AM, TR, AN.P, AN.M, GM, EP, F, MW	AR, AM, TR, AN.P, AN.M, GM, EP, F, MW	AR, AM, TR, AN.P, AN.M, GM, EP, F, MW	AR, AM, TR, AN.P, AN.M, GM, EP, F, MW	AR, AM, TR, AN.P, AN.M, GM, EP, F, MW	AR, AM, TR, AN.P, AN.M, GM, EP, F, MW	AR, AM, TR, AN.P, AN.M, GM, EP, F, MW	AR, AM, TR, AN.P, AN.M, GM, EP, F, MW	AR, AM, TR, AN.P, AN.M, GM, EP, F, MW	AR, AM, TR, AN.P, AN.M, GM, EP, F, MW	AR, AM, TR, AN.P, AN.M, GM, EP, F, MW

SECTION 1

Category	EP	EF	AF	MF	EP	EF	AF	MF	EP	EF	AF	MF	EP	EF	AF	MF	EP	EF	AF	MF	EP	EF	AF	MF	EP	EF	AF	MF	EP	EF	AF	MF	EP	EF	AF	MF			
9. SERVICES & COMMON FACILITIES (1) Electricity, Water, Sewerage (2) Transportation, etc.	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM		
	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM		
10. PROGRESS IN IMPLEMENTATION Cooperative founded Land purchased Application to M.I. Infrastructure Dev. Ind. Bldgs - started - Camp	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	
	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM
11. FINANCIAL DATA Land Infrastructure Industrial Buildings Other Facilities	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM
	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM
12. SUB-CONTRACTING WITHIN THE ESTATE	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM
	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM
13. USE OF LOCAL RAW MATERIALS	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM
	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM
14. NEW PRODUCTS DEVELOPED ON THE ESTATE (Examples)	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM
	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM
15. SECONDARY & TERTIARY INDUSTRIES	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM
	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM
16. EXPORTS	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM
	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM
17. IMPROVED AMENITIES TO GENERAL PUBLIC	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM
	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM
18. LABOUR UNIONS - ACTION	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM
	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM

sold under the main contractors' own names, but such cases are still rare. Most of the estates visited lie some distance from the centres of large industry, such as they are. It is not known whether estates nearer these centres are any more successful. Efforts by the Gaziantep Centre staff to promote sub-contracts to firms in the city, which included a visit by a delegation of small firm owners to the Turkish motor manufacturers ran into trouble, first because the small entrepreneurs were over-impressed by the machinery and facilities at the large plants and felt that they would not be able to produce to the quality standards required. Then, when they did receive requests for quotations, for some reason they were persuaded to put their prices up to the levels of larger sub-contractors, so that the main contractors had no price incentive to give the contracts to untried firms. A great deal of education seems necessary before sub-contracting to small industrialists develops on any scale.

- (i) Use of Local Raw Materials - Since most of the firms on the estates visited were in the engineering and metalworking fields, there was little scope for using local raw materials. Only at Aydin and Manisa were some local materials used; at Akşehir timber from a fairly wide region was used.
- (j) New Products Developed on the Estates - These are discussed in the relevant reports. Most of the so-called "new" products were copies of existing machines, but in some cases improvements had been made. Polatli showed that it is not only on industrial estates that inventiveness blossoms, but conditions there were much better than in most towns. On the other hand, one of the most cramped and ill-lit shops in Izmir produced a prize winning development. (Disc brake boring machine - see report).
- (k) Secondary and Tertiary Industries Generated - Apart from the shops, restaurants and other services on the estates, there was no concrete evidence that other industries had been generated by the fact of the estates' existence. Increased employment obviously benefits shops and services in the local towns; this was specifically stated at Akşehir.

- (l) Exports - The bulk of the work done on the estates seen was for the local and national markets. Only at Manisa were firms found which were exporting substantial quantities of their products; in one case the firm was expecting to export 100 per cent of its output.
- (m) Improved Amenities to the General Public - Apart from some improvements in bus services on roads leading past the estates and, at Konya, the building of new roads and improvements in street lighting, it cannot be said that the estates have improved amenities to the general public. None of the estates had any associated housing and it is not the policy of the Government or municipalities to supply it.
- (n) Labour Unionisation - Small industry labour in Turkey is not unionised, in spite of a fairly sophisticated and long standing trade union movement. Manisa, with larger firms than the other estates visited, was fairly unionised and the Director of the Industrial District expected it to be fully unionised in time, due to its proximity to Izmir. At Aydin, which has over 5,000 persons working on the estate, unionisation was beginning, to the annoyance of the owners. At Konya it was said that good and skilled workers were so difficult to find that they could make their own terms. The accelerated return of workers from Europe could change the situation in both respects.

#### Return on Investment<sup>1</sup>

In addition to the elements listed in Table 5, there is the question of the return received from the investment in the estates. This immediately poses the question of definition. What return on whose investment? Secondly, how is it to be measured?

The Government does not invest in the estates - it grants credits on which it receives interest at the rate of five per cent or three per cent. This interest can be used to increase the funds available for further loans. More readily measurable, (if proper statistics were available), would be the effect on employment and the cost of creating one additional post on an industrial estate as compared with other measures, it being borne in mind that the conditions in the towns and cities precluded the expansion necessary to take on additional workers.

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<sup>1</sup> Figures used below are for small industry estates only.

In the discussion on the place of industrial estates in the overall industrial scene at the beginning of Section II, some attempt was made to assess the number of insured workers employed on the completed industrial estates (Table 2). The figure was estimated at 24,500. The estates listed in Table 3 as under construction might be expected to employ a further 60,000 by 1977. If it might be assumed that moving on to an estate doubles the average numbers of persons previously employed within, say, two years, then the new posts created on the completed estates would number 12,250 and those to be created on the new estates when they become operational would number 30,000. This is exclusive of boys, whose numbers it is impossible to assess. Both these figures include the six estates at Konya not listed in the Ministry lists. Some additions have therefore been made to the totals of the building costs in Tables 2 and 3 to allow for them at the rate of an additional TL 25,000,000 for the 372 unit estate completed and TL 200,000,000 for the remaining five estates with 1,995 units. The cost calculations per post of employment created are separately assessed for the completed estates and those under construction because of the very great increase in the average cost of construction in the last three or four years. 15 per cent has been added to allow for costs of land and infrastructure.

(1)	<u>Completed Estates</u>	TL
	Total Investment in Buildings (Table 2)	203,630,634
	Add - Completed Estate at Konya	25,000,000
		<hr/>
		228,630,634
	15% for land and infrastructure	34,300,000
		<hr/>
		262,930,634
	New posts created - 12,250	
	<u>Investment per post</u>	21,463 ( £ 1,430)
(2)	<u>Estates under Construction</u>	
	Total Investment in Buildings (Table 3)	1,362,985,920
	Add . Five Estates at Konya	200,000,000
		<hr/>
		1,562,985,920
	15% for land and infrastructure	234,479,000
		<hr/>
		1,797,464,920
	New posts to be created - 30,000	
	<u>Investment per post</u>	59,582 ( £ 3,972).



Unfortunately no figures are available for the costs of factory buildings bought or built privately. Virtually all those with whom the question was discussed said that the costs would have been higher and, of course, the interest on bank loans far higher than the modest five per cent charged by the Government. The fact that so few of the small industrialists have moved out of their very cramped quarters on their own seems to confirm this. Thus the cost of creating these employment posts is almost certainly less than if they had been created through firms moving to bigger premises independently. Furthermore, the other advantages of the industrial estates would have been lost, such as intra-estate contracting. The figures also take no account of indirect social benefits such as getting the factories out of congested towns or improved working conditions.

Turning now to the return which the entrepreneurs themselves may derive from their investment in workshops on industrial estates, some indicative figures may be obtained from the Ceyhan and Aydin Estates.

(1) <u>Ceyhan</u>	TL	TL
Investment in buildings - per unit <sup>1</sup>	51,524	
5% interest on 60% of cost over 10 years	15,345	
		66,869
Share of land and infrastructure <sup>2</sup> (1/244 x TL 3,704,000)	15,180	
Interest on bank loan on 50% infra- structure cost @ 14% over 5 years.	5,313	
		20,493
<u>Total Investment</u>		87,362

<sup>1</sup> Based on 244 units actually constructed as opposed to 293 authorized.  
(Tables 2 and 5)

<sup>2</sup> Cost of infrastructure and land is Total Cost - TL 16,286,000 less  
Cost of Buildings - TL 12,572,000 (Table 5) = TL 3,704,000.

Average no. of workers per unit before moving. <sup>1</sup>	6
Average no. of workers per unit after moving.	12
Additional workers	6
Average annual output per worker <sup>2</sup>	TL 59,300
Additional output of 6 workers	355,800
Net revenue on output à 10%	35,580

	TL	
<u>Return on Investment in land, infrastructure and buildings (due to additional workers only)</u>	35,580	= 40.5 %
	<u>87,362</u>	

(2) Aydia

Investment in buildings - per unit <sup>3</sup>	36,366	
5% interest on 60% of cost over 10 years	10,909	
	<u>47,275</u>	
Share of land and infrastructure estimated at 15% of cost of bldgs. <sup>4</sup> (1/550 x TL 2,997,798)	5,450	
Interest on bank loan of 50% infrastructure cost à 14% over 5 years.	1,907	
	<u>7,357</u>	
<u>Total Investment</u>		<u>54,632</u>

Estimated average no. of workers per unit before moving	3	
Est. average no./workers per unit after moving	6	
Average annual output per worker before moving <sup>6</sup>	36,590	
Output of 3 workers		115,770
Average annual output per worker after moving <sup>2</sup>	59,300	
Output of 6 workers		<u>355,800</u>
Increased value of output: TL 355,800 - TL 115,770 =		240,030
Net revenue on output à 10%	24,030	
<u>Return on Investment in land infrastructure and buildings (due to additional workers only)</u>		<u>24,030</u> = 44%
		<u>54,632</u>

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- 1 Table 5, column 1.
  - 2 Table 1, columns 4 & 9 at 1970 prices and based on 5-9 persons engaged.
  - 3 550 units were built instead of the 527 foreseen and listed in Table 2. Total costs given by estate authorities were TL 17,000,000, whereas Table 2 gives building costs only as TL 19,985,325. The latter figure has been based on calculations.
  - 4 Figures are not available. 15% seems reasonable.
  - 5 Figures are not available. Based on total employment on the estate average now employed would be 9 per firm but there are a few large firms and many small ones.
  - 6 Table 1, columns 4 and 9 at 1970 prices based on 3 persons engaged.

The foregoing estimates are very conservative in calculating net revenue and take no account of higher productivity due to additional machinery and equipment and improved working conditions. The Aydin example does take into account the higher productivity of workers in 6 "persons engaged" units as compared with that of workers in 3 "persons engaged" units as indicated in the footnotes.

Although the above figures, especially the Aydin data, are based on a number of assumptions and must therefore be accepted with some reserve, it would appear as if the return on investment achieved by moving to an industrial estate is in fact very satisfactory and also certainly higher than the estimated figures.

#### IV CONCLUSIONS

##### General

1. The Turkish small industry industrial estates programme is undoubtedly successful and is beginning to make an important contribution to industrialisation and employment in what appears to be a reasonably economical manner. The evidence suggests that it is still growing and should make an even more significant contribution in the future. The success of the small industry estates is prompting larger scale industrialists to promote cooperative action of the same type.
2. The determination of the return on investment in these estates is difficult, since comparative figures for other methods of housing industry in adequate conditions is not available. From the calculations made on the return to industrialists at Ceyhan and Aydin, it would appear to be very high. In terms of building and infrastructure cost per post of employment created, it was reasonably economic in the past but recently the cost has risen considerably.
3. The absence of adequate statistics, especially statistics relating to industrial estates, has made all conclusions rather tentative and figures indicative rather than substantive. A common definition of "small industry" in all Government bodies would facilitate future analyses and action.
4. The first and perhaps most important reason for the success of this programme lies in the character and abilities of the Turkish entrepreneurs and skilled workers. Certainly the cooperatives have succeeded to the extent which they have because the people are prepared to trust one another. The average small entrepreneur is an honest man. It was stated that industrialists on the estates were very rarely late with their interest and loan repayments to the banks and even more rarely do they default. Producer cooperatives are notoriously difficult to make succeed and in some countries they have failed precisely because of a lack of mutual trust among the members.

### The Role of Government Policy

5. Government policy over the last eleven years has done a great deal to stimulate industrial estate development and guide it on to sound lines. Although a number of initiatives were taken before the Government programme started, they seem to have dragged on and only really got under way when the Ministry injected funds and advice. There was initially, as everywhere, a great deal of scepticism but as small industrialists and some larger ones saw their colleagues on the estates expanding their business, they have sought to follow. The facilities for obtaining credits for building are so much less onerous than those available commercially that entrepreneurs seeing the need to expand and have better working conditions do not have to be faced with the burden of heavy repayments and therefore are prepared to take the plunge, the more so because what they are offered is both better and cheaper in most cases than they could possibly obtain privately. At the same time, the Ministry's insistence that cooperatives should have the money available to purchase land and lay down the infrastructure ensures that only those who are serious about participating and able to do so come on to the estates.

6. The executing agency system seems a very sound one for a number of reasons. In the first place, the executing agency forms a focal point through which both Government agencies - notably the Ministry of Industry and Technology - municipalities and banks negotiate with the members of the estates and channel financial and other aid to them. Secondly, it offers support for its members and a forum in which ideas of benefit to all can be developed and problems attacked. The fact of working together in the cooperatives brings the industrialists into close contact and benefits them commercially and professionally.

7. Two Government policies seem especially worthy of comment. The first is in the insistence of the Department of Small Industry and Handicrafts on promoting existing entrepreneurs rather than trying to promote new ones on the grounds that there are already sufficient with development potential. The second is the acceptance of the large number of repair workshops on the estates, even though the primary aim is to promote manufacturing industry. The policy is beginning to pay off, because many firms which started in repair work are now manufacturing and even developing their own products. This latter policy is contrary to that practised in certain other countries.

8. Most important is the discipline imposed throughout the process of founding estates and granting credit. This seems to be one of the reasons for the comparatively low drop-out rate. The Department now has substantial experience and is manned by knowledgeable and dedicated civil servants, although very under-staffed. The survey teams are able to assist materially in the planning of new estates, including the specification and design of buildings. The Department also has powers to examine the affairs of the cooperatives and ensure that deficiencies are rectified. In this way the cooperatives, which are usually founded by people with little or no experience of cooperation or of large scale business enterprise (which is what an industrial estate involving several million dollars worth of investment is), can be assisted in their formative periods and the managing boards enabled to develop the necessary administrative skills. Many of the problems and delays in the establishment of estates occurred where cooperatives had gone ahead before seeking Ministry assistance and even before the Government programme was launched.

#### Some Economic Considerations

9. The country is involved in a rapid economic and industrial expansion. A large part of the manufacturing industry and almost all the repair work in certain fields such as automobiles and agricultural machinery is in the hands of small and very small industry and artisan workshops, a phase through which the industrialised countries passed at various periods in the last 150 years. Some special features of the Turkish scene at present favour this state of affairs such as the heavy importation of cars in need of a great deal of repair and servicing, mentioned in the Report, the predominant role of agriculture in a large country with fairly widely scattered centres in which the machinery and equipment can be serviced, and the fine mechanical aptitudes of the skilled workers, some of the best of whom become small entrepreneurs, particularly if they have spent some years in Western Europe. The accumulation of capital and the possibilities of buying machines while abroad is certainly an important factor in the burgeoning of these small workshops.

10. The industrial estates can be shown to be contributing to this development. They will almost certainly, as time goes on, contribute to a changing structure of industry as the most energetic and enterprising of the industrialists on the estates begin to organise themselves more effectively, increase their productivity and the quality of their products and reduce their costs. They will grow larger and some of their colleagues will be put out of

business or absorbed. On two of the estates visited, (Konya, Aydin), some firms were already outgrowing their accommodation and building factories outside or moving to large industry areas. The process is likely to accelerate. A similar process will probably take place in the auto and agricultural equipment repair fields and the most efficient and reliable establishments will become larger and more comparable to such establishments in Western Europe.

11. The proximity of firms in the same and related trades on the estates is already having an important influence on intra-estate contracting and this trend will certainly continue. It may allow some of the smaller firms to survive longer than they would otherwise have done, because it enables the larger ones to dispose of additional capacity without the need for further capital investment. The small sub-contractors can only continue, however, if they take the trouble to understand the business of sub-contracting and ensure that they do not become overly dependent on single sources of orders.

#### Utilisation of Productive Resources

12. Large industry in Turkey, especially in the engineering field, seems to be still new and rather self-sufficient. This is characteristic of a certain stage of industrial development. It has so far not embarked on wide-spread contracting to smaller firms. It is to be hoped that when the large firms' programmes to be set up in the immediate future are planned, some provision will be made for them to use the considerable capacity which exists in the small industry sector from the very beginning, and on a nation-wide basis. In this way the machine shop capacity in the country as a whole, which at present appears to be under-utilised, certainly on the estates visited, will be more efficiently exploited.

13. The establishment of industrial estates and industrial areas should make it easier for the Government to control the import of production equipment more effectively, since the grouping of hundreds of small shops together make capacity utilisation studies much simpler. The optimum use of foreign currency resources is of vital importance to the country's development and the expenditure on investment goods (U.S. \$ 1,289,000,000 in 1974), represents a most important drain on those resources. Industrialists in a country at the



stage of development of present day Turkey tend to try for self-sufficiency and consequently often purchase specialised plant which is only used spasmodically. Given the proven capacity of the members of the industrial estates to cooperate, there seems no reason why they should not be led to cooperate more closely in this field. It will, however, need a lead from the Government especially the Ministry of Industry and Technology, and a very active educational campaign. However, the money and efforts invested in such a campaign, if used effectively should pay good dividends both nationally and to the individual entrepreneur.

Common Facilities, Extension Services and Training

14. Common facilities on the estates visited, particularly in such facilities as maintenance workshops and technical libraries still appear to be little developed.

15. Almost everywhere there was a demand for more technical aid and advice both in the fields of technology and of management. Those industrialists who had participated in or used the training programmes put on by the Department of Small Industry and Handicrafts were eager for more. The Gaziantep Centre is already proving itself and the demand for the extension services as well as the workshop and laboratory services is growing fast. Fields mentioned by industrialists included marketing and accounting. A glance at most of the workshops shows a great need for advice and assistance in technology and in the organisation of production. Managerial training will become increasingly important as more of the small firms begin to grow to the point where the owners can no longer carry out all the supervisory and marketing functions themselves. The Turkish Management Development Centre should be asked to cooperate in this field.

16. It is to be hoped that the National Small Industries Development Centre now being set up in Ankara as a result of the Gaziantep experience will develop quickly and be able to extend its services to estates all over the country. Major centres such as Istanbul and Izmir should have sub-centres with at least some of the physical facilities of Gaziantep. It is recognised that the development of these services to form a nation-wide network will be expensive. It would be worth exploring the possibilities of either a levy, initially, perhaps, on small firms in industrial estates, on the lines of the levy on industry which is used to develop vocational schools and upgrading programmes. An Al-

ternative also worth considering would be to form an association in which member firms pay a basic fee entitling them to a certain amount of advisory and other services free, with reduced payments for additional services.

17. Great care should be taken in the selection of first line field personnel who will be the main contacts with the small industrialists. These latter are usually men of little formal education but with great practical experience and good sense. They are often put off by graduate engineers and economists to whom they may offer exaggerated respect but whom they will, at the same time, find too theoretical. A field staff of sound technicians drawn from good practical workshop men in industry, who can take their coats off and show the industrialists how to improve the performance of their equipment and can talk their language is more likely to have its advice acted upon. A very high proportion of workshop problems can be solved in this way. There should be a back-up staff of graduate engineers, technologists and economists to deal with problems where deeper theoretical knowledge and understanding or research are needed.

18. While the need for much more intensive and extensive action by Government is recognised, more could be done by local initiatives if leading members of industrial estates would take the time and trouble to start them, particularly in training. It may, however, need some stimulus from the Ministry.

#### Implementation of Construction

19. There are great variations in the time lapses between initial action to set up estates and their finally becoming operational. There is some indication that estates started recently are being terminated more quickly, but the improvement is not great. The Department has contributed a great deal to developing standard procedures, but more seems necessary.

#### Financing Equipment Purchases and Working Capital

20. A complaint met with almost everywhere was the difficulty in obtaining loans from the Halk Bank for the purchases of equipment and for working capital because the bank wanted land and buildings as security, while these were generally mortgaged to the Ministry for the building credits. Nobody encountered seemed to know of the possibilities of forming production cooperatives for this purpose and it may be that the Ministry should give greater publicity to this device.

### Sub-Contracting

21. The question of sub-contracting was touched upon in Conclusions 11 and 12 above. Inter-firm sub-contracting on the estates is progressing, although no doubt more could be done. Sub-contracting to large firms on a national scale still seems to have a long way to go.

### New Products

22. The estates seem to have provided some stimulus to the development of new products in the sense of products which the firms concerned were not previously making and in some cases to the development of improved products.

### Exporting

23. There is little exporting by firms on the small industry estates, although at least one firm is preparing for a major export order. Most of the industries on the estates visited would not lend themselves to direct exports, but a study might reveal unsuspected export potential which could then be stimulated. The Manisa Industrial District was the exception and it will eventually become an exporting centre.

### Development of Secondary and Tertiary Industries and Improved Public Amenities

24. There was little evidence of the estates having stimulated industries other than the services on them. Nor was there much evidence of improved public amenities.

### Labour Unionisation

25. On only one estate (Aydin) was there some trade union activity among small industrialists taking place.

### Safety and Health

26. Although the shops on the industrial estates were, for the most part, infinitely better and more spacious than the workshops seen in the cities, working conditions in many cases left much to be desired. Safety measures were virtually non-existent; machines were unguarded and no one was seen wearing protective clothing such as goggles, or gloves for handling metal sheets. Many of the workers were quite young boys who were exposed to all sorts of hazards. The accident rate is not known but it must be fairly high. Only one estate had a functioning first aid post: posts were planned for some others. It is suggested that as a first step the supplying of goggles, gloves

and protective aprons, comparatively cheap items, should be made compulsory. At the same time, an educational campaign should be developed, in conjunction with the Ministry of Labour, which would stress the economic aspect of accidents, loss of production through absenteeism and lost time and often damage to machines and equipment.

A P P E N D I X I

PRINCIPAL ORGANISATIONS VISITED AND PERSONS CONTACTED

Ministry of Industry and Technology

Under Secretary	Mr. Mehmet Gülhan
Director General - Small Industry and Handicrafts Dept.	Mr. Ayhan Karlıdağ
Team Leader - National Small Industries Development Centre	Mr. Attila Çoruh
Industrial Economist - N.S.I.D.C.	Mr. Tahsin Ozbazoğlu
Director - Small Industries Development Centre, Gaziantep	Mr. Kamal Başer
Deputy Director (Technical) S.I.D.C.	Mr. Fırat Erim
Finance and Accounting Expert S.I.D.C.	Mr. Ahmet Ayhan

Ceyhan

Chairman of the Building Cooperative	Mr. Ziya Bakıtkal
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Konya

Director - Ministry of Industry Regional Office	Mr. Halim Selgali
Chairman - Karatay Building Cooperative	Mr. Macit Erkan
Vice-Chairman " " "	Mr. Darus Karahan
Board Member - Marm " "	Mr. Resa Bulcsaran
" " " " "	Mr. Mehmet Boyler

Akskhir

Representative of the Provincial Governor  
Vice-Chairman of the Building Cooperative

Ardiz

Director of the Building Cooperative and Industrial Estate	Mr. Hüseyin Gökçetin
Manager - Industrial Estate Branch, Halk Bankası	

Manisa

Local Representative - Ministry of Industry	Mr. Kadir Ceyhan
Director - Manisa Industrial District	Mr. Ersem Metin

Gediz

Mayor and Chairman Industrial Estate Executing Agency	Mr. Kamal Yosunaz
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APP. I

Polatli

Chairman - Building Cooperative

Mr. Halit Urek

Gaziantep

Secretary - Chamber of commerce and  
Industry

Mr. Kemal Kaleli

Director - Metalworkers' Association

Mr. Terfik Demirel

Director - Automobile Repairers' Association

Mr. Halit Erbuğa

İzmir

Director - Ministry of Industry Regional  
Office

Mr. Ahmet Rensî Hadîpeğlü

Chairman - 2nd Industrial Estate Building  
Cooperative

Mr. Ferit Semakın

Chairman - 3rd Industrial Estate Building  
Cooperative

Mr. Hasan Özer

United Nations

Resident Representative - U.N.D.P.

Mr. Neşim Şallen

Assistant Resident Representative -  
Programme Office

Mr. Besidar Radević

Programme Assistant - UNIDO

Mrs. Inci Kurum

Project Manager - National Small Industries  
Development Centre

Mr. K.L. Venjappa

Team Leader - Small Scale Industries

Mr. M.P. Kuntić

Development Centre, Gaziantep

Expert -

Mr. Otto P. John

Expert -

Mr. Michael E. Tucker

In the course of the various visits a very large number of people were met with, including industrialists, some of whose enterprises have been described in the notes on the estates. The average was probably 10 people on each estate.

A P P E N D I X    I I

NOTES ON THE METHODOLOGY OF THE STUDY AND SOME PROBLEMS ENCOUNTERED

Methodology

The first four working days were spent in Ankara in the Department of Small Industry and Handicrafts of the Ministry of Industry and Technology. An office was allocated in the temporary premises of the National Small Scale Industries Development Centre adjacent to that of Mr. K.L. Nanjappa, UNIDO Project Manager. During this period the following activities were undertaken:

- (1) collection of national statistics relevant to the study;
- (2) discussions with officials of the Department, including the Director General, on conditions in the country and the Government's policies on small industry and industrial estates;
- (3) drawing up a programme of visits with the officials concerned and preparing questionnaires and documentation for use in the field;

The first visit, to the Polatli estate, an hour's drive from Ankara, was undertaken on the first Friday. It was possible to try out the usefulness of the questionnaire (an aid memoire to the research worker and not presented to interviewees), and to start developing a routine adapted to the practical conditions. This routine was broadly followed throughout subsequent visits and proved reasonably satisfactory.

It consisted of the following sequence:

- meeting in the Estate Administrative Office or another available place with the Chairman of the Building Cooperative and senior Board Members. On three occasions local representatives of the Ministry of Industry were present;
- Mr. Attila Çoruh, the Team Leader of the National Centre, who accompanied the research worker and acted as interpreter, introduced him and explained the purpose of the visit;<sup>1</sup>

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<sup>1</sup> At Gaziantep only the guide and interpreter was Mr. Ahmet Aydin.

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- through the interpreter, questions were asked following the sequence laid down in the questionnaire. As experience was gained, the interpreter became skilled at keeping answers to the point. This phase, involving a lot of discussion, usually lasted from one and a half to two hours.
- visits were then made to two or three firms on the estate. Brief discussions were held with owners to obtain data permitting estimates of volume of business, increase since coming to the estate, increase in employment and the like. This phase took, perhaps, a further one to one and a half hours.
- wherever possible, notes were typed up at the end of the day while impressions were still "warm".

Mr. K.L. Nanjappa participated in the tour through Central and Western Anatolia. He contributed valuable insights into the discussions.

Before going on to discuss some of the problems connected with the study, it must be reiterated that the cooperation of the officials in the Ministry of Industry and Technology could hardly have been more complete. No trouble was spared in obtaining statistical data asked for, even from other Departments; the tour arranged provided a spectrum of industrial estates in the country as complete as could be expected in the time available; the interpreter used his wide knowledge of the subject to interpret in depth. The Director General of Small Industry and Handicrafts spent several hours in discussion, explaining points of policy. Individual contributions are acknowledged in the Introduction.

Problems

There were a number of problems associated with the study which tend to make the conclusions indicative rather than definite. Some of these problems are to be found in all countries in which a foreigner not being fluent in the language has to make studies. Others are common to most developing countries which have not yet had time to build up an infrastructure of statistical and other information adequate for the process of industrialisation. Distances between estates restricted the number which could be visited and the working time per day.



The fact that the department sponsoring the study was the Department of Small Industry and Handicrafts meant that detailed data obtainable on large and medium industry and industrialised estates or areas was rather limited.

(1) General Statistics

The latest detailed statistical data on small industries issued by the State Institute of Statistics are for the year 1970. General industrial statistics date from 1963, but through the efforts of one of the officials of the Department of Small Industry it was possible to obtain some overall figures for 1970. Detailed population statistics also date from 1970, since when there has been a global population rise of about 12 per cent, according to overall figures recently released from the September 1975 census, with a probably greater proportional increase in the major cities.

The tables of small industries estates issued by the Department (Tables 2 and 3) are incomplete, in that they only include industrial estates receiving credits from the Government and do not include large and medium industry industrial areas. The figures given in these tables for costs of buildings and Government credits do not always agree with those supplied by the informants on the estates visited. For the purposes of this enquiry, this is probably not of great importance.

One tiresome problem is the difference in definitions of "small industries" used by the State Statistical Institute on the one hand and by the Ministry of Industry on the other. The Statistical Institute defines small industry as:

any establishment in which less than 10  
persons are engaged in productive activities.

The Ministry of Industry definition is:

any enterprise engaged in manufacturing  
(including repairs) using power equipment  
to a capital value of not more than TL 5,000,000.

Until very recently the figure was TL 2,500,000. Few of the small industries visited employed capital equipment of as much as TL 5 millions and some of these using much less were employing 20 and more workers. This leaves an unknown number of firms to be deducted from the "large and medium industry"

APP. II

total in Table I and added to the small industry section. As the Institute of Statistics figures include establishments in which no power is employed, in effect, handicraft workers, many establishments have to be deducted from the global figure for small industries. According to the 1970 Census, of 170,123 small establishments, 114,920 employed no power equipment and would thus be automatically excluded from the Ministry of Industry's definition.<sup>1</sup> It seems probable that this number may have been drastically reduced in the past five years as operations have tended to become more sophisticated.

Finally, the last three or four years have seen an upsurge in industrialisation at all levels and the figures for 1975 must certainly be a good deal greater than those for 1970.

A reasonable degree of accuracy in these figures is desirable, since the contribution of industrial estates to the total effort for industrialisation can only thus be seen in perspective.

The employment statistics given in the 1970 Census are also suspect. In 170,123 establishments it is claimed that there are only 98,325 employees, while 324,908 persons are "engaged". It is not clear whether this includes employees or not, but from the large and medium industry statistics it would appear to do so. There are no general statistics for numbers employed on industrial estates and thus the contribution of the estates' employment and any effort to assess it must be very tentative. (See main text - Section II)

(2) Statistics of individual Estates and Firms

General statistics relating to investment, number of firms and in some cases, breakdowns of industries represented, were given by the Chairman of cooperatives or estate Directors in the course of interviews, since they were available from official records. However, it was difficult to obtain figures for total employment and increases in employment since the estate had been established and almost impossible to obtain average figures for employees or "persons engaged" per firm. As noted in the main text, the interviewers were naturally shown the firms which were the most successful and which reflected credit on the estates concerned which certainly tended to have growth rates above the average.

<sup>1</sup>

State Institute of Statistics, op.cit. Table IV, p.19.

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No industrialist anywhere in the world will normally release figures of output and turnover, still less of net revenue, to a foreigner accompanied by a Government official. The estimates of sales revenue made in two of the visit reports in Appendix III were obtained by asking for prices at one point in the discussion and output at another, but there are no means of knowing what they are worth.

It must be remembered that everyone involved in answering the research worker's questions were doing so entirely voluntarily and within a time interval too short to establish real confidence. Most of them probably had only the vaguest idea what the study was all about, even after it had been explained. Many of the industrialists were practical men of little formal education. There are limits beyond which courtesy prevents pressing for detailed information. Time was sometimes a factor, since a certain amount of time, which varied in almost every case, had to be spent in rather general conversation, establishing some kind of "rapprochement" between interviewers and interviewees. Considering that most of those concerned had very little forewarning of and probably even less information about the visits, the degree of helpfulness and courtesy shown by everyone was remarkable and seems to be a part of the Turkish character.

(3) Inflation and Devaluation

The Turkish economy has been suffering over the last two years from an inflation rate of 19 per cent. It has been seriously affected by increases in cost of machinery purchased from Western Europe, even from West Germany, where the inflation has been held down fairly well. The devaluation of the Turkish lira (from TL 9 in 1970 to TL 15 to one dollar in autumn 1975) has further contributed to the rising costs of equipment and raw materials; its value relative to the dollar understates the effect because the dollar itself dropped in relation to most European currencies, especially the Deutschmark. Comparisons in values of output or input in successive periods are therefore not very meaningful. The degree of inflation is clearly indicated in the rise in building costs per unit between Table 2 and Table 3.

(4) Distances involved

A glance at Figure I showing the location of industrial estates in Turkey will show how widely they are dispersed. In order to obtain a reasonably representative picture of Turkish industrial estates it was necessary to visit estates in different parts of the country, for example, these in the

rich agricultural areas and those in the cities. Apart from the visit to Gaziantep and flying to Adana, it was more convenient to do the main tour by car. The original plan of visits proved over-ambitious since, among other things, it was necessary for the research worker to complete his notes in time to show them to Mr. Attila Çoruh for correction of omissions and errors. Even the revised programme entailed spending many hours driving, including a Sunday, starting very early and generally arriving fairly late in hotels. This was inconvenient only from the point of view that it both curtailed the number of visits which could be done and involved late hours writing up notes.

(5) Interpretation

It is always more difficult to conduct interviews through an interpreter than directly, especially when the latter has to interpret in both directions over many hours, however good he may be. Mr. Çoruh was an excellent interpreter since he knew the subject well as well as having a good command of English. He managed to keep discussion on the rails to an admirable degree. All the same, it is very difficult to extend discussion of obscure points through an interpreter and sometimes to get across the nuances of what one is trying to say. One cannot keep re-phrasing questions which are not understood the first time or establish quite the degree of intimacy which even a moderate knowledge of one's interlocutor's language permits. This being said, the amount of information forthcoming was considerable, and it is a tribute to the quality of the interpretation as well as to the goodwill of all concerned.

APPENDIX III

REPORTS ON INDIVIDUAL INDUSTRIAL ESTATES

Below are the reports on the individual industrial estates visited in the course of the study. Seven of these were fully or partly operational, five were under construction. Statistical and standard data are given on the forms; amplifying comments are to be found in the Notes. The following abbreviations and symbols have been used on the forms:

- \* "See notes", where there is not room to write "See notes".
- x Exists. In the case of industrial units, the number is unknown.
- P Planned but not yet constructed or operative.
- - None reported. Probably there are none.
- NA Information not available.
- + (Plus) - An unknown quantity more than the figure given.

<sup>1</sup> City populations are from the 1970 Census. 1975 figures are likely to show increases up to 20 per cent in some cases and even more.

<sup>2</sup> The code for industries is as follows:

AR	Agricultural Equipment Repairs	F	Foundries
AM	" " Manufacture	M	General Metalworking
TR	Tractor Repair	Met.	Metallurgy
Au.R	Automobile Repair, all branches	S	Sawmills
Au.P	" Painting	C	Carpenters
Au.M	" Parts Manufacture	Fu.	Furniture making
GM	General Engineering Machine Shop	T	Tanning
EP	Engineering Products	L	Leather Goods manufacture
B	Blacksmiths and Forges	Chem.	Chemical Industries incl. soap, salt etc.

**INDUSTRIAL ESTATES STUDY**

**TURKEY**

CITY CAYHAN		ESTATE CAYHAN		OPER/INDUS/CONSE		STUDY NO. A.1						
<b>1. REGION</b> Adana		<b>2. CITY POPULATION</b> <sup>1</sup> 21,183		<b>3. EXECUTING AGENCY</b> Cooperative								
<b>4. PHYSICAL DATA</b>		<b>Planned</b>	<b>Actual</b>	<b>5. OWNERSHIP</b> Local Industrialists - Relocated								
Total Site Area (m <sup>2</sup> )		108,000	122,000	<b>6. PERSONS ENGAGED</b> (Estimated Total)		<b>Before</b>	<b>Now</b>					
Buildings Area (m <sup>2</sup> )		26,300	24,770			1,500	3,000					
Roads, Green, &c (m <sup>2</sup> )		NA	NA	<b>Est. Average per Unit</b>		NA	12					
Industrial Bldgs. Total		293	244									
<b>Covered &amp; Open Working Areas</b> (m <sup>2</sup> )		<b>Covered</b>	<b>Open</b>	<b>Number</b>	<b>7. LEFT ESTATE</b>		<b>Number</b>					
<b>Type of Building</b>					<b>Business Failure</b>		-					
A		50	-	102	<b>Relocated - Larger Premises</b>		-					
B		100	-	79	<b>Left to Europe</b>		-					
C		120	-	6	<b>Death</b>		3					
D		150	-	7								
E		200	-	50								
F		-	-	-								
G		-	-	-								
<b>8. INDUSTRIES REPRESENTED</b> <sup>2</sup>												
AR	x	As.R.	x	GI	50	P	x	S	-	T	-	x - No. unknown
AM	x	As.P.	70	EP	x	M	x	C	x	L	-	- None
TR	x	As.M.	x	B	x	Met.	-	Fa.	-	Chem.	-	
<b>9. SERVICES &amp; COMMON FACILITIES</b>												
<b>Services</b>		<b>Transport</b>		<b>Admin. Building</b>		<b>Amenities</b>						
Electricity	x	within Estate	-	Conference Hall	-	Fire Brigade	-	Barber	x			
Water	x	External	x	Exhibition Hall	-	First Aid	-	Warehouse	-			
Sewerage	x	Bus		Tech. Library	-	Post Office	-	Shops	-			
				Meeting Rooms	-	Bank	x	Restaurant	x			
				Workshops	-	Showers	x	Police Post	-			
<b>10. PROGRESS IN IMPLEMENTATION</b>				<b>11. FINANCIAL DATA</b>								
Cooperative founded		Date		Land		TL						
Land purchased		1965		Infrastructure		486,000						
Application to Min. of Industry		1966		Industrial Buildings		15,800,000						
Infrastructure completed		1966		Other Facilities								
Industrial Buildings started		NA		Total Expenditure to date		16,286,000						
" " completed		1967		Government Credit		7,269,600						
		1972-74										
<b>12. SUBCONTRACTING WITHIN ESTATE</b>				<b>13. USE OF LOCAL MATERIALS</b>								
Greatly increased - little or none before.				Little or none - mainly metalworking.								
<b>14. NEW PRODUCTS DEVELOPED</b>				<b>15. SECONDARY/TERTIARY INDUSTRIES</b>								
Spare parts for autos; gears & shafts for ag. equipment; plastic parts for auto mfrs.				Services on the estate.								
<b>16. EXPORTS</b>				<b>17. PUBLIC AMENITIES</b>								
None directly.				Improved bus service.								
<b>18. LABOUR UNIONISATION</b>												
None.												

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A.1. Notes on the Ceyhan Industrial Estate

Ceyhan is a town of over 50,000 inhabitants lying just off the Adana/Gaziantep highway some 40 kilometers east of Adana in a rich agricultural district producing cotton, rice and citrus fruits. The industrial estate is about one kilometer from the city. It was the first operating estate visited during the study mission.

The estate is laid out on a gridiron pattern without green spaces. The longitudinal avenues are broad, but some of the cross roads are narrow and must be inconvenient when manoeuvring trucks to the buildings. The workshops are designed to a standard pattern with an upper floor covering about half the area. In some cases two workshops have been merged to form a large one. They are provided with washing facilities and toilets. The concrete staircases generally seem to have no handrails. The condition of most of the buildings is already rather poor.

As in all the small industries estates seen, the main activities are auto and agricultural machinery repair, general engineering machining and other metalworking, including foundries and forges. There are one or two manufacturers of plastic articles who have started up since the estate was created and some woodworking plants which were not seen. Three firms were visited.

Construction of the Estate - The cooperative was founded in 1965 and the land purchased in 1966. An application was made to the Ministry of Industry for financial assistance in 1966 at which two development plans were submitted, one for six and one for four years. The Ministry approved the four year development plan. Some delays were caused by members of the building cooperative failing to pay their shares. The apparent delays in completing the buildings were not explained.

Firms visited

1. Engineering Machine Shop - Making spare parts for automobiles. Investment in machine tools is said to be about 2 million TL. Most of them have been bought since moving to the estate. There are some good machines, but they are almost certainly badly under-employed. Workforce was given as 16, mainly boys. Working conditions are good, in that the premises were light and airy, but there was no evidence of even element-

App. III

ary safety precautions. Quality and finish of products seemed good.

2. Engineering Machine Shop - Gears and shafts for agricultural machinery. Owned by the Chairman of the Cooperative. Investment in machine tools is said to be one and a half million TL. The housekeeping was poor, but all machines were working and the tempo of work seemed high. There are 14 employees, about half are boys. The workforce has doubled since coming to the estate. The owner started in a very small way and has trained himself. Parts are reproduced by measuring up originals, on which it is claimed improvements are sometimes made. All the workers can use micrometers and other measuring devices.
3. Plastic Moulding Plant - The owners of this plant, originally an engineering machine shop, have branched out into plastic moulding and are making a range of replacement parts for firms such as Fiat and John Deere, (agricultural machinery), which are sold under the parent firms' names, and thus under quality guarantee. 70 per cent of the machinery has been bought since moving to the estate. There are 23 employees. The firm makes its own tools and dies, which appear to be of a high standard. Improvements have been made in some of the replacement parts by substitution of new plastic materials giving greatly extended working life.

Return on Investment - The total expenditure to date is given as TL 16,286,000. (U.S. \$ 1,085,700), and Government credits of TL 7,269,600. (U.S. \$ 484,600) have been provided. During the three years that the estate has been in operation, (only partly at first), firms seem, on an average, to have at least doubled their sales; revenues are said to have increased in two or three years by 20 - 25 per cent after allowing for inflation. Employment has at least doubled. The placing of orders between firms within the estate, almost non-existent when they were scattered about the town, is now done on a substantial scale and is increasing. The average investment per firm, in land, infrastructure and buildings (which obviously varies considerably), is about TL 68,000. (U.S. \$ 4,500 approximately), which seems small compared with the benefits obtained by most of them.



**INDUSTRIAL ESTATES STUDY**

TURKEY

CITY KONYA      ESTATE KARAM      OPER/MINER/CONSOX      STUDY NO. A.2.

1. REGION Konya      2. CITY POPULATION<sup>1</sup> 200,000      3. EXECUTING AGENCY Cooperative

4. PHYSICAL DATA		Planned	Actual	5. OWNERSHIP Local Industrialists - relocated		
Total Site Area (m <sup>2</sup> )		200,000	200,000	6. PERSONS ENGAGED (Estimated Total)		Now
Buildings Area (m <sup>2</sup> )		150,000	150,000	* 300 persons		2,000-4,000*
Roads, Streets &c (m <sup>2</sup> )		50,000	50,000	Est. Average per Unit		5 - 15
Industrial Bldgs. Total		237	200	7. LEPT ESTATE		
Covered & Open Working Areas (m <sup>2</sup> )	Covered	Open	Number	Business Failure		Number
Type of Building				Relocated - Larger Premises		-
	A	-	-	Left to Europe		-
	B	-	-	Death		-
	C	-	-			
	D	-	-			
	E	-	-			
	F	-	-			
	G	-	-			

8. INDUSTRIES REPRESENTED<sup>2</sup>

AM	x	Al.R	x	GM	x	P	x	S	-	T	-	x - No. unknown
AM	x	Al.P.	x	EP	x	M	x	C	-	L	-	- None reported
TR	x	Al.N	x	B	x	Met.	x	Fu.	-	Chem.	-	

9. SERVICES & COMMON FACILITIES

Services	Transport	Admin. Building	Amenities	Information not available
Electricity	x	Conference Hall	x	Barber
Water	x	Exhibition Hall	x	Warehouse
Sewerage	x	Tech. Library	P	Shops
		Meeting Rooms	x	Restaurant
		Workshops		Police Post

10. PROCESS IN IMPLEMENTATION	Date	11. FINANCIAL DATA	TL
1st Committee founded - 1955	1956	Land	270,000
Cooperative founded	1956	Infrastructure	15,790,000
Land purchased	1966	Industrial Buildings	
Application to Min. of Industry	1966	Other Facilities	
Infrastructure completed	1968	Total Expenditure to date	16,000,000
Industrial Buildings started		Government Credit	7,000,000
" " completed			

12. SUBCONTRACTING WITHIN ESTATE: Widespread - due entirely to relations on the estate.

13. USE OF LOCAL MATERIALS: None - firms are all metalworking or auto industry.

14. NEW PRODUCTS DEVELOPED: Spot welding machines; helical gears; hand metal shears.

15. SECONDARY/TERTIARY INDUSTRIES: Not known.

16. EXPORTS: None directly.

17. PUBLIC AMENITIES: New road, street lighting, bus services.

18. LABOUR UNIONISATION: None

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A.2 Notes on the Kenya - Meram Industrial Estate

Konya is the capital of a province of the same name lying about 200 kilometers south of Ankara on the southern edge of the Central Anatolian tableland. It is an important tourist centre and centre of pilgrimage as being the market and commercial town for a rich wheat and sugar beet growing area.

The Meram Industrial Estate is one of the oldest in Turkey and was created well before the official Government policy on industrial estates was established. The idea developed in a small group of industrialists in Kenya who were dissatisfied with conditions in the town. They formed a committee in 1954, later converted to a cooperative, composed initially of 250 members, later enlarged to 500. The compulsory share was TL 1,300.

Using its own funds the committee bought 200,000 square metres of land and engaged the services of consultants for the layout and architectural work with advice from the Ministry of Reconstruction, which is responsible for town planning.

In 1965 the cooperative ran into financial difficulties and after taking some loans commercially at high interest, applied to the Ministry of Industry, then at the beginning of its industrial estates action. The Ministry tried to modify some of the physical features of the estate, but work was already too far advanced. However, it forced cooperative members in service industries such as retailers and restaurant owners to leave the cooperative. The present Vice-Chairman of the Cooperative is the oldest member. He was originally a technical high school teacher who set up as a machinist at a time when there were only ten or fifteen engineering machinists in Konya. As his activities expanded, he found it difficult to get larger premises and this decided him to help set up an estate.

Construction of the Estate - It may be noted that although construction was started in 1959, the buildings were not completed until 1968. This was mainly due to the financial problems mentioned above.

Sub-contracting - Many of the firms are working on sub-contracts from firms outside the estate, including foreign firms. The placing of contracts between firms on the estate is now widespread. There is improved use of capacity through the giving of machining contracts by firms which are over-loaded.

Ann. III

Training Facilities - The estate offers no training facilities of its own. Firms send workers to evening classes at the local technical school. The Ministry of Industry has given training programmes using its mobile vans.

Employment - The number of employees fluctuates seasonally, rising sharply during the harvest to meet the demand for agricultural machinery and tractor repairs.

Firms visited

1. Engineering and electrical products - The owner, who graduated from technical high school in electrical technology, has copied features in various makes of spot welding machines to develop one of his own. He manufactures three sizes and sells about 50 per month, through dealers across the country. Before moving to the estate, he was only able to produce 20 per month. He employs seven workers, all skilled or semi-skilled, no boys.
2. Engineering Machine Shop - The owner spent five years with the Siemens company in Germany. He is now producing machined casting for Siemens to fine limits in quantity. Using his own investment he started with one lathe and now has seven machines of good quality including a lathe with profile copying attachment. Investment estimated at more than one and a half million TL. He is also making a small metal hand guillotine. He employs seven workers.
3. Engineering Machine Shop - Specialises in helical gears which are cut on milling machines with dividing heads. The investment is said to be one and a half million TL: the latest machine cost TL 210,000. The owner joined the estate in 1973 with one milling machine and now has three. Drawings are supplied by the firm to which he is sub-contracting. He employs 6 to 9 workers, two of whom can read drawings.

Return on Investment - The total expenditure on the estate is given as TL 16,000,000. (U.S. \$ 1,066,666) or TL 32,000 (U.S. \$ 2,133) per firm on average, with a Government credit of TL 7,000,000 less than the maximum 60%. The low cost is mainly due to the fact that the estate was built before inflation set in. The return on investment would seem to be very high, even if all the firms have not achieved the increases in business quoted in the examples above. The Chairman considered that both turnover and employment had at least doubled in three years throughout the estate.

**INDUSTRIAL ESTATES STUDY**

**TURKEY**

<b>CITY</b> KONYA		<b>ESTATE</b> KARATAY		<b>OPER/UNDER CONST.</b>		<b>STUDY NO.</b> A.3.						
<b>1. REGION</b> Konya		<b>2. CITY POPULATION</b> <sup>1</sup> 200,464		<b>3. EXECUTING AGENCY</b> Cooperative								
<b>4. PHYSICAL DATA</b>		<b>Planned</b>	<b>Actual</b>	<b>5. OWNERSHIP</b> Local Industrialists - relocated.								
Total Site Area (m <sup>2</sup> )		400,000	400,000	<b>6. PERSONS ENGAGED</b> (Estimated Total)		<b>Before</b>	<b>Now</b>					
Buildings Area (m <sup>2</sup> )		NA	NA	Est. Average per Unit		NA	NA					
Roads, Green, etc (m <sup>2</sup> )		NA	NA			Increase said to be 100%						
Industrial Bldgs. Total		1,800	600*									
<b>Covered &amp; Open Working Areas</b> (m <sup>2</sup> )		<b>Covered</b>	<b>Open</b>	<b>Number</b>	<b>7. LEFT ESTATE</b>		<b>Number</b>					
<b>Type of Building</b>					Business Failure		-					
A		154	194	NA	Relocated - Larger Premises		**					
B		174	38	NA	Left to Europe		-					
C		30	19	NA	Death		-					
D		-	-	-	**30 firms have applied to move to the large industry estate. See notes.		-					
E		-	-	-			-					
F		-	-	-			-					
G		-	-	-			-					
<b>8. INDUSTRIES REPRESENTED</b> <sup>2</sup>												
AM	x	Am.R	x	GM	x	F	x	S	-	T	-	x - No. unknown
MI	x	Am.P	x	EP	x	H	x	C	-	L	-	- None reported
TR	x	Am.H	x	B	x	Met.	-	Fu.	-	Chem.	-	
<b>9. SERVICES &amp; COMMON FACILITIES</b>												
<b>Services</b>		<b>Transport</b>		<b>Admin. Building</b>		<b>Amenities</b>						
Electricity	x	within Estate	-	Conference Hall	P	Fire Brigade	-	Barber	P			
Water	x	External	x	Exhibition Hall	P	First Aid	-	Warehouse	-			
Sewerage	x	Bus		Tech. Library	-	Post Office	P	Shops	-			
				Meeting Rooms	P	Bank	-	Restaurant	P			
				Workshops		Showers	-	Police Post	-			
<b>10. PROGRESS IN IMPLEMENTATION</b>				<b>11. FINANCIAL DATA</b>								
Cooperative founded		Date 1966		Land		TL 9,000,000						
Land purchased		1967		Infrastructure		NA						
Application to Min. of Industry		1967 Apr. 1967		Industrial Buildings		NA						
Infrastructure completed		NA		Other Facilities		-						
Industrial Buildings started		NA		Total Expenditure to date		22,000,000						
" " completed		1974 contin.		Government Credit		4,000,000						
<b>12. SUBCONTRACTING WITHIN ESTATE</b>				<b>13. USE OF LOCAL MATERIALS</b>								
Widespread - due entirely to relations on the estate.				None - firms are all metalworking or auto industry.								
<b>14. NEW PRODUCTS DEVELOPED</b>				<b>15. SECONDARY/TERTIARY INDUSTRIES</b>								
None reported since going on to the estate.				None - firms are all metalworking or auto industry.								
<b>16. EXPORTS</b>				<b>17. PUBLIC AMENITIES</b>								
None directly. Some firms are sub-contracted to major firms which do export.				New road, street lighting, bus services.								
<b>18. LABOUR UNIONISATION</b>												
None reported.												

App. III

A.3. Notes on the Konya - Karatay Industrial Estate

Like the Konya - Meram Industrial Estate, the Karatay Estate is mainly composed of automobile and agricultural equipment repair firms and metalworking firms of various types.

The cooperative was formed on the ~~example~~ of the Meram cooperative. When Meram completed its first workshops there were difficulties in persuading firms to move out to them. The municipality therefore cut off their electricity and water. Now most of the small industrialists left in the town would like to move out and there is already an industrial area for large and medium industries. (See below)-

Construction of the Estate - The Cooperative ran into problems of approval of its loan by the Ministry of Industry which was delayed for two years. Further, the first contractors proved incompetent. Finally, the Cooperative took matters into its own hands, hired a civil engineer and bought the necessary raw materials. It is estimated that this saved 20 per cent on the building costs. It will be noted that though provision has been made for 1,800 units on the estate, only 600 have so far been built. The rate of construction depends on the harvest, directly or indirectly, since all the small industries in Konya are dependent on its success. It provides much work in maintaining and repairing the agricultural machinery and tractors and the money which the farmers will spend on both capital equipment and consumer goods. There are still 1,200 firms waiting for workshops on the estate and they hope to build at the rate of 200 a year. (One is led to ask why the Cooperative took such a small Government credit, as their present credit is only about 15 per cent of the building costs. This was not explained).

There are at present no facilities buildings. Plans have been made for the facilities shown on the form, together with a sports stadium, and credits were promised by the municipality which has so far failed to produce them. It is hoped to start on them next year with their own funds.

Sub-contracting - Firms are receiving contracts from manufacturers outside the estate; one firm producing cylinder liners has contracts with the Renault company, another is making brake drums for Fiat. Among the examples of contracting within the estate is a firm making valves for water pipes, which now distributes contracts to fellow members. This did not happen before. A manufacturer of steel motor truck bodies now buys all his components such as steel pins, hinges, etc., from the estate where he used to buy from wholesalers in the town.

App. III

Training Facilities - None provided by the estate. Workers are sent to the technical high school for upgrading and have participated in the Ministry of Industry programmes.

Firms visited

1. Automobile Engine Valve Manufacturers - This engineering shop manufactures valves for automobile engines by hot pressing. They have designed and made their own heavy friction press for this operation. In common with all the machines seen in the estate workshops, it has no protective devices. The investment in machinery is about 3 million TL. Markets are suppliers in Istanbul and Ankara. There are 20 employees, including boys. In four years output has doubled. The firm has been asked to quote by Renault and other motor firms.
2. Engineering Machine Shop - Making cylinder liners to close tolerances. Seven lathes, horizontal and vertical grinders. Investment about two and a half million TL. The owner had only an elementary education and worked as a boy in small machine shops, then served in a technical corps in the Army. All his workers read drawings and he has orders well into next year, but has machines idle for lack of skilled machinists. The works was outstanding for its cleanliness and tidiness; it would have been credible anywhere. The owner claimed that he had thought up the running of the works based on his early experiences of bad working conditions. He complained that credit for working capital was expensive and that he was paying 14 per cent for TL 500,000. (See below).
3. Motor Truck Body Works - This firm is run by the Vice-Chairman of the Cooperative. It makes welded steel truck bodies for bulk loads such as sand, gravel, ore and earth. His workshop is three times the size of the one he had in the town; it was impossible to find larger premises as a private individual and the municipality would not let him expand. He is now producing eight bodies per month instead of a maximum of two. His revenue has risen 300 per cent. Employees have increased from five to 15.

Problems - All the firms on the estate have increased their purchase of plant and equipment. There are problems of obtaining credit facilities from banks, notably the Halk Bank, because the Ministry of Industry holds the mortgages on the land and buildings and the banks do not like lending on equipment. These industrialists, in common with others met, do not seem to know of the possibilities of forming producers' cooperatives to obtain credit for equipment. (See main text).

Return on Investment - Total expenditure is put at TL 52,000,000.

(U.S. \$ 3,466,666) representing on the basis of the roughly 600 firms at present on the estate an investment of TL 86,666. (U.S. \$ 5,778) per firm. This will obviously be very much reduced when all the members of the Co-operative are lodged in their workshops. No figures are available for the value of sales, but clearly there is a very substantial return. The Chairman and the Vice-Chairman of the Co-operative consider that all firms on the estate have at least doubled the number of employees since moving in. Thirty firms have applied to move to the large and medium industry estate because they have outgrown their premises.

External Effects - The effects of the successes of the Meram and Karatay estates have been to stimulate other branches of industry to set up co-operatives and build industrial estates. Six such estates, of which the Ministry of Industry appears to have no record, have been set up outside Konya and are either operating or in advanced stages of construction. They are:

(1)	Woodworkers	880 workshops.	No Ministry of Industry credits
(2)	Blacksmiths	145 "	Apparently no Ministry credits
(3)	Auto Repairers	500 "	" " " "
(4)	Shoe Makers	288 "	" " " "
(5)	Plastic Mfrs	182 "	" " " "
			To move in 1975
(6)	Furniture Mfrs	372 "	In operation
		<u>2,367</u>	

It is worth noting that the above total represents almost exactly 50 per cent of the total number of units (5,762) incorporated in the Ministry of Industry's list of estates in operation.

In view of the fact that so many of the firms on both the small industry estates are in the auto repair business, it seems surprising that there 500 are left, and want to found another estate. The question is discussed in the main text.

App. III

Large and Medium Industry Estate - The large and medium industry estate occupies 2,500,000 square metres, of which 1,500,000 square metres are buildings. 45 firms from Konya have settled there, purchasing the land and erecting their own buildings. As stated above, 30 firms from the small industry estates are trying to buy land for further expansion.



**INDUSTRIAL ESTATES STUDY**

**TURKEY**

<b>CITY</b> AKSARIR		<b>ESTATE</b> AKSARIR		<b>OPER/INDUS/CONSTR</b>		<b>STUDY NO.</b> A.4.						
<b>1. REGION</b> Afyon		<b>2. CITY POPULATION</b> <sup>1</sup> 42,000		<b>3. EXECUTING AGENCY</b> Cooperative								
<b>4. PHYSICAL DATA</b>		<b>Planned</b>	<b>Actual</b>	<b>5. OWNERSHIP</b> Local Industri lists - relocated.								
Total Site Area (m <sup>2</sup> )		157,000	157,000	<b>6. PERSONS ENGAGED</b>		<b>Before</b>	<b>Now</b>					
Buildings Area (m <sup>2</sup> )		23,000	23,000	(Estimated Total)			1,200-1,500					
Roads, Green, &c (m <sup>2</sup> )		74,000	74,000	<b>Est. Average per Unit</b>								
Industrial Bldgs. Total		208	208									
<b>Covered &amp; Open Working Areas</b> (m <sup>2</sup> )		<b>Covered</b>	<b>Open</b>	<b>Number</b>	<b>7. LEAVE ESTATE</b>		<b>Number</b>					
<b>Type of Building</b>					Business Failure		-					
A		100	-	100	Relocated - Larger Premises		-					
B		100	-	100	Left to Europe		97					
C		200	-	10	Death		-					
D		500	-	5								
E		300	-	1								
F		-	-	-								
G		-	-	-								
<b>8. INDUSTRIES REPRESENTED</b> <sup>2</sup>												
AR	10	Am.R	114	CM	10	F	x	S	x	T	-	x - No. unknown
AM	x	Am.F	x	EP	x	H	x	C	x	L	-	- None reported
ER	x	Am.C	x	B	40	Met.	-	Di.	x	Chem.	-	
<b>9. SERVICES &amp; COMMON FACILITIES</b>												
<b>Services</b>		<b>Transport</b>		<b>Admin. Building</b>		<b>Amenities</b>						
Electricity	x	within Estate	x	Conference Hall	x	Fire Brigade	-	Barber	x			
Water	x	External	x	Exhibition Hall	x	First Aid	-	Warehouse	-			
Sewerage	x	Bus	x	Tech. Library	-	Post Office	x	Shops	x			
				Meeting Rooms	-	Bank	x	Restaurant	x			
				Workshops	-	Showers	-	Police Post	x			
<b>10. PROGRESS IN IMPLEMENTATION</b>				<b>Date</b>		<b>11. FINANCIAL DATA</b>		<b>TL</b>				
Cooperative founded				1970		Land		5,000,000				
Land purchased				1971		Infrastructure		10,000,000				
Application to Min. of Industry				1972		Industrial Buildings		-				
Infrastructure completed				1973		Other Facilities		-				
Industrial Buildings started				1974		Total Expenditure to date		15,000,000				
" " completed				1975		Government Credit		1,000,000				
<b>12. SUBCONTRACTING WITHIN ESTATE</b>						<b>13. USE OF LOCAL MATERIALS</b>						
Some - no details, except agricultural machinery, see notes.						None - local timber is not suitable for furniture. Other firms not working.						
<b>14. NEW PRODUCTS DEVELOPED</b>						<b>15. SECONDARY/TERTIARY INDUSTRIES</b>						
Platinum contact breaker points.						Employment is said to be as in the town as well as in service industries on the estate.						
<b>16. EXPORTS</b>						<b>17. PUBLIC AMENITIES</b>						
None directly.						bus services.						
<b>18. LABOUR UNIONISATION</b>												
None.												

A.4. Notes on the Akşehir Industrial Estate

Akşehir is a small city in the Konya Province about 60 kilometers from Afyon on the Konya - Afyon road. It is in an essentially agricultural area; auto and agricultural machinery repairing is the main activity.

Construction of the Estate - The Cooperative was formed in 1966 and the land bought in 1967. The infrastructure was undertaken by the municipality, but there have been problems, such as faulty construction of the sewage system. The telephone system is only now being connected. Construction of the buildings started in 1969 but, owing to lack of leadership, administrative and organisational problems, the first workshops were not operational until 1974 and first phase construction is not yet finished; it is expected to take another three and a half years. It was said that the contractors had other business which they pursued to the neglect of the estate. In the meantime there are further applications for space and land is available for extensions.

Sub-contracting - The manufacture of platinum contact breaker points is an external sub-contract; surplus production is sold to Fiat, Renault and Turkish car makers. There seems to be little inter-firm contracting on the estate.

Training - There appear to have been no training courses on the estate.

Firms visited

(1) Sawmill - Using locally made bandsaw machines costing TL 150,000 each; the saws themselves cost TL 5,000. The work has considerably increased since moving to the estate because of nearness to carpenters and furniture makers. Six employees.

(2) Agricultural Machinery Maker and Foundry - Has a foundry which produces castings for other firms on the estate. Manufactures seed drills and disc harrows, peak periods being August and October. Markets locally are restricted; main sales are in Ankara, Eskisehir and Izmir. 8 workers employed in the town, now 14. Estimated annual sales:

150 seed drills at TL 25,000 each	TL 3,750,000
75 harrows " TL 8,000 "	TL 600,000
	<hr/>
	TL 4,350,000.--

(U.S. \$ 290,000)

- (3) Engineering Machine Shop - Machining components for textile mills in Kayseri. These are ball bearing cases supplied as castings from Afyon, the quality of castings on the estate being too poor to accept. There is TL 2.5 million of standard machine tools. Eight workers are employed. The original order came to this firm from another firm on the estate which could not cope with the volume of work. There is a shortage of machine shop capacity on the estate.

- Problems - (1) Insufficient credit facilities for purchase of capital equipment. (See comment in Notes on Konya - Karatay).  
(2) Difficulties in procurement of pig iron and coke.  
(3) Have difficulty in competing with firms outside the Akşehir district and need advice on marketing. Also need training courses and look to the Government to provide them.

Return on Investment - Total expenditure to date is given as TL 22,000,000. (U.S. \$ 1,466,666) with Government credit of TL 6,000,000. This represents TL 73,825. (U.S. \$ 4,921) per firm. If the figures given for the manufacturer of agricultural machinery above are anywhere near correct, and assuming that the production has risen proportionately to the increase in workers (8 to 14, increase of 75 per cent), then the increased sales are about TL 1,864,000. per annum, a huge return on investment in the estate. Even if his workshops are above average in size and his investment is, say, three times that of the average firm on the estate, the return is still very good.

**INDUSTRIAL ESTATES STUDY**

**TURKEY**

CITY AYDIN      ESTATE AYDIN      OPER/WORK/CONST.      STUDY NO. 4.5.

<b>1. REGION</b> Aydin		<b>2. CITY POPULATION</b> <sup>1</sup> 50,000		<b>3. EXECUTING AGENCY</b> Co-operative		
<b>4. PHYSICAL DATA</b>		<b>Planned</b>	<b>Actual</b>	<b>5. OWNERSHIP</b> Local Industrialists - relocated		
Total Site Area (m <sup>2</sup> )		60,979	60,979	<b>6. PERSONS ENGAGED</b> (Estimated Total)		
Buildings Area (m <sup>2</sup> )		NA	44,140			<b>Before</b>
Roads, Green, etc (m <sup>2</sup> )		NA	16,828	NA	5,000	
Industrial Bldgs. Total		527	500*	<b>Est. Average per Unit</b>		
<b>Covered &amp; Open Working Areas</b> (m <sup>2</sup> )		<b>Covered</b>	<b>Open</b>	<b>Number</b>	<b>7. LEFT ESTATE</b>	
<b>Type of Building</b>					<b>Business Failure</b>	
A		10	-	180	5	
B		40	-	48	1	
C		60	-	52	23	
D		77	-	88	-	
E		90	-	128		
F		120	-	33		
G		1.0	-	21		
<b>8. INDUSTRIES REPRESENTED</b> <sup>2</sup>						
AN } AM } 104 AR }	Am.B } 116 Am.P } Am.H } x	GM } 79 EP } B Sec AR }	P } 3 M } 40 Met. } -	S } 10 C } 72 Fu. }	T } L } Chem. }	x - No. unknown - None rep. 116 v. small shops - see note
<b>9. SERVICES &amp; COMMON FACILITIES</b>						
<b>Services</b>	<b>Transport</b>	<b>Admin. Building</b>	<b>Amenities</b>			
Electricity x	within Estate -	Conference Hall -	Fire Brigade x	Barber x		
Water x	External x	Exhibition Hall -	First Aid -	Warehouse -		
Sewerage x	Bus	Tech. Library P	Post Office x	Shops -		
		Meeting Rooms x	Bank x	Restaurant x		
		Workshops -	Showers -	Police Post -		
<b>10. PROGRESS IN IMPLEMENTATION</b>			<b>11. FINANCIAL DATA</b>			
Cooperative founded			Land			
1967			800,000			
Land purchased			Infrastructure			
1967			NA			
Application to Min. of Industry			Industrial Buildings			
NA			NA			
Infrastructure completed			Other Facilities			
1969			-			
Industrial Buildings started			Total Expenditure to date			
1968			17,000,000			
" " completed			Government Credit			
1969			8,000,000			
<b>12. SUBCONTRACTING WITHIN ESTATE</b>			<b>13. USE OF LOCAL MATERIALS</b>			
Much cooperation in this state which did not exist before.			Salt, leather.			
<b>14. NEW PRODUCTS DEVELOPED</b>			<b>15. SECONDARY/TERTIARY INDUSTRIES</b>			
Multiple plough; impr. olive press; crop sprayers & fertilizer spreaders; freezers.			Services on the estate.			
<b>16. EXPORTS</b>			<b>17. PUBLIC AMENITIES</b>			
One firm known to be exporting; very large orders from Iran for the multiple plough.			Bus services.			
<b>18. LABOUR UNIONISATION</b>						
A start has been made; 60 workers have joined unions.						

A.5. Notes on the Aydin Industrial Estate

Aydin is in the south of the Province of Izmir and in the centre of the fruit growing district. The estate straddles the main road from Denizli to Izmir about one kilometer outside the town. As one of the earlier estates it is essentially a series of streets of workshops and has little or no open space other than the roads. The shops are beginning to look dilapidated. It is the only small industry estate visited which has a full time Director with an office in the town.

Construction of the Estate - The cooperative was founded and the land purchased in 1967; two years later the buildings were completed and occupied. This very rapid implementation, including negotiation of Ministry approval and the loan seems to have been due, in part, to the full time Director (although this was not said), and to a contractor who knew his business. The municipality helped by providing the contractor with earth moving machinery and trucks.

Specialisation - Some firms formerly in the general auto and agricultural machinery repair business have begun to specialise and to manufacture. The heavy plough manufacturer visited (see below), started in the repair business. A former repairer has specialised in manufacturing exhaust systems (mufflers) for cars and tractors; a bicycle component manufacturer formerly producing to job orders now specialises exclusively on a certain range of components, and is operating on a large batch basis.

Sub-contracting - The manufacturer of bicycle components is sub-contractor to firms in other parts of the country. There has been a very large increase in contracts between firms on the estate since its foundation.

Training - Training courses were organised in 1971-72-73 jointly by the Ministry of Industry, the Halk Bank and the Confederation of Artisans and Tradesmen. They included welding and turning. 450 participants attended and 90 per cent received their certificates.

Labour Unions - This is the only small industries estate visited where the labour unions are beginning to enrol members, probably due to the comparative nearness of Izmir, where unions are strong. (See Manisa Report). The en-

ployers are much displeased. About 60 workers out of an estimated 5,000 (including, of course a high percentage of boys), have joined so far.

Firms visited

- (1) Agricultural Machinery Manufacturer - The firm is run by three brothers. The two elder brothers have only elementary educations but the youngest is a graduate engineer. The main product is a heavy multiple plough. There are six sizes ranging in price from TL 3,500 to TL 4,200. 25 per day are produced by 70 employees. All forgings are produced in the shops. They are essentially tractor-drawn ploughs and the firm can sell all they make to the wheat farmers in Central Anatolia. British Motors (Turkey) have obtained orders for very large quantities from Iran, but the present premises are too small to allow manufacture on the scale needed. A new factory is being constructed just outside the estate to which some of the production workers have already moved. Raw material is obtained direct from the Turkish Iron and Steel Company; steel sheets are imported from Germany under import licence. Labour and overhead expenses account for about 10 per cent each of the total cost of production. Between 1970, when the firm moved to the estate, and the present day, the number of workers has risen from 25 to 70. Machinery and equipment has doubled.

The general conditions of work and the housekeeping were very bad. There was no sign of any safety precautions, even goggles to protect workers grinding metal on hand grinders.

On the basis of the figures provided on the output of ploughs alone, and the following assumptions:

- (1) the average selling price per plough to be TL 3,750
- (2) a six-day week and reduced output during the month of Ramadan, giving 280 working days' equivalent
- (3) Increase in sales equivalent to increase in workers employed

25 ploughs/day through 280 days at TL 3,750 each  
= TL 26,250,000 (about U.S. \$ 1,750,000).

The increase in sales from the ploughs since coming to the estate is thus approximately from 9 to 25 per day. This means that turnover has risen from TL 9,450,000. per annum, an increase of TL 16,800,000 p.a. or about 178 per cent.

- (2) Agricultural Equipment Manufacturer - Crop sprayers, fertilizer distributors and similar products, certified by the Ministry of Agriculture. Before coming to the estate, the owner was repairing agricultural machinery and employed only 5 workers; he now employs 23. He has an investment in machinery of one and a half million TL and a loan of TL 400,000 from the Halk Bank. He has bought land for expansion but is maintaining his shops on the industrial estate.

A soap factory was also seen, but the owner was absent, so that no details could be obtained. It employed about five people and was indescribably filthy but seemed to have plenty of work.

- Problems - (1) Obtaining credit is less of a problem to many industrialists on the Aydin Estate because they have personal holdings in agricultural land. However, there were complaints that the Aydin Branches of the Halk Bank do not have enough money to meet the demands for loans. (This was never explained).
- (2) There are not enough training facilities and the Government is urgently requested to provide programmes in a range of specific subjects.

Return on Investment - Total investment is stated at TL 17,000,000. or (U.S. \$ 1,133,333) representing about TL 30,909 (U.S. \$ 2,060) per firm. The only turnover figures estimated relate to the "star firm" of the estate and are therefore not typical. Nevertheless, the low cost per firm must have offered a very high return on investment to most members. (See Section III, end) Five did manage to go bankrupt.

Discussion with the Manager, Turkiye Halk bankasi - Aydin Industrial Estate Branch

At the end of the visit a very brief discussion was held with the Manager of the Industrial Estate Branch of the Halk Bank. This branch only opened six months ago; before that all business was transacted with the Aydin city office. Since opening the branch has loaned TL 11,000,000 to industrialists on the estate. The bank will provide short term credit facilities for working capital and raw materials up to TL 250,000 (U.S. \$ 16,666), and credit on fixed assets to TL 400,000 (U.S. \$ 26,666).

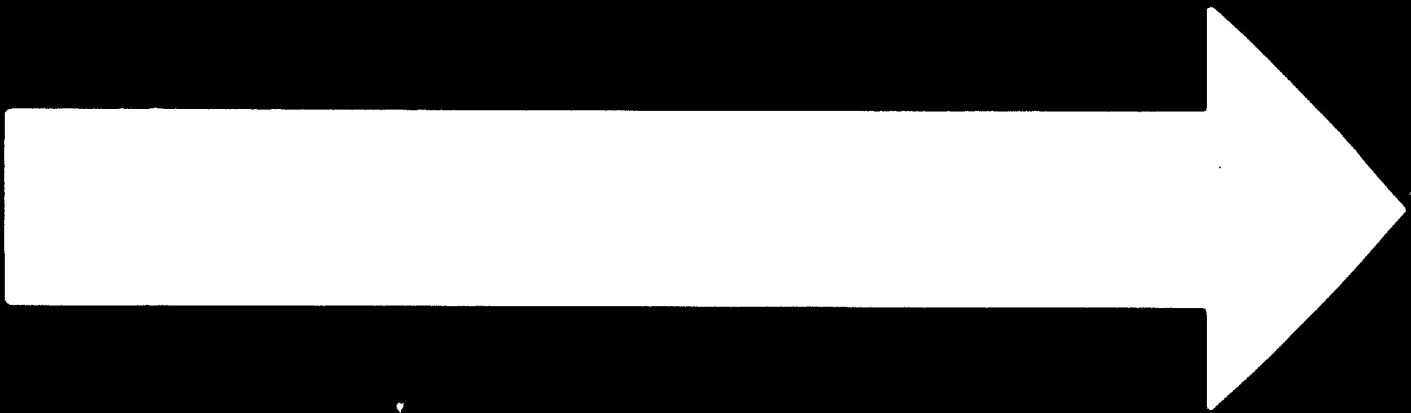
**INDUSTRIAL ESTATES STUDY**

**TURKEY**

<b>CITY</b> GEDIZ		<b>ESTATE</b> GEDIZ		<b>OPER/UNDER CONST.</b>		<b>STUDY NO.</b> A.6.						
<b>1. REGION</b> Kutahya		<b>2. CITY POPULATION</b> <sup>1</sup> 10,400		<b>3. EXECUTING AGENCY</b> Municipality								
<b>4. PHYSICAL DATA</b>		<b>Planned</b>	<b>Actual</b>	<b>5. OWNERSHIP</b> Local industrialists relocated from old Gediz after earthquake.								
Total Site Area (m <sup>2</sup> )		20,000	20,000	<b>6. PERSONS ENGAGED</b> (Estimated Total)		<b>Before</b>	<b>Now</b>					
Buildings Area (m <sup>2</sup> )		NA	NA			NA	300					
Roads, Green, etc (m <sup>2</sup> )		NA	NA	<b>Ect. Average per Unit</b>			4-5					
Industrial Bldgs. Total		68	68									
<b>Covered &amp; Open Working Areas</b> (m <sup>2</sup> )		<b>Covered</b>	<b>Open</b>	<b>Number</b>	<b>7. LEAF ESTATE</b>		<b>Number</b>					
<b>Type of Building</b>					Business Failure		-					
A		91	-	10	Relocated - Larger Premises		-					
B		22	-	21	Left to Europe		-					
C		28	-	16	Death		-					
D		18	-	16			-					
E		10	-	-			-					
F		-	-	-			-					
G		-	-	-			-					
<b>8. INDUSTRIES REPRESENTED</b> <sup>2</sup>												
AM	x	Al.R	x	GM	x	P	-	S	-	T	-	x - No. unknown
AN	-	Al.P	x	EP	-	H	-	C	-	L	-	- None reported.
AR	x	Al.M	1	B	-	Met.	-	Fu.	-	Chem.	2	
<b>9. SERVICES &amp; COMMON FACILITIES</b>												
<b>Services</b>		<b>Transport</b>		<b>Admin. Building</b>		<b>Amenities</b>						
Electricity	x	within Estate	-	Conference Hall	-	Fire Brigade	-	Barber	x			
Water	x	External	-	Exhibition Hall	-	First Aid	x	Warehouse	-			
Sewerage	x			Tech. Library	-	Post Office	x	Shops	-			
				Meeting Rooms	-	Bank	x	Restaurant	x			
				Workshops	-	Showers	-	Police Post	-			
<b>10. PROCESS IN IMPLEMENTATION</b>				<b>11. FINANCIAL DATA</b>								
Cooperative founded		<b>Date</b>		Land		<b>TL</b>						
Land purchased		-		Infrastructure		See notes						
Application to Min. of Industry		See notes		Industrial Buildings		2,000,000						
Infrastructure completed		" "		Other Facilities		-						
Industrial Buildings started		" "		Total Expenditure to date		2,000,000						
" " completed		1971		Government Credit		2,000,000						
" " completed		1973										
<b>12. SUBCONTRACTING WITHIN ESTATE</b>				<b>13. USE OF LOCAL MATERIALS</b>								
None reported.				None reported.								
<b>14. NEW PRODUCTS DEVELOPED</b>				<b>15. SECONDARY/TERTIARY INDUSTRIES</b>								
None reported.				services on the estate.								
<b>16. EXPORTS</b>				<b>17. PUBLIC AMENITIES</b>								
None.				The estate was built as part of the reconstruction of the town.								
<b>18. LABOUR UNIONIZATION</b>												
None.												

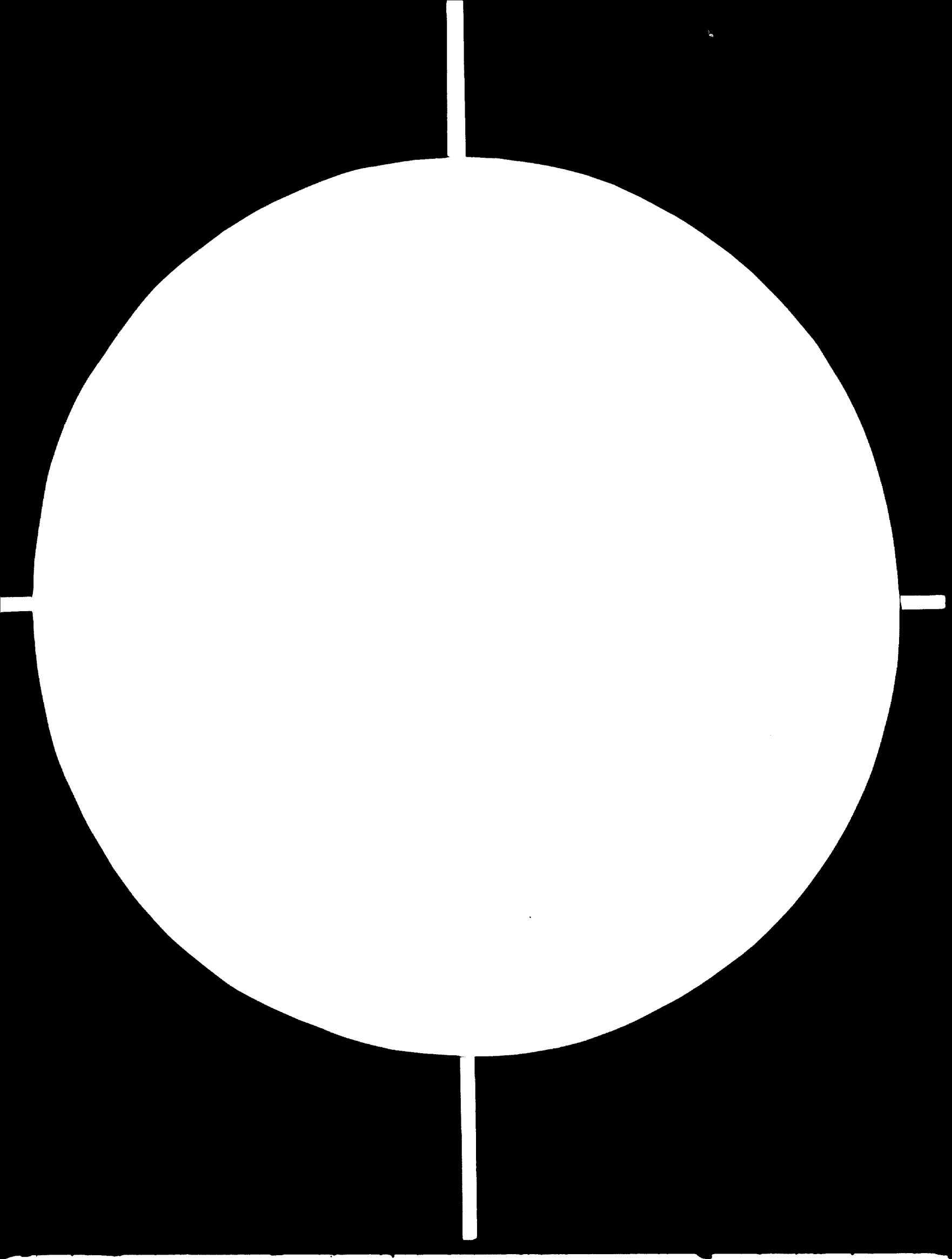


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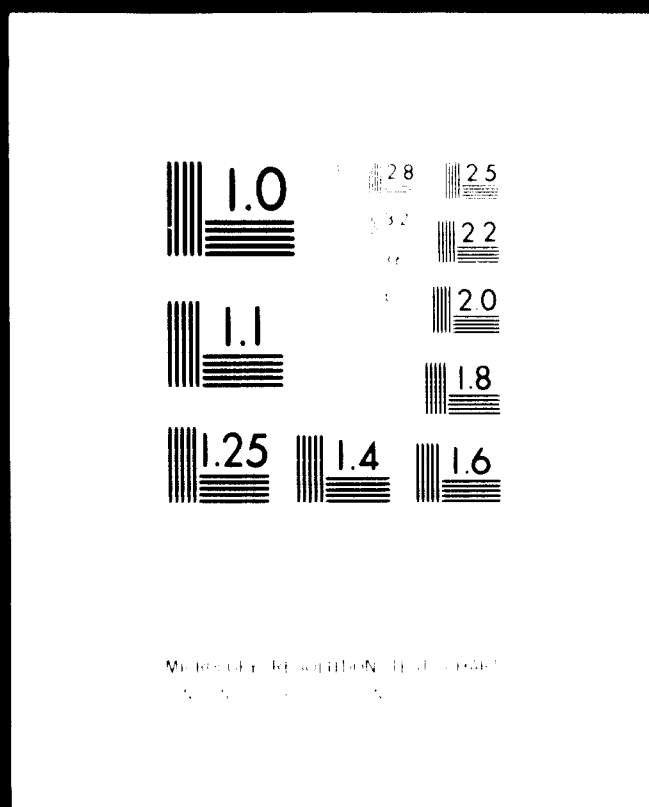




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A.6. Notes on the Gediz Industrial Estate

Gediz is a small town in the Kütahya Province of Central Anatolia. In 1970 the original town was totally destroyed by earthquake involving the loss of 1,300 lives. A new town was built by the Government a few kilometers away which includes a small industrial estate to rehouse the artisans and small industrialists who had lost everything in the disaster. The Ministry of Reconstruction paid for the land and infrastructure as part of the construction of the town and the Ministry of Industry provided a credit of 100 per cent of the cost of the industrial buildings.

The Executing Agency is the Municipal Council composed of 21 members, including representatives of the industrialists. The members of the estate will start to repay the Government after three years. The loan is extended over 20 years at three per cent. However, no aid has been given in buying new machines or equipment and there have been problems obtaining credit from the Halk Bank. In some cases the Bank has accepted plant and equipment as collateral.

Most of the workshops on the estate are automobile and agricultural equipment repair shops, but there is one car battery manufacturer (who was manufacturing in the old town), a maker of auto exhaust systems and a manufacturer of distilled water. An auto electrical repairer has started to manufacture batteries.

No new firms have come to Gediz. It is located in a hilly region, not a wealthy agricultural area, and is not on one of the trunk roads. It is about 100 kilometers from the nearest major town, Kütahya. For this reason moving on to the estate - which in any case was necessary to obtain premises - cannot be expected to show any great gains for the industrialists concerned, at least for some time to come. In addition to the long term debt incurred for their workshops and the need to maintain working capital, they also owe about TL 35,000 each on their new dwelling houses, also repayable over 20 years at three per cent. They feel the need for the authorities to take a more active part in helping them to promote industry in the area.

**INDUSTRIAL ESTATES STUDY**

**TURKEY**

CITY MANISA ESTATE MANISA Partly OPEN/UNDER CONSTR. STUDY NO. 4.7.

1. REGION Izmir 2. CITY POPULATION 45,000 est. 3. EXECUTING AGENCY Chamber of Commerce

4. PHYSICAL DATA		Planned	Actual	5. OWNERSHIP From other areas, new firms, joint ventures with foreign firms.		
Total Site Area (m <sup>2</sup> )		1.7 mil	1.7 mil.			
Buildings Area (m <sup>2</sup> )		1.5 mil	NA	6. PERSONS ENGAGED (Estimated Total)		
Roads, Green, &c (m <sup>2</sup> )		0.2 mil	0.2 mil		Before	Now
Industrial Bldgs. Total					-	850-1,200 seasonal
				Est. Average per Unit		
					-	
Covered & Open Working Areas (m <sup>2</sup> )		Covered	Open	Number	7. LEPT ESTATE	
<u>Scope of Buildings</u>					Business Failure	
Parcels of land	A	-	2,100	NA	Relocated - Larger Premises	
The plots are sold and firms erect buildings to suit their requirements.	B	-	4,000	NA	Left to Europe	
	C	-	7,000	NA	Death	
	D	-	12,000	NA		
	E	-	12,000+	NA		
	F					
	G					

8. INDUSTRIES REPRESENTED<sup>2</sup> See notes for the industries in place, and contracted.

AR	An.R	GM	P	S	T
AM	An.P	EP	H	C	L
TR	An.K	B	Met.	Fu.	Chem.

**9. SERVICES & COMMON FACILITIES**

Services	Transport	Admin. Building	Amenities
Electricity x	within Estate! x	Conference Hall x	Fire Brigade -
Water x	External x	Exhibition Hall x	First Aid P
Sewerage x	Fork lift Bus	Tech. Library -	Post Office P
Garbage coll. x		Meeting Rooms P	Bank P
		Workshops P	Showers -
			Barber P
			Warehouse -
			Shops P
			Restaurant P
			Police Post -

10. PROCESS IN IMPLEMENTATION	Date	11. FINANCIAL DATA	TL
Chamber of Commerce initiated	1954	Land	29,000,000
<del>Cooperative founded</del>	1957	Infrastructure	
Land purchased	1960	Industrial Buildings	Does not apply.
Application to Min. of Industry	1960	Other Facilities	
Infrastructure completed	1971	Total Expenditure to date	29,000,000
Industrial Buildings started	NA	Government Credit	20,000,000
" " completed	Started 1972		

12. SUBCONTRACTING WITHIN ESTATE Not yet, since industries too diverse. New firms have sub-contract plans. See notes.

13. USE OF LOCAL MATERIALS Cereals, molasses.

14. NEW PRODUCTS DEVELOPED Does not apply.

15. SECONDARY/TERTIARY INDUSTRIES No information.

16. EXPORTS Cans; readymade garments; knitted underwear; steel reinforcing net; sanitary valves.

17. PUBLIC AMENITIES Bus services.

18. LABOUR UNIONISATION Local labour is already unionised and new labour on the estate is joining.

A.7. Notes on the Manisa Industrial District

Manisa is a city of about 70,000 inhabitants situated some 40 kilometers north east of Izmir. There is road and rail communication with the latter city, which is Turkey's second port and a major industrial centre.

The "industrial district"<sup>1</sup> is one of very few such areas laid out for large and medium industry in Turkey and the only one visited in the course of this study. It is not sponsored by the Department of Small Industries and Artisans of the Ministry of Industry, but by another Department. Unfortunately time did not allow contact to be made with the latter, whose rules for assisting industrial districts differ from those relating to the small industries estates.<sup>2</sup>

The idea of establishing an industrial district at Manisa first arose in 1962, following the establishment of a large district at Bursa with assistance from the US AID. A study was prepared by the Industrial Districts Section of the Department of Industry, the Union of Chambers of Commerce, Industry and Commodity Exchanges of Turkey, advised by an outside consultant.<sup>3</sup> This Report was published in 1964 and provides a very detailed account of the factors taken into consideration in selecting the site and the proposals for the design and development of the industrial district, which have been used in setting up the District. The Ministry of Industry provided a loan of TL 26,550,000 to meet 90 per cent of the cost of the land and infrastructure which totalled TL 29,500,000. (1970 price levels).

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<sup>1</sup> For some reason the Department of Small Industries and Artisans refuses to accept the appellation "estate" for the large industry areas. In fact, Manisa qualifies for the term in all senses except that the buildings are not supplied by the estate but built individually.

<sup>2</sup> The Ministry provides credit for land and infrastructure for large estates, but not for small ones.

<sup>3</sup> Union of Chambers of Commerce, Industry and Commodity Exchanges of Turkey: A Development Plan for the Manisa Industrial District, 1964.

The site selected is located adjacent to the Manisa - Izmir highway 5.5 kilometers from Manisa. Among the criteria used to select the site were:

- (1) minimum area of 1,500,000 square metres with preference to areas with capability of expansion up to 300,000 square metres.
- (2) susceptible to homogeneous development with minimum of land alteration.
- (3) it must be within 1.5 kilometers of an all-weather road.
- (4) the area must have an average gradient of less than 5 per cent.
- (5) preference would be given to areas with established rail lines within short distance.

Various factors relating to soil and drainage had also to be taken into account. In addition, various land costs, external infrastructure "hook up", costs and impact on the local community were considered important.

The land was purchased at a very low price and in 1970 the cost of infrastructure was TL 22 per square metre. Unlike the small industries estates, the executing agency does not erect buildings but sells the land in parcels to industrialists who will erect their own buildings. This is, inter alia, because large industries demand much greater variation in their buildings than the rather standardised activities to be found on the small industries estates. The selling cost of the land to industrialists this year is TL 46 per square metre.

Contrary to the policy on the small industries estates, which are reserved normally exclusively for the re-location of local industries, in conformity with Ministry policy (See main text), the firms purchasing land here are nearly all from outside the area, or new, in some cases joint ventures with foreign companies. Thus the district is primarily intended to bring new industry into the Manisa area, rather than to stimulate existing industries. In fact, so far firms established or who have purchased plots are 20 per cent from Manisa, 50 per cent from Izmir and 30 per cent from outside the area, suggesting that the policy is working.

Construction of the Estate - The Report recommended the development of this district and detailing the plans for it appeared in August 1964 and the project was approved by the Ministry of Industry in 1966. The land was bought in 1967

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and the infrastructure took three years to complete, from 1968 to 1971. The site is beautifully landscaped with wide roads and green areas: it resembles some of the newer estates in the United Kingdom. The first factory started to produce in 1972. The Director of the District felt that the rather long period demanded to come into production was due to the fact that this was the first venture of its kind in Turkey to be sponsored by the Ministry of Industry.

Plants operating or under construction - 10 plants are currently operating and a further 12 are under construction. 23 firms have bought plots bringing the land sold or bespoke to 45 per cent of the available area. The industries represented are:

(1) Operating

- \* Ready-made women's clothes
- \* Knitted underwear
- Biscuits and cakes
- Animal feedstuffs
- Salt
- Synthetic foil for packaging
- Plastics
- \* Metal containers and cans
- \* Steel reinforcing net for concrete
- \* Sanitary valves
  
- \* Exporting - the women's garments are wholly for export

(2) Under construction includes:

- Tractor trailers
- Pre-fabricated concrete elements
- Ready-made garments
- Tanning and leather goods manufacture
- Chrome steel boilers
- Wheat flour and macaroni
- Footwear
- Motor and tractor ancillary equipment

It may be noted that food industries are included in the firms on the estate, again contrary to the rules for small industries estates.



Other new industries coming to the estate include steel spring production, oil products and grease, furniture, heavy machine tools and washing machines.

Administration - The district is administered by a Board of six members, which includes two representatives of the industries on the estate and four representatives of the Manisa Chamber of Commerce. There is a full time Director who is also a member of the Board. The offices are spacious and of modern design and there is an air of professionalism about them which is lacking in all the small industries estates visited, with the partial exception of Aydin. Buildings are under construction for a shopping centre and other facilities. It was intended to set up central workshops, but the firms so far represented showed little interest and for the time being the proposal has been shelved.

Firms visited

- (1) Metal Container and Can Manufacture - Occupies 30,000 square metres. Food cans and other containers. The company operates under licence from the Continental Can Company. It is highly mechanised with an investment said to be TL 150,000,000. It supplies 85 per cent of Turkey's requirements and also exports, as well as supplying cans to food companies who are exporting. 85 persons are employed all the year round with employment rising to 300 during peak seasons. The manager was educated and trained in the United States. Some of the machinery, originally brought from the United States, they have copied and say they have improved.
- (2) Knitted Underwear - Occupies 24,500 square metres. Knitting, washing and finishing, making up. The whole production is intended for export, but the firm has only just started and is running in. Employs 150 at present and expects to employ 300 later. 60 per cent are women and girls. Investment said to be TL 50,000,000. The company may well find itself in trouble in the short run because no market research seems to have been done, nor does it appear to have a sales network. In the export market it is facing competition from industrialised countries in deep recession.

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(3) Animal Feedstuffs - Mixed cereals. The company has developed a market for local materials, including molasses. It is very highly automated, all operations being controlled by means of a central control panel. Manual labour is solely concerned with loading, placing and off-loading the bags of feedstuffs, warehousing operations and loading and unloading delivery trucks. 13 men are employed. Daily output is 100 tons. Investment in equipment is said to be TL 5,000,000, but this seems very low for such complex equipment and the machinery itself.

Return on Investment - It is early to try to obtain any kind of estimate of the return on investment. The highly capital intensive industries seem to be generating comparatively little employment. For example, the knitwear factory capital costs appear to be as follows:

Land at TL 46 per sq. metre - 30,000 sq. metres (incl. open space)	
	TL 1,380,000
Buildings at TL 750 per sq. metre - 24,500 sq. metres	
	TL 18,375,000
Plant and equipment	TL 50,000,000
	<hr/>
	TL 69,755,000.-

The land, with services and other amenities, represents a very small proportion of the total cost of setting up the factory. The other costs would presumably be about the same anywhere else. Investment per employee, calculated on 300 employees, works out at TL 4,600 for land only but TL 232,516 (U.S. \$ 15,500 ) per post of employment, including equipment and buildings. However, the major costs are in the knitting machines and the washing and finishing plants and are determined by the nature of the processes. Viewed in terms of investment per post of employment created, most of the small industries give much better value.

Comments - The setting up of the industrial district has stimulated small industrialists in Manisa to start action to set up an industrial estate. In Antalya, on the other hand, large and medium scale industrialists, encouraged by the success of the small industries estate, are seeking to set up a large industries estate.

**INDUSTRIAL ESTATES STUDY**

**TURKEY**

CITY POLATLI		ESTATE POLATLI		COND/UNDER CONST.		STUDY NO. B.3.						
1. REGION Ankara		2. CITY POPULATION <sup>1</sup> 32,326		3. EXECUTING AGENCY Cooperative								
4. <u>EMPIRICAL DATA</u>		<u>Planned</u>	<u>Actual</u>	5. <u>OWNERSHIP</u> Local Industrialists - relocated								
<u>Total Site Area (m<sup>2</sup>)</u>		70,000	70,000	6. <u>PERSONS ENGAGED</u> (Estimated Total)		<u>Before</u>	<u>Now</u>					
<u>Buildings Area (m<sup>2</sup>)</u>		33,715	29,690	Est. Average per Unit		NA	-					
<u>Roads, Green, &amp;c (m<sup>2</sup>)</u>		NA	NA			-	-					
<u>Industrial Bldgs. Total</u>		227	200									
<u>Covered &amp; Open Working Areas (m<sup>2</sup>)</u>		<u>Covered</u>	<u>Open</u>	<u>Number</u>	7. <u>LEFT ESTATE</u>		<u>Number</u>					
<u>Type of Building</u>					<u>Business Failure</u>		Not					
A		230	-	21	<u>Relocated - Larger Premises</u>		Applicable					
B		180	-	12	<u>Left to Europe</u>							
C		150	-	69	<u>Death</u>							
D		115	-	98								
E		-	-	-								
F		-	-	-								
G		-	-	-								
8. <u>INDUSTRIES REPRESENTED</u> <sup>2</sup>												
AR	x	Al.R.	x	CM	x	P	x	S	x	T	-	x - No. unknown
AM	x	Al.P	x	EP	x	M	x	O	x	L	x	- None reported
TR	x	Al.J	x	B	x	Hot.	-	Fu.	x	Chem.	-	
9. <u>SERVICES &amp; COMMON FACILITIES</u>												
<u>Services</u>		<u>Transport</u>		<u>Admin. Building</u>		<u>Amenities</u>						
Electricity	x	within Estate	-	Conference Hall	-	Fire Brigade	-	Barber	P			
Water	x	External	P	Exhibition Hall	-	First Aid	-	Warehouse	P			
Sewerage	x	Bus		Tech. Library	P	Post Office	-	Shops	-			
				Meeting Rooms	P	Bank	-	Restaurant	P			
				Workshops	-	Showers	P	Police Post	-			
10. <u>PROCESS IN IMPLEMENTATION</u>				11. <u>FINANCIAL DATA</u>								
Cooperative founded		Date 1969		Land		TL						
Land purchased		1970		Infrastructure		NK						
Application to Min. of Industry		1971		Industrial Buildings		NA						
Infrastructure completed		Not completed		Other Facilities		NA						
Industrial Buildings started		1971		Total Expenditure to date Est		29,000,000						
" " completed		Not completed		Government Credit		10,900,000						
12. <u>SUBCONTRACTING WITHIN ESTATE</u> Not yet applicable				13. <u>USE OF LOCAL MATERIALS</u> Not yet applicable.								
14. <u>NEW PRODUCTS DEVELOPED</u> No. yet applicable				15. <u>SECONDARY/TERTIARY INDUSTRIES</u> Not yet applicable.								
16. <u>EXPORTS</u> Not yet applicable.				17. <u>PUBLIC AMENITIES</u> Not yet applicable.								
18. <u>LABOUR UNIONISATION</u> Not yet applicable.												

ESTATES UNDER CONSTRUCTION

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B.1. Notes on the Polatli Industrial Estate

Polatli is a medium sized town 76 kilometers from Ankara on the main Izmir road. It is a modern town, having grown up from a settlement round the railway station in the 1920s and is a centre for the rich wheat growing area around Ankara. The estate itself, which is in the late stages of construction, is about one kilometer out of the town by the side of the main road. Most of the workshop buildings have been erected, but the administration centre is still in the early stages of construction. However, the infrastructure is not yet complete. On the opposite side of the main road is the technical high school which runs training programmes.

The units are standard Ministry of Industry design with an upper floor covering about half the shop. They are equipped with toilets and showers.

Construction of the Estate - The cooperative was founded in 1969. The municipality promised to build the infrastructure but so far has done nothing. Originally 348 workshops were planned and approved, but some of the members of the cooperative dropped out because they could not afford to pay their shares, whilst 28 went to Germany to work. These latter remain members of the Cooperative as long as they pay their shares, basically TL 500 plus contributions to the building costs etc. The land cost TL 1,200,000, which is considered to be a heavy burden by some, who have difficulty in paying their building costs. The original estimated cost of the buildings was TL 39,000,000, reduced to TL 29,000,000, including allowance for inflation, when the number of buildings was reduced.

Workshops visited in the Town - Since no units were operating on the estate, some workshops were visited in the town. In general, the buildings and working conditions were much superior to those seen in other towns in Turkey. Large numbers of new tractors and other agricultural machines, as well as cars, were seen undergoing service, and the town had a general air of prosperity.

- (1) Engineering Products - The manufacturer, who had been engaged in general engineering machining, received a suggestion from a friend in the textile industry that he should make power looms. Until 1966 he was a foreman in a State enterprise. He started his business with a loan of TL 23,000 and has subsequently had loans amounting to TL 240,000. He has had some

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problems with the banks but has had no loans from friends and relations. Castings are bought from Izmir through a foundryman who obtains his raw materials through the Ministry of Industry. The sample loom seen was a heavy, workmanlike job of an improved Lancashire type. Sales are mainly in the Izmir region. Clients come to him and give their orders. Machine tools are modern but appear under used. 15 persons are employed. The move to the estate will provide much needed space, since he has no possibility of expansion at present.

- (2) Agricultural Machinery Manufacturer - This manufacturer invented an improved form of seed driller. He has been paid TL 60,000 by U.S. AID representatives who said they would manufacture it in the United States; they also gave him orders for three at TL 20,000 each. He tried to obtain patent protection through the Ministry of Industry, but it dragged on for so long that he gave up. He is taking 750 sq. metres space in the new estate, which will enable him to step up his production.

Comments - The main benefit which these small industrialists will obtain by moving to the estate is increased space and the possibility of taking on more workers and stepping up their production. Present working conditions are not bad but very cramped, especially since the products themselves take up a lot of space.

NOTE: The two Gaziantep estates share the same overall site and central facilities. As far as feasible, land and building costs have been shared proportionately. Central facilities INDUSTRIAL ESTATES STUDY costs are shown on Form B.1.

TURKEY

CITY <u>GAZIANTEP</u>		ESTATE <u>GAZIANTEP COOP</u>		<u>DEVELOPING/UNDER CONST.</u>		STUDY NO. <u>B.2.</u>	
<b>1. REGION</b> <u>Gaziantep</u>		<b>2. CITY POPULATION</b> <sup>1</sup> <u>227,652</u>		<b>3. EXECUTING AGENCY</b> <u>Cooperative</u>			
<b>4. PHYSICAL DATA</b>		<u>Planned</u>	<u>Actual</u>	<b>5. OWNERSHIP</b> <u>Local industrialists - relocated.</u>			
<u>Total Site Area (m<sup>2</sup>) *</u>		<u>644,000</u>	<u>644,000</u>	<b>6. PERSONS ENGAGED</b>		<u>Before</u>	<u>Now</u>
<u>Buildings Area (m<sup>2</sup>)</u>		<u>NA</u>	<u>NA</u>	<u>(Estimated Total)</u>		<u>NA</u>	<u>-</u>
<u>Roads, Green, &amp;c (m<sup>2</sup>)</u>		<u>NA</u>	<u>NA</u>	<u>Est. Average per Unit</u>		<u>-</u>	<u>-</u>
<u>Industrial Bldgs. Total</u>		<u>1,100</u>	<u>NA</u>				
<u>Covered &amp; Open Working Areas (m<sup>2</sup>)</u>		<u>Covered</u>	<u>XXXXXX</u>	<b>7. LEFT ESTATE</b>		<u>Number</u>	
<u>Type of Building *</u>			<u>Provision for Exten.</u>	<u>Business Failure</u>		<u>Not applicable</u>	
				<u>Relocated - Larger Premises</u>			
				<u>Left to Europe</u>			
				<u>Death</u>			
<u>* See notes</u>		<u>A</u>	<u>40</u>	<u>20</u>	<u>111 P</u>		
		<u>B</u>	<u>80</u>	<u>40</u>	<u>393 P</u>		
<u>** The total number adds up to 1,155. See notes.</u>		<u>C</u>	<u>120</u>	<u>60</u>	<u>103 P</u>		
		<u>D</u>	<u>160</u>	<u>80</u>	<u>280 P</u>		
		<u>E</u>	<u>240</u>	<u>120</u>	<u>159 P</u>		
		<u>F</u>	<u>320</u>	<u>160</u>	<u>64 P</u>		
		<u>G</u>	<u>180</u>	<u>240</u>	<u>43 P</u>		
<b>8. INDUSTRIES REPRESENTED</b> <sup>2</sup> <u>See notes.</u>							
<u>AR</u>	<u>Am. RT</u>	<u>CA</u>	<u>F</u>	<u>S</u>	<u>T</u>		
<u>AM</u>	<u>Am. P</u>	<u>EP</u>	<u>M</u>	<u>C</u>	<u>L</u>		
<u>ER</u>	<u>Am. H</u>	<u>B</u>	<u>Met.</u>	<u>Fu.</u>	<u>Chem.</u>		
<b>9. SERVICES &amp; COMMON FACILITIES</b> * Listed under Gaziantep Model Estate, B.1.							
<u>Services</u>	<u>Transport</u>		<u>Admin. Building</u>		<u>Amenities</u>		
<u>Electricity</u>	<u>within Estate</u>		<u>Conference Hall</u>		<u>Fire Brigade</u>		
<u>Water</u>	<u>External</u>		<u>Exhibition Hall</u>		<u>First Aid</u>		
<u>Sewerage</u>			<u>Tech. Library</u>		<u>Post Office</u>		
			<u>Meeting Rooms</u>		<u>Bank</u>		<u>Barber</u>
			<u>Workshops</u>		<u>Showers</u>		<u>Warehouse</u>
							<u>Shops</u>
							<u>Restaurant</u>
							<u>Police Post</u>
<b>10. PROGRESS IN IMPLEMENTATION</b>			<u>Date</u>		<b>11. FINANCIAL DATA</b>		
<u>Cooperative founded *</u>			<u>NA</u>		<u>Lead Prop. of total site. Est.</u> <u>TL</u>		
<u>Land purchased</u>			<u>NA</u>		<u>Infrastructure *</u> <u>Est.</u> <u>14,500,000</u>		
<u>Applications to Min. of Industry</u>			<u>NA</u>		<u>Industrial Buildings* Est.</u> <u>104,722,828</u>		
<u>Infrastructure completed *</u>			<u>1974</u>		<u>Other Facilities See B.1.</u>		
<u>Industrial Buildings started</u>			<u>1972</u>		<u>Total Expenditure to date</u> <u>NA</u>		
<u>" " completed</u>			<u>NA</u>		<u>Government Credit*</u> <u>NA</u>		
<b>12. SUBCONTRACTING WITHIN ESTATE</b>				<b>13. USE OF LOCAL MATERIALS</b>			
<u>Not yet applicable</u>				<u>Not yet applicable</u>			
<b>14. NEW PRODUCTS DEVELOPED</b>				<b>15. SECONDARY/TERTIARY INDUSTRIES</b>			
<u>Not yet applicable</u>				<u>Not yet applicable</u>			
<b>16. EXPORTS</b>				<b>17. PUBLIC AMENITIES</b>			
<u>Not yet applicable</u>				<u>Not yet applicable</u>			
<b>18. LABOUR UNIONISATION</b>							
<u>Not yet applicable</u>							

NOTE: The two Gaziantep estates share the same overall site and central facilities. As far as feasible, land and building costs have been shared proportionately. Central facilities costs are shown on this form for both.

**INDUSTRIAL ESTATES STUDY**

**TURKEY**

CITY <u>GAZIANTEP</u>		ESTATE <u>GAZIANTEP MODEL</u>		<u>OPEN/UNDER CONST.</u>		STUDY NO. <u>B.1.</u>	
<b>1. REGION</b> <u>Gaziantep</u>		<b>2. CITY POPULATION</b> <sup>1</sup> <u>227,652</u>		<b>3. EXECUTING AGENCY</b> <u>Ministry of Industry</u>			
<b>4. PHYSICAL DATA</b>		<u>Planned</u>	<u>Actual</u>	<b>5. OWNERSHIP</b> <u>Ministry of Industry &amp; Technology</u> <u>renting to selected firms. See notes.</u>			
<u>Total Site Area (m<sup>2</sup>) *</u>		<u>166,000</u>	<u>166,000</u>	<b>6. PERSONS ENGAGED</b> <u>(Estimated Total)</u>		<u>Before</u>	<u>Now</u>
<u>Buildings Area (m<sup>2</sup>)</u>		<u>NA</u>	<u>NA</u>	<u>NA</u>		<u>NA</u>	<u>-</u>
<u>Roads, Green, etc (m<sup>2</sup>)</u>		<u>NA</u>	<u>NA</u>	<b>Est. Average per Unit</b>		<u>-</u>	<u>-</u>
<u>Industrial Bldgs. Total</u>		<u>50</u>	<u>NA</u>	<b>7. LEFT ESTATE</b>		<b>Number</b>	
<u>Covered &amp; Open Working Areas (m<sup>2</sup>)</u>		<u>Covered</u>	<u>Open</u>	<u>Number</u>	<u>Business Failure</u>		
<u>Type of Building *</u>		<u>800 P</u>	<u>-</u>	<u>50</u>	<u>Relocated - Larger Premises</u>		
<u>A</u>		<u>-</u>	<u>-</u>	<u>-</u>	<u>Left to Europe</u>		
<u>B</u>		<u>-</u>	<u>-</u>	<u>-</u>	<u>Death</u>		
<u>C</u>		<u>-</u>	<u>-</u>	<u>-</u>	<u>Not applicable</u>		
<u>D</u>		<u>-</u>	<u>-</u>	<u>-</u>			
<u>E</u>		<u>-</u>	<u>-</u>	<u>-</u>			
<u>F</u>		<u>-</u>	<u>-</u>	<u>-</u>			
<u>G</u>		<u>-</u>	<u>-</u>	<u>-</u>			
<b>8. INDUSTRIES REPRESENTED</b> <sup>2</sup> <u>Selected firms. See notes.</u>							
<u>AR</u>	<u>AM</u>	<u>ER</u>	<u>AM.R</u>	<u>AM.P</u>	<u>AM.N</u>	<u>GM</u>	<u>EP</u>
<u>EP</u>	<u>B</u>	<u>P</u>	<u>H</u>	<u>Met.</u>	<u>S</u>	<u>O</u>	<u>T</u>
<u>EP</u>	<u>B</u>	<u>Met.</u>	<u>H</u>	<u>Met.</u>	<u>En.</u>	<u>L</u>	<u>Chem.</u>
<b>9. SERVICES &amp; COMMON FACILITIES</b>							
<u>Services</u>		<u>Transport</u>		<u>Admin. Building</u>		<u>Amenities</u>	
<u>Electricity</u>	<u>x</u>	<u>within Estate</u>	<u>-</u>	<u>Conference Hall</u>	<u>x</u>	<u>Fire Brigade</u>	<u>-</u>
<u>Water</u>	<u>x</u>	<u>External</u>	<u>P</u>	<u>Exhibition Hall</u>	<u>x</u>	<u>First Aid</u>	<u>P</u>
<u>Sewerage</u>	<u>x</u>	<u>Bus</u>		<u>Tech. Library</u>	<u>x</u>	<u>Post Office</u>	<u>P</u>
		<u>Laboratories</u>	<u>x</u>	<u>Meeting Rooms</u>	<u>x</u>	<u>Bank</u>	<u>P</u>
				<u>Workshops</u>	<u>x</u>	<u>Showers</u>	<u>-</u>
<b>10. PROCESS IN IMPLEMENTATION</b>				<b>11. FINANCIAL DATA</b>			
<u>Project initiated*</u>		<u>Date</u>		<u>TL</u>			
<u>Cooperative formed</u>		<u>1965</u>		<u>Land Proportion of total site</u>		<u>500,000 Est.</u>	
<u>Land purchased</u>		<u>NA</u>		<u>Infrastructure*</u>		<u>5,500,000 Est.</u>	
<u>Application to Min. of Industry</u>		<u>Not applicable*</u>		<u>Industrial Buildings*</u>		<u>20,900,000 Est.</u>	
<u>Infrastructure completed*</u>		<u>1974</u>		<u>Other Facilities* Cent. Bldgs.</u>		<u>5,570,000 Est.</u>	
<u>Industrial Buildings started</u>		<u>1972</u>		<u>See notes for IN &amp; Equip.</u>			
<u>" " completed*</u>		<u>1976 P</u>		<u>Total Expenditure to date</u>		<u>NA</u>	
				<u>Government Credit*</u>		<u>NA</u>	
<b>12. SUBCONTRACTING WITHIN ESTATE</b>				<b>13. USES OF LOCAL MATERIALS</b>			
<u>Not yet applicable</u>				<u>Not yet applicable</u>			
<b>14. NEW PRODUCTS DEVELOPED</b>				<b>15. SECONDARY/TERTIARY INDUSTRIES</b>			
<u>Not yet applicable</u>				<u>Not yet applicable</u>			
<b>16. EXPORTS</b>				<b>17. PUBLIC AMENITIES</b>			
<u>Not yet applicable</u>				<u>Not yet applicable</u>			
<b>18. LABOUR UNIONISATION</b>							
<u>Not yet applicable</u>							

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B.2. + B.3. Notes on the Gaziantep Industrial Estates

Gaziantep is the most important city in south eastern Turkey. It is situated on the main trunk road to Iraq and Iran, 200 kilometers east of Adana and a short distance from the Syrian frontier. It is said to contain at least 5,000 small industries and artisan shops and its workers have a high reputation for their skill in metalworking, auto repairing and ability to copy machines of all kinds, in which they have great self confidence.

The Gaziantep Industrial Estates are dealt with at some length in these notes because the development of this project seems to offer a case study in "how not to set up an industrial estate". Unhappily, the story is not yet finished. The project is also the first one of its kind in Turkey to have had major United Nations technical cooperation.

The facts have proved difficult to obtain. Three documents have been used as sources of data, particularly financial data,<sup>1</sup> but some of the figures have proved difficult to reconcile, and they do not reconcile with the figures given by the Ministry of Industry in Table 3.

A brief history of the Project

A cooperative of small industrialists, mainly automobile repairers, was formed in 1965 with the object of setting up an industrial estate of 1,100 units. However, 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 the industries on the estate

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<sup>1</sup> The documents are: C.Y.Chang and Akçut Erten: An Overview: Paper presented to the Meeting on Promotion of Small Industries in RCD countries, Teheran, Iran, 11-17 April, 1971. Unido Ref. ID/WG.93/18. Small Industries Development Centre, Gaziantep: Papers for Review Mission, KUSGEM, Nov. 1973, Ref. TUR-68/525. Hari D. Shourie: Final Report, Small Industries Development Programme, UNIDO/TCD 423, March 1975. Some additional information was obtained from national officials at Gaziantep and UN experts.



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and common facilities in the form of workshops, laboratories and training courses. This was because, in spite of the artisanal traditions, the Gaziantep region is considered a backward area. The Government therefore approached the United Nations, (Committee for Industrial Development, the predecessor of UNIDO), for technical aid and a project was developed which was approved by the Government in June, 1965. It received the approval of the Governing Council of the United Nations Development Programme in June, 1968. The Plan of Operation (which permitted the project to become operational), was signed in June 1970, although an advance allocation permitted the first Project Manager to be in post in 1969.

It has not been possible to discover what actions, if any, took place between 1965 and 1970, but it would seem as if the land was purchased but little else done whilst awaiting the UN project.

The first UN Project Manager stayed one year till December 1970, and then there was an Acting Project Manager for a year until Mr. Shourie, whose report is quoted in these notes, joined in November 1971, and stayed until March 1975. Since then there has been a Team Leader, Mr. M.P.Kuntic. The last UN expert is due to leave in April 1976.

There seem to have been some difficulties on the part of members of the Cooperative in raising the necessary finances and in 1971 the Ministry of Industry decided to provide the funds to construct 50 factories of 800 sq. metres each on a part of the site, which would be a "Model Estate". Unlike the Cooperative Estate, which would occupy the remainder of the 200 hectares site, (apart from 6 hectares set aside for the central facilities buildings), firms on the Model Estate would either rent the buildings at very low rentals or might buy them on special terms, but would be exclusively manufacturing industries and might include new firms. The firms would be selected by a committee. (See below).

Construction of the Estate - It was decided that the buildings should be made up of prefabricated concrete units, a technology not previously used in Turkey. This decision seems to have been taken by an earlier Director General

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of Small Industries at the Ministry of Industry.<sup>1</sup> After tenders had been received from 16 firms the contract was awarded in July 1972 to a large contractor in Eskisehir. Completion of the 50 buildings was stipulated for July 1974. The same contractor was also engaged for the Cooperative Estate.

The contractor failed completely to meet his deadline and by early 1975, when the first prefabricated roof cross members were put on the pillars, the pillars collapsed. The situation in November 1975 at the time of the visit was that a number of pillars, suitably reinforced, had been re-erected, and lightened cross members were being set in place. No building was near completion. The Cooperative Estate was even further behind. It seems unlikely that many buildings will be available on the Model Estate before at least mid-1976. The infrastructure of roads, water mains and sewers is said to have been completed, but the estate as a whole is still awaiting electricity supplies.<sup>2</sup> These are being supplied by the Iller Bank.<sup>3</sup> The roads still have to be tarmacked.

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<sup>1</sup> Information from Deputy Director (Technical) of the Centre.

<sup>2</sup> Shourie, op. cit. p.24.

<sup>3</sup> A subsidiary of the Iller Bank.

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The Small Industries Development Centre (KUSGEM)<sup>1</sup> - The Centre buildings, comprising offices, meeting and training rooms, an auditorium (incomplete) and associated workshops and laboratories was taken over at the end of 1973, still somewhat unfinished. The Centre had previously been located in a rented building in the city. The staff and UN experts moved to the new building in February 1974. The buildings are well designed and the workshops and laboratories spacious and light. However, the sawtooth concrete roof has begun to give way round the roof lights, letting in the rain and putting the laboratories out of action.

The Causes of the Delays

It is now more than ten years since the estate was first proposed and the building cooperative formed. Tens of millions of Turkish lira have been poured into it. More than one million U.S. dollars of international aid have been provided, including two expert years of a specialist in industrial estates. What has gone wrong ?

It has been very difficult to elicit any concrete facts. Most of the people now in positions of responsibility have taken up their posts fairly recently and know little of what has happened in the past. The list of contributory causes below must therefore be considered as little more than an intelligent guess.

- (1) The Government held up substantive action until the arrival of the first UN Project Manager in 1969. The Ministry lacked experience in setting up estates of this size and felt the need for expert assistance. Some financial problems of the Cooperative may have also contributed to delay at this stage.
- (2) No contractor in Turkey has had any experience in prefabricated buildings. In view of the immense experience in Europe in this field, it is surprising that the contracting firm did not engage a consulting engineer

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<sup>1</sup> KUSGEM stands for Küçük Sanayi Gelistirme Merkezi

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to advise them. In any case, a UN expert, Mr. C.Y.Chand, was in post from 1970 to 1972. He is said by Shourie to have "designed the factory units",<sup>1</sup> although whether this was layout and not structure is not known. If this is so, he has to share the blame for later failures. Certainly the Ministry should have provided adequate technical supervision as they were paying the bill for the Model Estate and knew that this was a new technique in Turkey.

- (3) It was a mistake to try to introduce a new and untried technology into such a large scale project. It would have been better to have tried it out on a very small scale first, to get some knowhow. At the same time, the authorities were engaged in setting up and getting the extension services into operation and building and equipping the Centre, and possibly did not pay sufficient attention to the way contractors were operating.
- (4) It seems possible, although difficult to prove at this stage, that the technical cooperation provided by the UN proved of little use in this matter. The industrial estates expert had left before the contract was started. There have been a number of problems within the UNIDO teams, and the Turkish authorities are somewhat disenchanted.

All in all, it looks as if there was a general lack of proper planning and supervision, with the Ministry, the contractors and to some extent the UN advisers having to share the blame.

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<sup>1</sup> Shourie, op. cit. p.6.

The Model Estate

The Model Estate is wholly financed by the Government and is intended for selected manufacturing industries. Firms chosen may either rent their premises for TL 2,000 - 2,500 per month (as compared with rents in the city for very inferior and cramped premises which cost about TL 150 - 200 per month) or they may buy, putting down their first cash payments within two years and with 11 years to pay. These terms are rather more favourable than those for the normal cooperative estates.

Firms on the Model Estate have the following special benefits:

- freedom from import duties on machinery;
- 50 per cent cut in corporation tax, which is currently 40 per cent on turnover.

The original object of the Model Estate was to induce the industrialists to come together, since the Gaziantep industrialists had the reputation of being not very cooperative. This seems to be disproved by the rush for places on the Cooperative Estate in which almost all members of the Automobile Repairers Association have taken places, but it is true that at first people feared to move away from the city and their customers.<sup>1</sup>

When the first advertisements for places on the Model Estate were published in early 1974, the favourable terms raised a lot of enthusiasm and 47 firms applied for consideration.<sup>2</sup> However, the long delay in construction and the lengthy process of selection has damped it.

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<sup>1</sup> Interview with the Chairman of the Auto Repairers Association.

<sup>2</sup> Shourie, op. cit. p.23

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Firms seeking acceptance have their cases presented to a committee composed of the Under-Secretary for Industry, the Director General of Small Industries, representatives of the Gaziantep industries and of the Small Industries Development Centre. So far 15 firms have been selected.

They are:

- |                              |                                       |
|------------------------------|---------------------------------------|
| 1. Can making                | 9. Flow and drain processing machines |
| 2. Tin printing              | 10. Diesel engine assembly            |
| 3. Corrugated card and boxes | 11. Car batteries                     |
| 4. Circular saw machines     | 12. Printed plastic film              |
| 5. Steel foundry             | 13. Steel safes                       |
| 6. Iron foundry              | 14. Automatic lamps                   |
| 7. Hot forging               | 15. Electric relays                   |
| 8. Boilers and accessories   |                                       |

There are thus a further 35 places to fill and at the present rate of approvals it will take another seven years to fill them, by which time, perhaps, the Estate will be completed.

The Small Industries Development Centre

The objective in setting up the Centre was to provide central services and facilities to firms on the Estates which it would be uneconomic and probably impractical to try to set up on an individual basis. The main building houses the offices of the Director, professional and administrative staff and a technical library, auditorium and the following technical services:

- Drawing Office for design of tools and dies and working drawings for prototype products and machines being built for firms on the Estate;
- General Engineering Machine Shop equipped with high precision tools capable of producing tools, dies and other production equipment to fine limits. It would also be used for making prototypes of machines developed by firms on the estate at cost price;
- Forging Shop;
- Heat Treatment Shop offering specialised facilities;
- Chemical Laboratory, primarily for quality control of raw materials and finished products;
- Metallurgical Laboratory, designed to help ensure correct quality of steels used in manufacturing metal products, especially auto and machine parts;
- Foundry Sand Testing Laboratory

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The shops and laboratories can be used for demonstrations and practical training.

The Centre is staffed with engineers, chemists, economists and specialists in finance and marketing. They have been assisted over the last five years by United Nations experts in their respective fields. Among the most important current duties of experts and staff has been feasibility studies relating to firms applying for places on the Model Estate.

In the absence of any firms on the Estate the staff of the Centre and the international staff have been providing extension services to member firms of the Cooperative and others in the city. These programmes have now achieved a high degree of acceptance and both economic and workshop staff are fully loaded.

Training programmes are also being developed in a wide range of technical and managerial subjects. In the 12 months to March 1975, 225 entrepreneurs attended courses.<sup>1</sup> A welding course was recently over-subscribed.

The Centre has tried to promote sub-contracting to Gaziantep metal industries. A group of engineering machinists was taken to visit the Turkish Metal Corporation. It seems they were so impressed by the size of the plants and quantity and quality of the machinery they saw that for once they lost their self-confidence and decided they could not meet the requirements.

The work of the Centre was help up from February 1975, by a strike of both professional staff and workers. The professionals were forced to return to work by a Court Order in April, but the non-professional staff held out until June. The cause of the dissatisfaction, especially on the

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<sup>1</sup> Shourie, op.cit. p.18

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part of the professional staff, was that the higher pay they were granted to come to Gaziantep from other parts of the country had been eroded by the inflation and they received no rises. Gaziantep is considered to be the "backwoods" from the point of amenities and culture, and staff from Ankara, Istanbul and other centres in Western Anatolia needed special inducement to go there. The court decision has left most of the staff disgruntled and some are only waiting completion of their UN fellowships, (another inducement), to leave the Centre.

The United Nations Project

The project approved by the UNDP Governing Council in 1968 called for:

- 288 man-months of expert assistance;
- 72 " " " fellowships;
- U.S. \$ 220,000 worth of equipment for the workshops, laboratories and library.

The equipment credit was subsequently increased to U.S. \$ 292,684, making provision for a total international contribution of U.S. \$ 1,072,784, including miscellaneous and overhead expenses.<sup>1</sup>

The original Government financial contribution was put at:

Personnel	TL 7,839,000
Land and Buildings	TL 4,005,000
Equipment and Supplies	TL 108,000
Miscellaneous	TL 1,017,000
incl. transport of equipment.	<hr/> 12,696,000 - (U.S. \$ 1,441,000)

In addition, U.S. \$ 93,720 (TL 843,480) calculated at  $\text{TL } 9 = \text{U.S. } \$ 1$  was earmarked for local costs of the UN experts.

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<sup>1</sup> Papers for Review Mission, op. cit. p.1



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The Government contribution called for a staff of 13 professionals, architect, civil engineer and engineer connected with the estate and 51 administrative, clerical and manual staff.<sup>1</sup> At one point the total staff reached 69 but had dropped slightly by November 1975. The chief chemist left at the end of 1974 and has not yet been replaced.<sup>2</sup> The plan of operation provided for the following UN experts:<sup>3</sup>

	<u>Man-months</u>
- Project Manager	60
- Industrial Economist	36
- Estate Planner	48
- Production Engineer	36
- Mechanical Engineer	48
- Finance/Accounts	24
- Marketing	(24 Actual)
- Short Term Consultants	36

There have been some changes in the duration of the various posts, but on the whole the programme has been carried out. The last expert is due to leave in April 1975.

It is unfortunate that during most of the project the workshops and laboratories were not available and the experts had to work out of premises in the city. Furthermore, much valuable time was lost during 1975 by the strike, during which the experts could not undertake practical work. There has also been some turnover in national counterpart staff. Thus much of the experts' presence over the past five years has been lost, and a new project is needed if the present project is to be properly developed. Further, as firms move on to the estate, it is important that they should be helped with their plant layouts and physical planning so as to achieve efficient conditions.

This being said, the Centre has demonstrated the value of such extension activities sufficiently for the Government to embark upon a National Small Industries Development Centre with headquarters in Ankara.

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1 Papers for Review Mission, App. B. pp 16-17

2 Information-provided by Deputy Director (Technical)

3 Papers for Review Mission op.cit. p.1

Cost of the Estate to date

It is very difficult to obtain reliable figures of the financial provisions for the Estates of the costs to date. The Ministry of Industry list of Estates under Construction, (Table 3) gives a round figure of TL 30,000,000 as allocated to buildings on the Model Estate. This is all Government money, but it is not clear what it includes. The Shourie Report mentions TL 25,000,000 as the probable cost of the 50 buildings, exclusive of other factors.<sup>1</sup> This works out at TL 500,000 per unit of 800 sq. metres or about TL 625 per sq. metre. (cf TL 750 per sq. metre on the Manisa Estate). It seems likely that after the recent setbacks and continuing inflation the costs will finally be much higher.

Table 3 gives a figure for buildings on the Cooperative Estate of TL 104,722,828 with a Government credit of TL 10,000,000. Since the Gaziantep region benefits from the "backward areas" allowance of 70 per cent credit for buildings, this latter figure seems manifestly incorrect. Shourie estimated the total cost of 1,128 units at TL 130,000,000 in March 1975, before the building setbacks.<sup>2</sup> He also gives a figure of TL 6,500,000 for the infrastructure on the Model Estate and an estimated TL 60,000,000 for the Cooperative Estate infrastructure.<sup>3</sup> The cost of the electric power supply for the whole estate, to be installed by a subsidiary of the Iller Bank, which is providing credit, is estimated at TL 65,000,000.

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<sup>1</sup> Shourie op.cit. p.24

<sup>2</sup> Shourie op.cit. p.27

<sup>3</sup> Shourie op. cit. p.27

Over and above these costs there are those of building and equipping the Centre and the UN contribution.

Shourie states that the Government committed TL 20,000,000 to the UN project instead of the TL 13,000,000 called for in the Plan of Operation and supplied equipment worth TL 2,000,000 instead of TL 108,000.<sup>1</sup> The revised equipment sum is presumably included in the new total as in the earlier one. Similarly, it is presumed that the new sum of TL 5,500,000 for the Centre buildings is also included in the TL 20,000,000.

As stated earlier, the revised UN contribution is U.S. \$ 1,072,784.

Summarising the expenditure already made and foreseen on the basis of the best information available to the study mission, it would appear to be made up as below:

	TL
Land (Total)	2,700,000
Model Estate Infrastructure	6,500,000
"    "    Buildings	25,000,000
Coop. Estate Infrastr.	60,000,000
"    "    Buildings	130,000,000
Jovt. contribution (covering Centre Bldgs)	20,000,000
Counterpart Contribution	816,480
Total National Contribution	TL 245,016,480
	(U.S. \$ 16,334,432 )
UN Contribution	U.S. \$ 1,072,784

And as yet not a single factory has been completed !

Notes on Conditions of Small Industry in the City

The existing conditions in the city were, on average, probably the worst seen anywhere. Three firms (foundry, two brick and tile plants) were operating in caves, the only merit of which seems to be even temperatures summer and winter. One manufacturer working in a cave, who is to move to

<sup>1</sup> Shourie, p. cit. p.26

INDUSTRIAL ESTATES STUDY

TURKEY

CITY IZMIR      ESTATE IZMIR II      OPEN/UNDER CONST.      STUDY NO. B.4.

1. REGION Izmir      2. CITY POPULATION<sup>1</sup> 520,832      3. EXECUTING AGENCY Cooperative

<b>4. PHYSICAL DATA</b>	<u>Total Site Area (m<sup>2</sup>)</u>	<u>Planned</u>	<u>Actual</u>	<b>5. OWNERSHIP</b> Local industrialists to be re-located.	<u>Before</u> NA	<u>Now</u> -
	<u>Buildings Area (m<sup>2</sup>)</u>	108,932	108,932			
	<u>Roads, Green, etc (m<sup>2</sup>)</u>	76,252	76,252	<b>6. PERSONS ENGAGED</b> (Estimated Total)	-	-
	<u>Industrial Bldgs. Total</u>	32,688	32,688			

<b>7. DEFT ESTATE</b>	<u>Covered &amp; Open Working Areas (m<sup>2</sup>)</u>	<u>Covered</u>	<u>Open</u>	<u>Number</u>	<u>Business Failure</u> <u>Relocated - Larger Premises</u> <u>Left to Europe</u> <u>Death</u>	<u>Number</u> Not applicable	
	<u>Type of Building</u>	A	50	-			78
		B	63	35			506
		C	92	39			62
		D	134	55			54
		E	240	72			22
		F	307	92			24
G							

**8. INDUSTRIES REPRESENTED<sup>2</sup>** see notes.

AR	Am.R	GM	P	S	T
AM	Am.P	EP	H	C	L
TR	Am.L	B	Inst.	Fu.	Chem.

**9. SERVICES & COMMON FACILITIES**

<u>Services</u>	<u>Transport</u>	<u>Admin. Building</u>	<u>Amenities</u>
Electricity x	within Estate -	Conference Hall x	Fire Brigade -
Water x	External P	Exhibition Hall -	First Aid -
Sewerage x		Tech. Library P	Post Office -
		Meeting Rooms x	Bank -
		Workshops -	Showers -
			Barber P
			Warehouse -
			Shops -
			Restaurant P
			Police Post -

<b>10. PROCESS IN IMPLEMENTATION</b>	<u>Date</u>	<b>11. FINANCIAL DATA</b>	<u>TL</u>
Cooperative founded	1968	Land	8,000,000
Land purchased	1968	Infrastructure	NA
Application to Min. of Industry	1969	Industrial Buildings + Admin.	84,500,000
Infrastructure completed	NA	Other Facilities	-
Industrial Buildings started	1970	Total Expenditure to date	92,500,000+
" " completed	1975 Dec.	Government Credit	36,800,000

**12. SUBCONTRACTING WITHIN ESTATE**  
Not yet applicable.

**13. USE OF LOCAL MATERIALS**  
Not yet applicable.

**14. NEW PRODUCTS DEVELOPED**  
Not yet applicable.

**15. SECONDARY/TERTIARY INDUSTRIES**  
Not yet applicable.

**16. REPORTS**  
Not yet applicable.

**17. PUBLIC AMENITIES**  
Not yet applicable.

**18. LABOUR UNIONISATION**  
Not yet applicable.

**INDUSTRIAL ESTATES STUDY**

**TURKEY**

CITY <u>IZMIR</u>		ESTATE <u>IZMIR III</u>		OPER/UNDER CONST.		STUDY NO. <u>B.2.</u>	
<b>1. REGION</b> <u>Izmir</u>		<b>2. CITY POPULATION</b> <sup>1</sup> <u>220,832</u>		<b>3. EXECUTING AGENCY</b> <u>Cooperative</u>			
<b>4. PHYSICAL DATA</b>		<u>Planned</u>	<u>Actual</u>	<b>5. OWNERSHIP</b> <u>Local Industrialists - relocated.</u>			
<u>Total Site Area (m<sup>2</sup>)</u>		<u>175,000</u>	<u>175,000</u>	<b>6. PERSONS ENGAGED</b>		<u>Before</u>	<u>Now</u>
<u>Buildings Area (m<sup>2</sup>)</u>		<u>112,000</u>	<u>NA</u>	<u>(Estimated Total)</u>		<u>NA</u>	<u>-</u>
<u>Roads, Green, etc (m<sup>2</sup>)</u>		<u>63,000</u>	<u>NA</u>	<b>Est. Average per Unit</b>			
<u>Industrial Bldgs. Total</u>		<u>520</u>	<u>See notes</u>	<u>-</u>			
<b>Covered &amp; Open Working Areas (m<sup>2</sup>)</b>		<u>Covered</u>	<u>Open</u>	<u>Number</u>	<b>7. INLET ESTATE</b>		<u>Number</u>
<u>Type of Building</u>					<u>Business Failure</u>		<u>Not applicable</u>
<u>**Upper floor</u>		<u>A</u>	<u>72+30</u>	<u>30</u>	<u>Relocated - Larger Premises</u>		
		<u>B</u>	<u>110+40</u>	<u>45</u>	<u>Left to Europe</u>		
		<u>C</u>	<u>144+50</u>	<u>60</u>	<u>Death</u>		
		<u>D</u>	<u>220+60</u>	<u>70</u>			
		<u>E</u>	<u>-</u>	<u>-</u>			
		<u>F</u>	<u>-</u>	<u>-</u>			
		<u>G</u>	<u>-</u>	<u>-</u>			
<b>8. INDUSTRIES REPRESENTED</b> <sup>2</sup>		<u>See notes.</u>					
<u>AI</u>	<u>Am.P</u>	<u>CI</u>	<u>F</u>	<u>S</u>	<u>T</u>		
<u>AI</u>	<u>Am.P</u>	<u>EP</u>	<u>H</u>	<u>C</u>	<u>L</u>		
<u>FB</u>	<u>Am.I</u>	<u>B</u>	<u>Met.</u>	<u>Fu.</u>	<u>Chem.</u>		
<b>9. SERVICES &amp; COMMON FACILITIES</b>							
<u>Services</u>		<u>Transport</u>		<u>Admin. Building</u>		<u>Amenities</u>	
<u>Electricity</u>	<u>P</u>	<u>within Estate</u>	<u>-</u>	<u>Conference Hall</u>	<u>P</u>	<u>Fire Brigade</u>	<u>-</u>
<u>Water</u>	<u>P</u>	<u>External</u>	<u>P</u>	<u>Exhibition Hall</u>	<u>P</u>	<u>First Aid</u>	<u>P</u>
<u>Sewerage</u>	<u>P</u>			<u>Tech. Library</u>	<u>-</u>	<u>Post Office</u>	<u>P</u>
		<u>Guest House</u>	<u>P</u>	<u>Meeting Rooms</u>	<u>P</u>	<u>Bank</u>	<u>P</u>
				<u>Workshops</u>	<u>-</u>	<u>Showers</u>	<u>-</u>
<b>10. PROGRESS IN IMPLEMENTATION</b>				<b>11. FINANCIAL DATA</b>			
<u>Cooperative founded</u>		<u>Date</u>		<u>Land</u>		<u>TL</u>	
<u>Land purchased</u>		<u>1972</u>		<u>Infrastructure</u>		<u>13,000,000</u>	
<u>Application to Min. of Industry</u>		<u>1972</u>		<u>Industrial Buildings</u>		<u>NA</u>	
<u>Infrastructure completed</u>		<u>1973</u>		<u>Other Facilities</u>		<u>Est. 61,000,000</u>	
<u>Industrial Buildings started</u>		<u>1975</u>		<u>Total Expenditure to date</u>		<u>10</u>	
<u>" " completed</u>		<u>1976 - 100</u>		<u>Government Credit</u>		<u>36,600,000</u>	
<b>12. SUBCONTRACTING WITHIN ESTATE</b>				<b>13. USES OF LOCAL MATERIALS</b>			
<u>Not yet applicable</u>				<u>Not yet applicable</u>			
<b>14. NEW PRODUCTS DEVELOPED</b>				<b>15. SECONDARY/TERTIARY INDUSTRIES</b>			
<u>Not yet applicable</u>				<u>Not yet applicable</u>			
<b>16. EXPORTS</b>				<b>17. PUBLIC AMENITIES</b>			
<u>Not yet applicable</u>				<u>Not yet applicable</u>			
<b>18. LABOUR UNIONISATION</b>							
<u>Not yet applicable</u>							

App. III

the Model Estate (not seen) is making and exporting high quality circular saw benches. Much of the auto repairing is carried on out in the "industrial zone" which has now been engulfed by residential buildings in the expanding city. Here the streets are so cluttered with cars, bodies, chassis and raw materials that it is difficult to get even a single line of traffic between. Sanitary facilities for employees are inexistent. Nevertheless, two or three impressive examples of Gaziantep technical initiative were seen. The case for several industrial estates seems overwhelming from every point of view, likewise for extensive and intensive technical assistance.

B.4. and B.5. Notes on the Izmir Industrial Estate

Izmir is the second largest city in Turkey and its second port. It has a number of large factories but its commerce is mainly in fruit and nuts coming from the surrounding region. There is one small industries estate in operation since 1968, made up mainly of blacksmiths, but this was not seen. The two estates under construction are mainly designed to clear automobile repair shops and general engineering machine shops out of the centre of the town where they are operating under very cramped conditions, sometimes in residential districts. Two other estates for metal-workers are being launched.

Izmir II - Construction of the Estate - Although the Cooperative was formed and the land purchased in 1968 and Ministry approval obtained in 1969, building has been a long-drawn out process. A visit was paid to the estate which is virtually completed and should open at the end of 1975. No reason was given for this. However, some members seem to have dragged their heels, partly from fear that they would lose contact with their customers if they moved out of the city centre. These fears were allayed when they saw the success of the First Industrial Estate, (blacksmiths), and the example was even more influential in the case of Izmir III.

Izmir III - Construction of the Estate - Construction of the Third Estate is proceeding step by step. Some members are in a hurry to move, others less pressed. The workshop units will be completed at the rate of 100 per year to a total of 420, with the whole estate completed by the end of 1979. Those who wish to move into the first 100 workshops in 1976, including some workers now in Europe who will be returning with some machinery and equipment purchased, will have to pay premiums to be allowed to do so. (The reasoning behind this seems faulty, because construction costs will certainly have risen substantially by 1979. Latecomers will not only have lost possibilities of increased output while still contributing to building costs, but may find themselves paying more than the firstcomers. However, attempts to discuss the economics were rather frustrated by the language problems. One cannot always insist in these circumstances).

App. III

Conditions in existing Workshops - A tour was made of workshop areas in the city. Conditions were uniformly very bad, sometimes appalling. Machines were operating in very confined spaces on the ground floors of residential buildings and work was going on all over the sidewalks, spilling into the carriageways, even in highclass residential districts. Lighting, heating and ventilation in some of the workshops were lamentable; coke stoves were being used in very confined spaces; gangways were sometimes so narrow that there was real danger from the - as ever- unguarded machinery. One automobile repairers complex consisting of an area surrounded mainly by ramshackle wooden buildings offered particularly bad conditions from every point of view. The need for the industrial estates was made very evident.

Workshops visited in Izmir -

- (1) General Engineering Machine Shop - This shop is composed of two small rooms, one about 5 m by 5 m, the other about 3 m by 9 m, without connection between them. They face parallel streets in a residential district. There are a total of 13 employees and several machine tools, one or two of high quality. One of the partners has designed a disc brake facing lathe which was shown in the Izmir Fair and won an award from the Halk Bank. The firm is buying space on the Izmir II estate.
- (2) Auto Repairers - This is a complex of various specialists in automobile repairs situated in one of the poorer parts of the city. Most of the buildings are wooden and in very bad repair - roofs leaking, no doors - and with complete lack of amenities for the workers. Conditions are very cramped and lighting inside the building generally poor. Some of the business here consists in re-building older cars which have been brought by workers returning from Europe and will be used as taxis. This is carried out with great skill and the end results are impressive.
- (3) Grinding Shop - Specialising in brake drum and piston grinding this shop, with 10 employees, is in the middle of a residential district in Izmir. Conditions are cramped, and there is the usual absence of any safety measures, in spite of the dangerous process.



Comment - Small industry in Izmir, as in most other cities, has simply been allowed to grow haphazardly in the absence of any zoning or other serious city planning. The case for industrial estates is particularly strong here because of the very large numbers. Izmir is a fairly wealthy city by Turkish standards with a higher than national average of automobiles per 100 of the population. The fact that even here there are few (if any) large garages doing repair work of the type normal in the towns of Western Europe has caused the proliferation, over the last years, of small repair workshops and their attendant general machine shops. Apart from the generally very bad and inefficient working conditions, all the industrialists talked to were convinced that once they had larger premises they would be able to increase their productive capacities greatly and take on more work. They were equally convinced that it would have been impossible for them acting on their own to have obtained land and put up buildings at a cost as low as those on an industrial estate.

A P P E N D I X IV

SOME NOTES ON THE IZMIR QUESTIONNAIRE

In 1970 the Department of Small Industry and Handicrafts carried out a survey on the First Industrial Estate (Blacksmiths) at Izmir to try to find out what benefits have been received and growth achieved by firms who moved out to the estate which became fully operational in 1969, although some firms moved in earlier.

Two questionnaires, one covering general particulars of the industrial estate and the second a unit to unit survey, were presented to the Managing Board of the Building Cooperative and to each firm on the estate. The first of these contains 60 groups of questions, the second a total of 54 groups.

Copies of these were obtained, but they are not strictly relevant to the study and are therefore not included in this Report.

The official of the Department of Small Industry and Handicrafts with whom the questionnaire was discussed and who took part in analysing the data said that, unfortunately, the results were of only doubtful value. The filling in of the forms given to the industrialists was not very satisfactory, (which is not altogether surprising!). It also appears that the various stages of the enquiry were handled by different groups of officials who were not properly coordinated. For that reason he was only able to give some more or less disconnected information, the more relevant parts of which are given below:

Out of 141 forms distributed, 116 were filled in, most only partially. They were never followed up.

The figures under headings "Before moving to the Estate" and "After moving to the Estate" did not all refer to the same years, and the beginnings of inflation made comparability difficult. Of the questions answered:

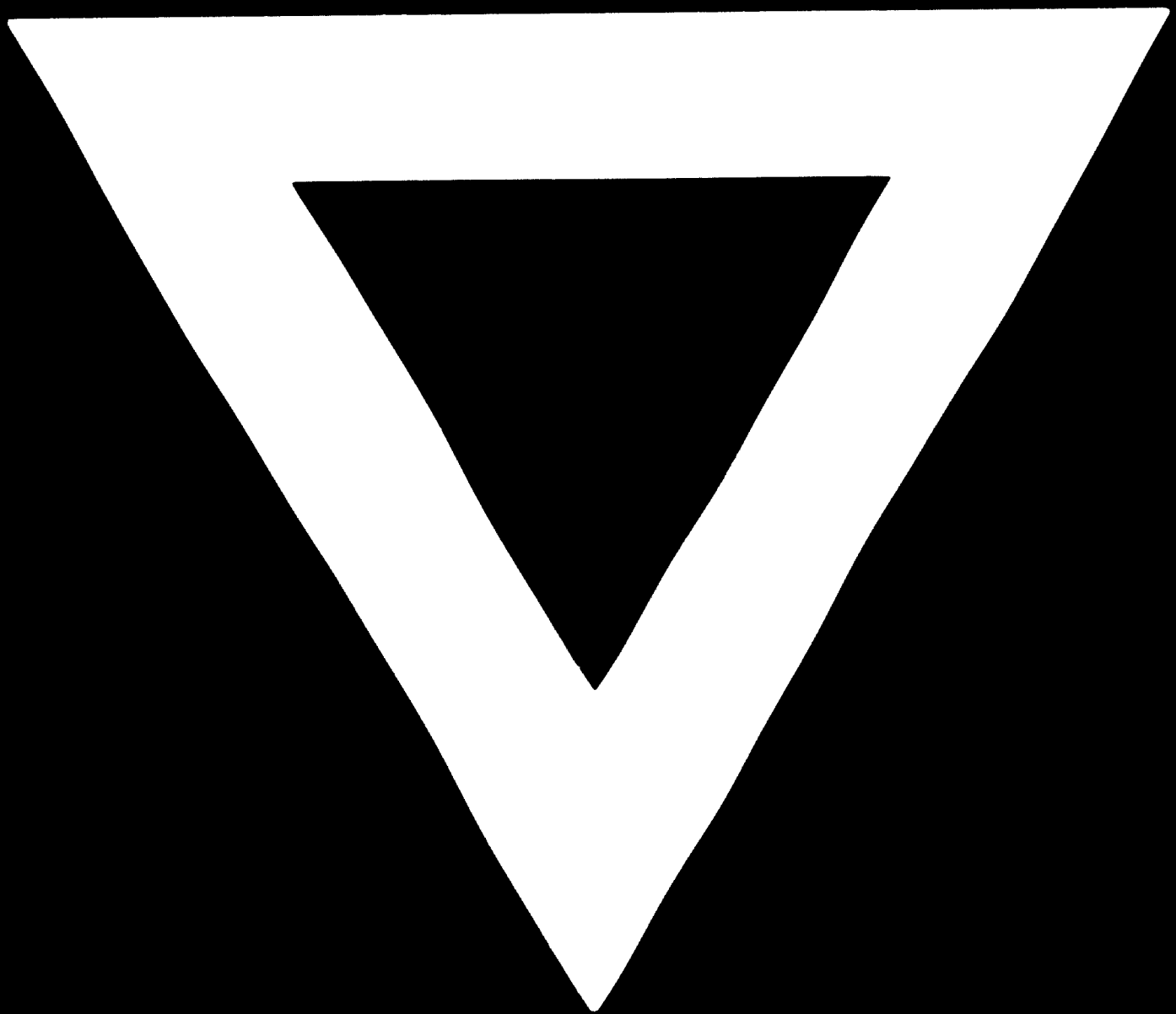
APP. IV

	<u>No. of firms</u>	<u>Before</u>	<u>After</u>	<u>A. to B. %</u>
(1) Total covered area	89	5,934 sq.m.	13,761 sq.m.	231
(2) Total covered area asked for	21	3,700 sq.m. asked for	2,830 sq.m. allocated	76
(3) Employment	117	305	388	127
(4) Horsepower	N.A	707	1,553	219
(5) Gross Sales Revenue	N.A	TL 1,830,000	TL 5,700,000	311
(6) Capital/Output	29	0.80	1.12	140
(7) Capital/Labour	49	TL 9,176 (1967)	TL 19,531 (1970)	212
(8) Labour Productivity Output per worker	21	TL 10,181 (1967)	TL 27,221 (1970)	267

These figures under headings (5) to (8) have not been adjusted to allow for price increases and thus overstate the performance which nevertheless is impressive. As far as they go, the figures suggest a growth rate in all factors, even employment, higher than the national average, in some cases very much higher.



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