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A FRAMEWORK FOR TECHNICAL ASSISTANCE PROGRAMMING IN TURKEY*

Prepared by the

Regional and Country Studies Branch

Studies and Research Division

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PREFACE

The working paper presented here is to serve as an analytical basis for programming technical assistance in respect of the industrial sector in Turkey. Its aim is not to formulate specific recommendations for detailed technical assistance projects, but to provide the background information from which such projects subsequently can be identified.

In chapter I, the past experience and current trends in Turkey are assessed, in order to establish the general economic framework within which technical assistance will need to operate.

Chapter II reviews the current structure of Turkey's industrial sector and presents its prospective changes, as projected in the Five-Year Development Plan (1985-1989). This allows a first identification of broad areas where technical assistance requirements will arise.

A branch-specific approach is adopted in chapter III, where current constraints and development prospects of key industrial branches are assessed. On this basis, focal points for future technical assistance are identified.

The concluding chapter IV is dedicated to cross-sectoral issues, which involve specific approaches to the design of technical assistance projects in various sectors alike: the commitment of the Government to privatize (parts of) state economic enterprises, and the problems and prospects of small-scale industries.

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I. Economic development in Turkey: current trends and prospects

1. Throughout the 1970s, Turkey's economic development followed a model of inward-looking industrialization, supported by high non-tariff import barriers. In addition, the Government actively promoted public enterprises which played - and still play - an important role in the industrial sector. Turkey had to turn increasingly to external sources of finance, after the rise of oil prices in 1973, in order to secure the growing amounts of imports required to maintain the growth momentum of the economy. Rapid reserve decumulation, extensive short-term borrowing and a significant flow of workers' remittances supported economic growth, which averaged 7.7 per cent in the 1973-76 period. In 1977, the accumulated external debt led to a drastic deterioration of Turkey's credit worthiness in the eyes of foreign banks. The subsequent sharp drop in capital inflows from abroad spilt over into severe import shortages which disrupted industrial growth. From 8 per cent in 1975 and 1976, GNP growth dropped to 4 per cent in 1977 and became negative in 1979 (Table 1).

2. Consequently, the authorities initiated a major shift of the development strategy in January 1980. Key objectives of the programme were to change the development pattern from an inward-looking to an outward-looking orientation and to enhance the role of market forces and of the private sector in the economy. The new Government, which took office in December 1983, adopted measures to accelerate the process of exposing the economy to market forces and international competition. In particular, it initiated a liberalization of imports, of capital transactions and exchange regulations, and took measures aiming at reducing the influence of the State on economic activity. This new economic programme was consolidated in the Fifth Five-Year Plan (1985-1989).

3. The results of the reorientation of Turkey's industrial development to an outward-looking pattern were spectacular. Economic growth resumed in 1981, when GNP grew by 4 per cent, and accelerated to almost 6 per cent in 1984. In 1985 the rate of economic expansion slowed down to 5 per cent, which still can be considered a satisfactory performance of the economy. There are signs,

Table 1. Growth of output
(Percentage, based on 1968 prices)

Sectors	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985 _{a/}
Agriculture	10.9	7.7	-1.3	2.7	2.8	1.7	0.1	6.4	-0.1	3.7	2.2
Industry	9.0	10.0	10.2	6.6	-5.6	-5.9	7.6	4.6	8.2	9.3	6.1
- Mining	11.8	5.0	39.2	26.7	-16.3	-11.0	0.2	-5.8	7.9	-0.2	5.1
- Manufacturing	8.1	9.8	7.3	3.6	-5.3	-5.4	8.7	5.1	9.0	10.3	5.5
- Energy	17.1	18.4	10.6	12.4	8.0	-3.5	5.9	11.6	2.2	9.0	12.1
Services	7.9	9.0	5.6	4.1	0.2	-0.2	5.6	3.3	4.2	5.2	3.0
GDP at factor cost	8.9	8.9	4.9	4.3	-0.6	-1.0	4.7	4.3	4.1	5.8	3.6
GNP at market prices	8.0	7.9	3.9	2.9	-0.4	-1.1	4.1	4.6	3.3	5.9	4.9

Source: SIS-SPO.

a/ SIS estimate dated November 1985.

however, that the impressive growth rates achieved by the Turkish economy in the first half of the 1980s will not easily be maintained in the second half of the 1980s. The most crucial variable for Turkey's economic development in the years ahead will be the performance of manufacturing. As the leading sector in Turkey's economic development in the last ten years, manufacturing increased its share in GDP from 17 per cent in 1975 to more than 24 per cent in 1985 (Table 2). At the end of the 1970s, the manufacturing sector was particularly affected by Turkey's foreign exchange crisis and the subsequent economic recession. After sharp declines by more than 5 per cent in 1979 and 1980, manufacturing output became again the leading sector in the economic expansion from 1981 to 1984, and grew at impressive rates, which peaked in 1984 at 10.3 per cent.

4. Manufacturing growth was led by a dynamic expansion of Turkey's industrial exports which benefited from an initial devaluation of the Turkish lira in 1980 and the subsequent adoption of a flexible exchange rate policy, from export promotion measures and from the liberalization of external trade and payment regulations. Whereas Turkey's total exports grew by an already remarkable average annual rate of almost 26 per cent between 1980 and 1984, the country's manufactured exports^{1/} even surpassed this performance, growing at an annual average rate of 49 per cent during this period. As a result, the share of manufactured exports in Turkey's total exports doubled from 27 per cent to 54 per cent between 1980 and 1984. Yet, this impressive overall export growth is based on a limited number of products, with clothing, textiles and iron and steel products accounting for almost three quarters of Turkey's manufactured exports in 1984 (Table 3). Moreover, the market outlets for Turkey's exports are also concentrated in a limited number of countries, with the Federal Republic of Germany, Iraq and Iran absorbing almost 42 per cent of Turkey's total exports (Table 4).

5. Both the concentration of export commodities and markets make Turkey's export performance - and ipso facto its industrial growth - vulnerable to changes in the international environment. The two single most important export items, clothing and textiles, face increasing protectionism in European and American markets. On the other hand, exports of engineering products are mainly sold to markets whose purchasing power is directly linked to revenues

1/ Defined as SITC 5-8 less 68, i.e., excluding food products.

Table 2. Composition of GDP
(Percentage, based on current prices)

Sectors	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985 ^{a/}
Agriculture	29.1	29.6	27.6	25.	23.1	22.7	21.9	20.7	19.5	19.4	17.4
Industry	20.0	19.2	19.8	23.	23.8	25.2	26.0	27.0	28.5	29.4	31.8
- Mining	1.3	1.2	1.8	1.	1.5	1.7	2.2	2.1	2.3	2.2	2.5
- Manufacturing	17.0	16.3	16.3	19.	20.7	21.3	21.7	22.4	23.8	24.3	24.2
- Energy	1.7	1.6	1.8	1.8	1.6	2.1	2.1	2.6	2.4	2.9	5.1
Services	51.0	51.2	52.5	51.7	53.1	52.2	52.1	52.3	52.0	51.2	50.8
- Construction	5.3	5.2	5.3	5.4	5.2	5.2	4.7	4.4	4.1	3.9	3.8
- Trade	13.8	13.6	13.4	13.9	15.0	15.7	17.2	17.4	18.1	18.5	18.3
- Transport and communication	9.2	9.1	9.1	9.2	9.9	10.0	10.3	10.2	10.3	10.1	10.0
- Public services	10.8	11.1	12.7	11.2	11.7	9.3	7.9	8.5	7.9	6.3	6.1
- Other services	11.9	12.2	12.0	12.0	11.4	11.9	12.0	11.8	11.5	12.4	12.5
GDP at factor cost	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: SIS.

^{a/} SIS estimate dated November 1985.

Table 3. Composition of manufactured exports^{a/}, 1984

Commodity	Value (in thousands of dollars)	Share in total manufactured exports (Per cent)
Clothing	1,267,388	33.0
Textiles	1,003,966	26.1
Iron and steel	531,300	13.8
Machinery	232,399	6.0
Non-metallic mineral manufactures	195,198	5.1
Transport equipment	<u>120,721</u>	<u>3.1</u>
Sub-total	3,350,972	87.1
Total manufactured exports	3,846,766	
Total exports	7,133,602	

Source: State Institute of Statistics.

a/ Defined as SITC 5-8 less 68.

Table 4. Principal destinations of exports, 1984

	In millions of US dollars	Percentage share	Percentage change per annum	
			1984	1980-84
Fed. Rep. of Germany	1,280	17.9	52.7	20.9
Iraq	934	13.1	191.9	52.6
Iran	751	10.5	-31.0	128.7
Italy	501	7.0	18.4	18.7
Saudi Arabia	378	5.3	3.6	80.0
USA	368	5.2	58.6	28.5
Switzerland	358	5.0	24.7	25.7
UK	261	3.7	5.7	20.4
France	201	2.8	11.7	8.0
TOTAL including others	7,133	100.0	24.5	25.8

Source: Central Bank of Turkey.

from petroleum exports. In 1984 the combined markets of Iraq, Iran and Saudi Arabia absorbed almost 29 per cent of Turkey's total exports, but their share in engineering exports can be expected to be significantly higher.

6. Increasing protectionism in developed country markets, the reduced purchasing power of markets in developing countries and deteriorating Turkish competitiveness due to quality problems and high production cost resulted in a deceleration of Turkey's export expansion in 1985. The growth rate of total exports was halved from 24.5 per cent in 1984 to 11.6 per cent in 1985, and some commodity groups even experienced drastic declines. Turkey's durable consumer goods exports (mainly refrigerators and fans, followed by a wide margin by washing machines and vacuum cleaners) decreased by 77.5 per cent, in value terms from 15 million dollars in 1984 to 3.3 million dollars in 1985. The slow-down of Turkey's export drive in 1985 was reflected in a reduction of the growth rates of economic and manufacturing output. Whereas the rate of economic growth fell from 5.9 per cent in 1984 to 4.9 per cent in 1985, the growth rate of manufacturing output was almost halved, from 10.3 to 5.5 per cent.

7. To sum up, the Turkish economy will face difficulties in the next five years to sustain the growth momentum achieved during the first half of the 1980s. The important role played particularly by industrial exports in Turkey's economic recovery since 1981 on the one hand, and the vulnerability of these exports to external factors on the other hand, introduce a significant element of uncertainty into Turkey's economic outlook. Yet, Turkey's natural resources, its competitive labour cost, its geographical location, and the flexibility of its industrial sector in responding to new incentives and conditions set by economic reforms in 1980 and 1984, do support the optimistic view that the Turkish economy, and particularly its industrial sector, will successfully meet the challenges of the years ahead.

8. Technical co-operation with UNIDO could play an important role in supporting the restructuring process of Turkey's industrial sector during the Fifth Plan period. The technical co-operation projects which are recommended in the following chapters of this report are designed to give due consideration to the current and prospective trends of Turkey's industrial sector, and to the industrial policy objectives and measures of the Turkish

Government. In particular, the recommended technical co-operation projects pay specific attention to the following development objectives:

- promoting the expansion of Turkey's industrial exports through co-operation in fields such as quality improvement and control and other production support activities;
- stimulating the use of Turkey's domestic resources through particular attention to agro-based industrial activities;
- diversifying Turkey's industrial and particularly export base through support to "infant industrial activities", particularly in the engineering sector;
- improving Turkey's energy balance, both through direct support to PETKIM and through measures aiming at energy conservation and the utilization of alternative energy resources; and
- supporting the policy of the Government to strengthen the role of the private sector, through giving particular attention to small-scale industry development.

The following chapter will briefly review the prospective changes of Turkey's industrial sector during the Fifth Plan period, and assess selected subsector priority areas for technical co-operation in the framework of the above objectives.

II. Turkey's manufacturing sector: current structure and projected changes

9. Table 5 gives an overview of the current structure (1983) of Turkey's industrial sectors and of its structure in 1989 as projected in the Fifth Five-Year Development Plan. In 1983, Turkey already disposed of a relatively broadly based, rather diversified industrial sector. Consumer goods production, accounting for almost 47 per cent of output, is dominated by the food industry, followed by the production of textiles and clothing which, combined, account for almost 10 per cent of industrial output. The production of intermediate goods includes a wide range of products, most important of which are in value terms petroleum products, iron and steel, chemicals and wood/cardboard products. These heavy basic industries are concentrated in the public sector in about 20 state economic enterprises, controlling about 400 plants. These enterprises employ about 250,000 workers out of a total work-force of 850,000 employees in the formal sector (units employing 10 or more workers). Capital goods production is significantly less developed,

amounting to just 13 per cent of industrial production. Yet, the production of capital goods will be the most dynamic segment of manufacturing and almost double its output, and increase its share in total manufacturing production to 15 per cent during the 1983-1989 period.

10. Of eight future growth branches projected to increase i.e. the total ranking of manufacturing activities by at least two positions between 1983 and 1989, four can be found in the capital goods sector: agricultural machinery, electronics, highway vehicles and railway vehicles. The other three branches are petrochemicals, cement, plastics, and ready-made clothing. However, these projected changes in rank positions should not be considered identical to those branches which will be crucial for Turkey's industrial development in the second half of the 1980s and on which technical co-operation should be focussed. The reason for the caveat is that the projected changes in rankings are influenced by the "base effect", which makes it easier for absolutely small branches to improve significantly their relative position with modest absolute output increases. To illustrate this point: the projected increase in value terms of the most dynamic manufacturing segment, capital goods, amounts to just 50 per cent of the projected increase of the consumer goods production, although the latter is, in relative terms, a declining segment of Turkey's manufacturing sector.

11. The establishment of technical co-operation priorities would therefore also need to take account of the current weight of a branch in the industrial sector, its contribution to the objectives of the current Development Plan, and its current and potential comparative advantage. Regarding the latter, Turkey disposes of well developed and close transportation links to markets in Europe, the Gulf and in North Africa. In the latter two markets, Turkey could utilize those advantages particularly with products having a relatively high weight-to-value ratio and which utilize Turkey's supply of minerals and agricultural products. Moreover, processes with a medium level of capital intensity should be given preference due to Turkey's wage cost advantages. Of particular importance would appear to be:

**Table 5. Rank order and shares of manufacturing industries
by value of production**

(in billions of Turkish lira, at constant 1983 prices)

Manufacturing Consumption Goods	1983			1989			Annual Growth Rate 1978-83 (%)	Annual Growth Rate 1984-89 (%)
	Output (Actuals)	Share %	Rank	Output (Est.)	Share %	Rank		
Foodstuffs	2,706.9	30.3	1	3,698.6	27.4	1	5.6	6.2
Textiles	600.5	6.7	3	856.6	6.3	3	3.2	6.0
Ready-made Clothing	54.3	2.8	9	515.7	3.8	7	6.1	11.1
Tobacco	213.7	2.4	10	283.8	2.1	14	5.1	4.6
Furniture	208.9	2.4	11	295.5	2.2	12	3.9	5.9
Beverages	111.1	1.2	20	150.3	1.1	22	2.6	4.8
Footwear	98.4	1.1	22	136.9	1.0	25	4.9	5.7
	<u>4,193.8</u>	<u>46.9</u>		<u>5,937.4</u>	<u>43.9</u>		<u>5.1</u>	<u>6.4</u>
<u>Intermediate Goods</u>								
Petroleum Products	1,100.2	12.3	2	1,653.5	12.3	2	3.8	7.5
Iron & Steel	467.5	5.3	4	839.6	6.2	4	9.1	9.9
Chemicals	334.5	3.7	5	522.4	3.9	6	7.1	7.6
Wood/Cardboard Products	326.4	3.6	6	464.5	3.4	8	1.4	6.0
Petrochemicals	174.5	1.9	13	308.7	2.3	10	8.7	8.3
Non-iron Metals	157.4	1.8	15	240.6	1.8	15	6.8	6.9
Fertilizer	143.3	1.6	16	198.9	1.5	17	22.9	6.4
Silk Spinning	130.0	1.5	17	137.5	1.0	24	1.3	1.6
Cement	121.7	1.4	18	224.7	1.7	16	-2.3	9.9
Baked Clay	113.9	1.3	19	153.4	1.1	21	2.8	4.7
Plastics	98.6	1.1	21	155.6	1.1	19	8.4	7.0
Rubber	93.4	1.1	24	144.1	1.0	23	11.5	6.8
Printing	86.2	0.9	25	109.5	0.8	28	3.6	4.1
Leather	76.6	0.9	27	128.0	0.9	26	6.9	7.5
Glass	73.9	0.8	28	114.5	0.8	27	7.4	6.7
Paper	64.2	0.7	29	92.2	0.7	29	5.4	6.1
Ceramics	25.2	0.3	31	44.5	0.3	32	0.2	9.2
	<u>3,587.5</u>	<u>40.2</u>		<u>5,532.2</u>	<u>41.0</u>		<u>5.4</u>	<u>7.3</u>
<u>Capital Goods</u>								
Highway Vehicles	285.4	3.2	7	563.0	4.2	5	4	11.5
Metal Goods	274.4	3.0	8	409.0	3.0	9	6.8	7.0
Non-electrical Machinery	180.0	2.0	12	298.0	2.2	11	8.1	8.7
Electrical Machinery	172.8	1.9	14	295.2	2.2	13	5.3	9.7
Agricultural Machinery	96.5	1.1	23	176.9	1.3	18	14.8	10.4
Electronics	78.6	0.9	26	153.5	1.1	20	6.9	12.4
Ship Building	26.8	0.3	30	53.6	0.4	31	6.2	10.0
Railway Vehicles	23.0	0.3	32	60.9	0.5	30	0.2	11.4
Prof/Scientific Equipment	7.8	0.1	33	13.4	0.1	33	4.5	9.0
Aircraft Manufacturing	1.9	0.1	34	3.9	0.1	34	2.6	10.9
	<u>1,147.2</u>	<u>12.9</u>		<u>2,027.4</u>	<u>15.1</u>			
Manufacturing Total	<u>8,928.3</u>	<u>100.0</u>		<u>13,497.2</u>	<u>100.0</u>		4.9	7.5
<u>Memoranda Items</u>								
Mining Sector	410.1	3.1		596.2	3.1		-2.9	7.3
Energy Sector	434.1	3.5		808.5	4.3		4.1	11.2
Manufacturing Sector	8,928.3	68.2		13,497.2	71.1		5.3	7.5
Total Industry	9,772.5	74.6		14,901.9	78.5		4.9	7.5
<u>Total Production</u>	<u>13,091.1</u>	<u>100.0</u>		<u>18,994.1</u>	<u>100.0</u>		4.1	6.6

Source: The Plan.

- textiles and garments;
- leather products;
- agro-industries; and, in the long run,
- engineering industries

where Turkey can be expected to acquire new, significant cost advantages in selected parts (in particular: light engineering) and electronics. This optimistic outlook is reinforced by the growing trend of migrant workers from EC countries, frequently returning with both significant investible savings and sizeable "human capital" in terms of specialized technical skills. In addition, production support activities appear to be well suited for technical co-operation, such as packaging and quality control.

III. Priority areas for technical co-operation in selected manufacturing branches

a. Food industry

12. The food industry continues to play an important role in the manufacturing sector, accounting for 30.3 per cent of the total manufacturing output in 1983. According to the Plan, the annual growth rate of the subsector in the period 1984-89 will be 6.2 per cent, with above average growth rates projected for meat and milk products and, although from a lower base, foodstuffs.

13. The fulfillment of the projected expansion will require a modernization and restructuring of the meat, milk and olive oil processing branches, currently operating at low efficiency and with obsolete technology.

14. Meat processing activities are mainly undertaken in facilities owned by the municipalities or the parastatal EBK (Meat and Fish Industries Association). The meat production system suffers from structural weaknesses reducing its efficiency, in addition to problems of inadequately trained EBK staff, storage, by-product processing, and difficulties to meet the EC's sanitary standards. These weaknesses are due to the geographical separation of cattle breeding (east of Turkey), cattle raising (west of Turkey), cattle

Table 6. Demand for selected processed foods, 1978-89
(in billions of Turkish lira, at 1983 prices)

	1978	1983	1984 _a /	1989 _b /	Annual growth rate (per cent)	
					1978-83	1984-89
Meat products	242	412	443	658	11.2	8.2
Milk and milk products	243	309	322	500	5.0	9.2
Flour products	874	1,001	1,027	1,145	2.7	2.2
Processed fruits and vegetables	165	208	186	240	4.8	5.3
Sugar and cocoa products	105	124	127	141	3.3	2.2
Feedstuffs	48	75	86	144	9.6	11.0
Other	53	71	74	88	6.0	3.4
TOTAL	1,951	2,465	2,533	3,249	4.8	5.1

Source: Fifth Five-Year Development Plan, 1985-1989.

a/ Estimate.

b/ Plan target.

slaughtering/meat processing (east of Turkey) activities, and final consumption (major markets in the west). The Government is considering various ways to restructure the meat production system, and parallel efforts are being made to increase the feeding facilities in the eastern parts of Turkey.

15. The dairy industry is organized in a small, but modern private segment and a large parastatal, TSBK. The latter has antiquated facilities, suffers from serious quality problems and, for instance, cannot standardize its white cheese production. Both meat and dairy industries would well qualify as areas for technical co-operation, as they need to satisfy significantly rising domestic demand resulting from of a growing population, increasing incomes, and a high income elasticity of demand for these products.

16. Processed fruits and vegetables constitute the export-oriented segment of the food industry, and are expected to account for 38.3 per cent of the total exports of the food industry during the 5th Plan period. The projected export growth of 7.7 per cent annually will require a continuous expansion of agricultural production. The export success with processed fruits and

vegetables in recent years was accompanied by occasional domestic shortages and price increases for some products. However, it was pointed out that such fluctuations of output reflect to a large extent marketing problems which spilt over into production, causing some cyclical variations. Crucial for the achievement of the projected growth rates are improvements in marketing, production support activities such as packaging, and storage and transportation. In particular, canning production had emerged as a bottleneck in recent years. Technical co-operation in these areas could significantly support Turkey's export efforts and diversify its export basket.

b. Textile and clothing industries

17. Turkey has a comparative advantage in textiles due to its proximity to the EC, the Middle Eastern and African markets, its substantial domestic cotton resources and its wage cost advantage (wages amounting to only 20-40 per cent of EC levels). The industry developed into the country's largest and most important foreign exchange earner. Exports of textiles (yarn, cloth and fabrics) and clothing amounted to \$1,875 million in 1984, accounting for 26.3 per cent of Turkey's total exports and for 47.7 per cent of Turkey's manufactured goods exports in 1984. The Plan envisages that exports of ready-made garments will surpass textile exports by 1989. The implicit projected annual growth rate is 17 per cent for garment exports, and 9 per cent for textile exports, which is lower than the actual growth rates recorded in 1978-83 of 41 per cent per annum for garment exports and 21 per cent for textiles.

18. However, the projected growth rates will not easily be achieved, due to supply and demand constraints. Turkish garment exports are increasingly meeting quota restrictions in major export markets, and combined textile/clothing exports in the first eleven months of 1985 were 6 per cent below the level of the corresponding period in 1984. This implied a reduction of their share in industrial exports to less than 36 per cent. As to supply factors, the Turkish spinning industry does not fill its EC quotas, as spinning firms find it more profitable to integrate forward into weaving for the growing domestic market. This trend runs counter to recent developments in the textile sector in industrialized countries, where efforts have been (and still are being) made to better utilize economies of scale through an increase of specialization.

19. In the case of fabrics, Turkey is still only a marginal supplier with a share of less than 1 per cent of cotton fabric imports into the EC. The upgrading of product lines would permit rapid expansion. Currently domestic textile production uses predominantly domestic cotton resources (Table 7). An upgrading of production would require the increase of supplies of cotton/synthetic blended fabrics. In this regard, both private and public

Table 7. Production of textiles and clothing
(in billions of Turkish lira, at 1983 prices)

	1978	1983	1984 _{a/}	1989 _{b/}	Annual growth rate (per cent)	
					1978-83	1984-89
Cotton (spinning and weaving)	118	130	127	137	1.8	1.6
Cotton yarn	241	281	292	362	6.5	4.8
Cotton textiles	131	145	149	187	2.1	4.7
Woolen textiles	128	117	123	168	-1.8	6.4
Carpets	63	74	77	148	3.2	14.0
Others	<u>110</u>	<u>144</u>	<u>153</u>	<u>180</u>	<u>5.0</u>	<u>5.5</u>
Sub-total	601	691	721	932	2.0	5.5
Ready-made garments	<u>193</u>	<u>249</u>	<u>288</u>	<u>478</u>	<u>5.9</u>	<u>10.6</u>
TOTAL	794	940	1,009	1,410	3.4	6.9

Source: Fifth Five-Year Development Plan, 1985-1989.

a/ Estimate.

b/ Plan target.

sector enterprises intend to make further investments in machinery and equipment. A growing supply of such products would be also essential to meet the growing domestic demand for ready-to-wear garments. Combined, domestic demand for textiles and garments is projected to grow by 4.3 per cent annually during the Plan period, and total production to increase by nearly 7 per cent. An upgrading of the Turkish supply of yarns and fabrics would also support the upgrading of Turkish garment exports towards products with a higher (domestic) value-added component. Such upgrading would be essential in view of growing quota utilization rates for Turkey's exports of lower value-added items to industrialized countries, and in view of high quality requirements in Middle-Eastern markets.

20. Technical co-operation to support the upgrading of the product range would be particularly useful in the field of quality control, as well as the central collection, analysis and dissemination to manufacturers of information pertinent to demand requirements in and access to priority export markets.

c. Leather and leather products

21. Turkey's leather subsector is fairly well developed with an extensive import substitution industry (footwear) and a rapidly growing export trade in finished leather goods and garments. Leather garments industry is the most dynamic sub-group, whose demand is projected to grow by 17 per cent per annum and production to increase by 10.4 per cent. The Plan envisages that exports of the leather goods will increase by 10.6 per cent, while total production is expected to grow by 7.5 per cent annually, on the average.

22. The leather industry has not yet fully realized its potential, despite Turkey's ample resource base and significant comparative advantages due to the labour intensity of production processes. The poor quality of domestic raw materials, delivery problems, and weaknesses of management and technology have contributed to this result. The Tanning Research and Training Institute will be reorganized to meet the training, research and consultancy requirements of the industry, offering scope for technical co-operation. The same holds for the requirement to upgrade the production line (accessories) in order to compete successfully in international markets. Technical co-operation to promote the leather industry would correspond both to the policy of the Turkish Government to promote new exports and to stimulate the private sector.

d. Wood industry

23. The wood industry can draw upon Turkey's rich forest resources, giving the country a natural comparative advantage in this field. The industry is largely private, with public enterprises accounting for merely 12 per cent of total production. It consists of approximately 8,000 establishments, most of which are small-scale enterprises. The industry has a significant demand potential, both in internal and external markets. As to the former, it is estimated that only 40-45 per cent of Turkish families dispose of furniture. The full utilization of this potential will not be possible overnight, though,

as the low dissemination of furniture in Turkish households is the result of both economic factors (low disposable income) and cultural traditions. Yet, in the medium term it was estimated that the share of households disposing of furniture would be raised by 15-20 per cent, a sizeable source of demand for the domestic industry. As to export production, traditional market outlets are in the neighbouring countries, where Turkey has a comparative advantage in terms of transport costs, consumer tastes, and traditional design.

Table 8. Production of wood products
(in billions of Turkish lira, at 1983 prices)

	1978	1983	1984 _a /	1989 _b /	Annual growth rate (per cent)	
					1978-83	1985-89
Saw mill products	241	238	248	297	-0.2	3.7
Veneer products	27	37	40	56	6.7	6.9
Furniture	173	209	222	295	3.9	5.9
Others	<u>36</u>	<u>51</u>	<u>59</u>	<u>112</u>	7.2	13.9
TOTAL	477	535	569	760	2.4	6.0

Source: Fifth Five-Year Development Plan, 1985-1989.

a/ Estimate.

b/ Plan target.

24. The Government will place emphasis on a better use of existing facilities, rather than the establishment of new ones in the Plan period. Here, technical co-operation would be useful in the fields of quality improvement of raw materials and industrial training. In the latter, two areas appear to be of particular relevance. The first one is the current bottleneck in industrial management, related to the fact that owners and managers of the (relatively) large, export-oriented enterprises originate from small establishments. They have not yet fully acquired the management skills necessary to develop further enterprises of this size. The second area is an

obvious bottleneck of workers with advanced skills (e.g. foremen) at the factory level. A strengthening of corresponding training programmes would be an essential contribution to promote the wood industry which meets all preference criteria established by current government policies: support to the private sector, promotion of exports, strengthening of small-scale activities and utilization of domestic natural resources.

e. Pulp, paper, and printing industry

25. This sector is still of relatively minor importance, and its share in the gross industrial output in 1983 accounted for only 1.6 per cent. Yet, the industry is likely to grow rapidly, through projected direct export increases of its products (from 6 per cent in 1983 to 15 per cent in 1989) and indirect export increases resulting from the supportive role of the industry in Turkey's overall export drive. Correspondingly, the Plan attaches considerable importance to the modernization of the sector. Capacity utilization in the public sector is expected to increase from 75-80 per cent at present to about 88 per cent in 1989.

26. The World Bank is expected to finance the rehabilitation of SEKA's Aksu plant producing quality papers and paper board. The projected output and other plants under construction by the private sector will increase the existing supply bottleneck of long-fibre bleached celluloses. Therefore, a 150,000 tons-a-year capacity plant will be constructed for processing long-fibre bleached or semi-bleached celluloses, depending on the raw material conditions. A feasibility study might be a useful component of technical co-operation here.

f. Chemical industry

27. Turkey's chemical industry comprises a few large state enterprises and about 600 private firms; output ranked fifth in the manufacturing sector in 1983. Total chemical exports are projected to grow by nearly 16 per cent annually, and the industry's exports-production ratio is to be increased from 6.4 per cent in 1983 to 10.73 per cent in 1989. In recent years, the range of chemicals produced in Turkey has expanded substantially and includes, inter alia, boron, caustic soda, chlorine, industrial chemicals, sodium phosphates and chemicals used in rayon and viscose. Due to the size of reserves, the

quality of minerals and lower labour costs, Turkey has a comparative advantage in chromite, magnesite, marble, baryte, and especially in the caustic soda and the boron chemical industry. The Government thus hopes to attract foreign investment to these industries.

Table 9. Outputs of some selected chemical products
(in millions of Turkish lira, at 1983 prices)

	1978	1983	1984a/	1989b/	Annual growth rate (per cent)	
					1978-83	1984-89
Soda	4,607	11,660	11,384	20,628	20.5	12.6
Caustic soda	5,470	5,812	6,458	10,251	1.3	9.2
Borax decahydrate	1,168	1,773	2,334	3,890	8.8	10.8
Borax pentahydrate	283	97	297	5,438	-19.2	78.9
Sodium perborate	754	2,026	2,657	4,023	21.9	8.7
Boric acid	2,050	2,391	2,672	7,474	3.2	22.9
Synt. and oil paints	15,072	19,688	21,725	32,588	5.5	8.4
Emulsion paints	5,236	7,462	8,067	10,756	7.4	6.0
Soaps	24,674	25,231	30,167	37,416	3.5	4.4
Detergents	30,777	41,320	45,103	58,180	6.1	5.2
Pharmaceuticals	53,410	73,060	78,302	100,800	6.5	5.2
Agricultural pesticides	11,022	15,355	159	19,952	6.9	4.7
Others	83,211	124,727	137,560	210,984	8.4	8.9
TOTAL	237,734	334,542	362,640	522,380	7.1	7.6

Source: Fifth Five-Year Development Plan, 1985-1989.

a/ Estimate.

b/ Plan target.

28. To maintain competitiveness in international markets, the industry would need to give increasing weight to the mechanization and modernization of operations and to training of the labour force. In addition, infrastructural investments will be essential in the future, as mining and mineral-based chemical industries are dependent on the availability of a good transport network. As to technical co-operation, the Government expressed its commitment in the Fifth Plan to promote the project "Long-Term Developments in the Chemical Industry", elaborated under PETKEM-UNDP-UNIDO co-operation. The project expects in the first stage to identify the possibility of producing

some 200 kinds of chemicals through the collaboration of universities and other research bodies. Further co-operation might arise from Government endeavours to boost the export of boron alloys which will require the conduct of products diversification research in the Boron Research Centre to be set up separately. In the fertilizer industry, a "Study on Fertilizer Raw Material Resources" is underway and will be completed during the Plan period. Subsequent programmes to supply the identified raw materials through domestic production will provide further possibilities for technical co-operation. Finally, the Government tries to channel funds of returning migrant workers into small-scale investments. Supportive technical co-operation activities would appear to be a particularly valuable contribution to the fulfillment of Turkey's overall development objectives.

g. Basic metals industry

29. Based on adequate domestic iron-ore resources, Turkey's iron and steel industry is the fifth-largest industry accounting for 5.3 per cent of manufacturing production in 1983. It comprises both producers in the public sector and private firms, the latter consisting mainly of small mini-plants using arc-furnaces and manufacturing the so-called "long product" profiles, billets, wires etc. On the other hand, public sector enterprises are much larger, fully integrated companies producing long products, hot-rolled as well as cold-rolled flat steel. Through a successful process of structural change, segments of the industry managed to change from an inward- to an outward-looking orientation in recent years. Since 1978 the export production ratio has increased from 1.5 per cent to 17.1 per cent in 1983 and is projected to remain at this level throughout the Plan period. Total steel production reached 4.5 million tons in 1984, of which 1.3 million tons were exported. At the same time, 1.8 million tons of semi-finished steel had to be imported.

30. According to the Plan, total capacity in the industry will be increased from 328,000 tons in 1983 to 690,000 tons in 1989, implying an annual growth rate of 13 per cent. Special consideration is given to increased output of semi-finished products and the utilization of rolling mill capacities currently idle. Still, this process of capacity expansion will require efforts to increase the productivity of existing enterprises. In addition, measures to conserve energy will be of growing importance. In both fields, technical co-operation appears necessary.

31. As to non-ferrous metals, the plan aims at meeting domestic demand by local production to the largest extent possible. A primary target is to enable CIN-KUR to compete in international markets by solving the current operational (and financial) problems of the enterprise. Furthermore, the processing of sulphureous zinc ores at the existing zinc smelting plants will be studied. Also here, there appears scope for technical co-operation.

h. Engineering industries

32. The engineering sector is one of the most promising ones for Turkey's future industrial development. Currently the sector comprises the production of a wide range of intermediate and capital goods and consumer durables. It is medium capital-intensive, highly skill-intensive, and characterized by high backward and forward linkages. In its expansion, Turkey can draw upon its relatively skilled industrial labour force, the result both of Turkey's own training efforts and training received by Turkish migrant workers in industrialized European countries.

33. On a modest scale, Turkey is exporting agricultural tools and machines, metal-, wood- and plastic-processing machinery, buses, brake linings, motorcycles, bicycles, filters and valves, serving machines, ginning machines, hydraulic equipment, twist drills, conductors and cables and distribution devices for electrical machines. The export/production ratios ranged from 1.23 per cent for electronics to 21.81 per cent for agricultural machinery in 1983. Some subsectors are dominated by efficient subsidiaries of multinational companies, which also set and enforce quality standards for sub-contractors. Nevertheless, technical co-operation activities should in particular aim at strengthening Turkey's indigenous engineering capacity and technological potential, considering that sub-contracting at the national and international level will play an important role in the further development of the sector.

34. The automotive branch is one of the segments where multinational enterprises play a significant role. While there is scope to increase the share of sub-contracting by Turkish component manufacturers, the product range offered by the industry is out-dated, limiting the prospects to significantly expand exports. Although Turkey might develop a comparative advantage in the

field of international sub-contracting for automotive parts, caution should be paid against relying too heavily on such a strategy because of trends in the international automotive industry towards a growing reliance on suppliers which are closely located to the final assembly plant. Currently there is no comprehensive plan in existence outlining the long-term development strategy for the sector. Technical co-operation projects comprising study activities appear to be useful in this regard. In particular, they might be focused on an analysis of international trends in the auto industry, the changing role and locational pattern of international sub-contracting, and the policy experience of various countries in the rationalization of their automotive industry.

35. Turkey's foundry subsector has been developed in the past as an import-substituting activity and still has a domestic market orientation. Medium-sized private foundries account for 75 per cent of the grey-iron casting capacity and almost all of steel capacity. Need for further technical co-operation in this subsector is in the fields of quality improvements and standards.

36. Finally, the production of machine tools and machinery is a subsector with a high potential comparative advantage, and which would play a key role in Turkey's future industrialization process. The high export-potential of the subsector has been proven by the agricultural machinery manufactures, ranking third (after textiles/clothing and tobacco) as an export-oriented industry. Priority will be given in the future to the development of new products not currently produced, e.g. the manufacture of high-power turbine generators.

37. Common to problems of all sub-branches of the engineering industry are the lack of product support facilities such as quality control and testing laboratories. Technical co-operation appears to be useful in the establishment of such facilities to be shared by various enterprises.

IV. Cross-sectoral issues

a. Assistance to the privatization process in Turkey

38. Since it took office in November 1983, the Government of Prime Minister Turgut Oezal has made efforts to privatize Turkey's State Economic Enterprises which are regularly running deficits and are burdening the national budget. To

start with, the Government has sold share certificates of productive state infrastructure facilities, such as the Bosphorus Bridge and the Keban Hydroelectric Power Plant. Although this was labelled "privatization", these certificates provide only a share of the revenues from these facilities and have nothing in common with a real stock share. They are in fact just another way to raise money by the State to cover the budget deficit. It is, however, the intention of the Government to make some State Economic Enterprises (SEEs) subject to real privatization. Under consideration are SEEs such as Petkim Petrokimya A.S. (petrochemicals), SEKA (pulp and paper), and SUEMERBANK (textiles), which are all government counterparts for technical assistance projects executed by UNIDO.

39. The privatization efforts in Turkey, as everywhere, are facing serious obstacles. There is, first of all, the difficulty of selling a deficit enterprise. It might be possible to privatize only the profitable plants of SEEs which are attractive to private entrepreneurs. This implies that the national budget will not be relieved, but most probably face a bigger deficit. It has to be further taken into account that the partition of SEEs into saleable and non-saleable units means separating a structured entity. This would require additional investment even into efficient segments which would reduce the attractiveness for private entrepreneurs. There is further the danger that the high degree of monopolization in the Turkish industry will most likely cause an absorption of the SEEs to be privatized into a small number of holding companies dominating the private sector. This would adversely affect the efforts of the present Government to open Turkey's economy to more competition.

40. On this basis, technical assistance might be provided to the Government of Turkey through an assessment of the experience of other developed and developing countries with privatization programmes. A study to be undertaken by UNIDO in preparation of a seminar jointly by UNIDO and the Government of Turkey, bringing together experts from various countries exposed in privatization programmes could provide valuable recommendations on how to eliminate or diminish problems occurring during a privatization process. In addition technical assistance, through international consultants, might be required to overcome the various difficulties of privatization at the company level.

b. Small- and medium-scale industries (SMI) in the industrial sector of Turkey

(i) General information

41. The Turkish industry is characterized on the one hand by a high degree of monopolization and on the other by a large number of small- and medium-sized enterprises. Although recent figures on the development contribution of SMI are not available, it can be quite safely assumed that SMI account for some 50 per cent of manufacturing employment in the organized private sector. Including non-organized artisanal establishments (employing less than 10 workers), the corresponding share may well be in the 80 per cent range.

42. In descending order to magnitude, the highest employment and MVA shares of SMI enterprises in the organized private sector are to be found in the manufacture of furniture and wood products, engineering, chemicals, non-metallic products and paper products. Artisanal establishments, on the other hand, tend to be more heavily concentrated in garments and leather and hold a higher share in food processing which is the country's most important single manufacturing subsector. During the 1970s employment growth of SMI units, ranging between 8-9 per cent, was considerably stronger than that of large-scale units which remained below 6 per cent. (In view of the widespread underreporting of employment in SMI, the actual divergence in growth rates may even have been more pronounced.) Although there are no figures available on SMI contribution to industrial exports, it is noteworthy, however, that among the five industries having contributed 75 per cent to the 1978-83 increase in manufactured exports (ready-made clothing; foodstuff; textiles; iron and steel; petroleum products), at least the first two are characterized by a high share of SMI establishments.

(ii) Policy considerations

43. Among the most significant impacts of strong SMI on basic development policy objectives are to be mentioned:

- a strong contribution to absorbing a rapidly growing labour force by their using labour-intensive technologies;

- the mobilization of private savings and their productive channelling into domestic capital-formation;
- a positive influence on income distribution both functionally (wages/profits relation) and regionally;
- a contribution to decentralizing industry and accelerating rural development, e.g. through linking agricultural and industrial production; and
- the provision of a training ground for the creation of indigenous entrepreneurs.

44. In view of both the rapidly growing unemployment figures (over 3 million in 1984) and the high weight of agro-industries within Turkey's manufacturing sector, a convincing case can be presented for particularly strengthening SMI development. Furthermore, a diversified, efficient and viable SMI sector must be considered as highly supportive, if not indispensable, for an effective export promotion strategy based on domestically rather than externally provided inputs. Following a long-term neglect of SMI resulting actually in their being discriminated against as compared to larger enterprises, the Government has recently emphasized the important role of SMI are assumed to play in the country's further industrialization. A number of policy measures have been adopted, first of all, to reduce the degree of indirect discrimination against SMI that has resulted from distorted investment incentives. These measures include:

- Simplification of application procedures for investment of less than TL 600 million (simplified investment forms substituting for previously required detailed feasibility studies);
- Unification of the support premium rate (7 per cent) for all types of investment (previously higher for large-scale investment), and reduction of minimum export requirement from 25 to 5-20 per cent;
- Introduction of labour-related investment incentives (special tax exemption) for firms active in specified sectors and/or in least developed regions; the specified sectors comprise many in which SMI are typically dominant producers;
- Reduction of the required minimum equity percentage (40 per cent instead of the standard 50 per cent) for investments of less than TL<600 million; and
- Step-wise reduction of export rebate percentages which have also tended to discriminate against SMI by granting higher rebates to large volume exporters.

45. In addition to these indirect measures, the Government - within the framework of its export-oriented development strategy - has announced further direct policy measures aimed at enhancing the developmental impact of SMI. The Fifth Five-Year Development Plan (1985-89) specifically mentions:

- Strengthening the Small Industry Development Organization (SIDO) to develop appropriate strategies, policies and technical extension activities to assist SMI development;
- Enlarging the flow of investment and working capital loans;
- Expanding support for the building of industrial estates for artisanal firms and providing on-the-job and technical training in the industrial estates.

(iii) Focal points for technical assistance

46. With the Government's shift from promoting large-scale, capital-intensive, import-substituting industries to removing distortions in the system of incentives detrimental to SMI, and in view of the direct policy support vis-à-vis SMI, an economic framework has gradually been established in which further technical assistance could be efficiently implemented. Apart from the numerous economic reasons already mentioned, a further rather specific aspect lends additional support to the selection of SMI as priority area for technical assistance. In recent years there has been an increasing inflow of returning migrant workers, mostly from EC countries. A large share of these is seeking opportunities to profitably invest their considerable accumulated savings into existing small-scale enterprises or to set up new establishments. This trend testifies to the importance of building up information and advisory services responding to their needs.

47. In general it can be stated that industrial development in Turkey has progressed to the point where future growth of SMI depends on the increasing adoption of modern, efficient production processes, on specialization in production, improved product designs and higher product quality, modern management methods, and developing closer linkages with larger manufacturing firms as sub-contractors for the provision of parts, components and sub-assemblies, or with large-scale trading houses serving either the national or export markets. Subsectors which appear most promising in terms of potential growth of SMI comprise the foundry, engineering, food processing,

ready-made garments, footwear and leather products, furniture, plastics and construction materials. Complementarity with larger industry, involving manufacturing operations in which the processes are readily separable (e.g. producing specialized machine products, components and tools, etc.), will also play a major role in the future.

48. Concerning the relatively more advanced SMI segments and the specialized subcontracting relationships, the actual application and the potential use of modern technologies will be a major determinant for the future developments. Recent innovations such as numerically controlled machines, computer-aided design or micro-processor-based information and control devices are said to have made modern technology more potentially applicable to traditional producers and to facilitate small-scale decentralized operations so that leapfrogging from traditional to the most modern and sophisticated technologies could become a realistic option. This argument, however, points only to an existing potential for the adoption of micro-electronic technologies in small enterprises. The realization of this potential depends on a large number of economic and socio-cultural factors. The scattered empirical evidence available points rather to a positive correlation between firm size and the capacity and readiness to introduce these new technologies. In this context a study should analyse which segments of SMI in Turkey are strongly dependent on new technologies to increase their competitiveness, and which are the major factors constraining their adoption on a sufficient scale. Particular emphasis could be given to looking into the potential for co-operation to overcome capital barriers that single enterprises may often be facing.

49. In some branches of manufacturing like e.g. garments and leather, many Turkish SMI have basically achieved the ability to competitively produce for export markets. In these cases further emphasis could be put on marketing-related assistance measures including such elements as adequate finishing, design selection or advertising techniques. To this end it may be useful to explore the benefits to be reaped from organizing export consortia or associations of relatively small units which could enable them to formulate joint strategies, to pool their skills and resources and to share the high costs involved in international marketing.

50. Only insufficient information is available concerning the institutional infrastructure and its impact on SMI development. The only existing

institution with the specific mandate to assist small industries apparently is the Small Industry Development Organization (SIDO), established in 1970 with UNDP/UNIDO support. SIDO initially focussed its activities on a pilot project (Metal Working Demonstration Centre) in Gaziantep in eastern Turkey. This project - according to a recent World Bank report - failed to reach its objectives largely due to the use of too complex machinery beyond the actual requirements of most small enterprises. In the framework of the Government's new, more decentralized approach to SIDO's activities, a new UNDP/UNIDO three-year project was launched in 1983 (DP/TUR/80/010), aiming at establishing a demonstration centre cum common facilities for small foundries in Ankara. A project by the Government of the Federal Republic of Germany is being run parallel to assist the Halk Bankasi (People's Bank) in the establishment of two other small-industry development centres, in Kastamonu for wood processing, and in Burdur/Isparta for metal processing. In addition, DESIYAB, the State Industry and Workers' Investment Bank, again through assistance from the Government of the Federal Republic of Germany, is providing loans to returning Turkish migrant workers to set up enterprises. It would be desirable to join, or at least co-ordinate, these various activities to the benefit of the entire Turkish small- and medium-scale industry. Such co-operation between UNIDO, Turkey and the Federal Republic of Germany could lead to the embarkation on a joint training programme for entrepreneurs. Finally, it should be mentioned that IS/REG is preparing a study together with the Statistical, Economic and Social Research and Training Centre for Islamic Countries (SESRTCIC), Ankara, on SMI in Turkey. This study, to be finalized in July 1986, puts special emphasis on the role of subcontracting, on the impact of industrial estates and, above all, on the potential for SMI co-operation, both at the enterprise and at the policy-making level, between OIC Member States, and is expected to identify further scope for technical assistance activities.

APPENDIX I

Institutional framework for industry

State Planning Organization (under State Ministry of Deputy Premier Kaya Erdem), Ankara

The SPO has to approve every request from public and private enterprises and institutions to the UN Agencies. After approval, the requests have to be officially submitted to the Resident Representative of UNDP through the Ministry of Foreign Affairs.

Ministry of Industry and Commerce (Cahit Aral)

includes among others - Directorate General of Industry;
- Directorate General of Domestic Trade;
- Department of Price, Quality and Standards;
- Directorate General of Small Industrial Estates and Sites; and
- Directorate General of Industrial Research and Development.

Ministry of Finance and Customs (Ahmet Alptemocin)

includes a.o. - Directorate General of Monopolies (alcohol, tobacco, salt, tea) - commonly known as TEKEL.

Ministry of National Education, Youth and Sport (Vehbi Dinçerler)

includes a.o. - Directorate General of Vocational and Non-Formal Education;
- Directorate General of Higher Education and External Relations;
- Directorate General of Technical Training for Men and Women.

Ministry of Public Works and Settlement (Safa Giray)

- includes a.o.
- Directorate General of Building;
 - Directorate General of Planning and Settlement;
 - Directorate General of Railways, Ports, Airport Constructions;
 - Directorate General of Municipal Technical Services;
 - Directorate General of Construction Material and Earthquake Research;
 - Directorate General of Highways.

Ministry of Health and Welfare (Mehmet Aydin)

- includes a.o.
- Directorate General of Medicines and Pharmacy.

Ministry of Transport and Communications (Veysel Atasoy)

- includes a.o.
- Directorate General of Telecommunications;
 - Directorate General of Road Transport;
 - Directorate General of Ports and Maritime Organizations;
 - Directorate General of State Railways.

Ministry of Energy and Natural Resources (Sudi Turel)

- includes a.o.
- Department of Mining;
 - Department of Energy;
 - Turkish Electric Authority (TEK);
 - Mineral Research and Exploration Institute (MTA);
 - Directorate General of State Hydraulic Works (DSI).

Ministry of Agriculture, Forestry and Rural Affairs (Hüsnü Dogan)

- includes a.o.
- Directorate General of Food Affairs;
 - Directorate General of Co-operatives;
 - Department of Water Products.

APPENDIX II

Main State Economic Enterprises

<u>Azot Sanayii:</u>	Turkish Nitrogen Industry Corporation, Ankara (fertilizer producer).
<u>Türkiye Demir ve Celik:</u>	Turkish Iron and Steel Enterprises, Ankara, owns steelworks of Karabük and Iskenderun.
<u>Türkiye Kömür İşletmesi Kurumu (TKİ):</u>	Turkish Coal Enterprise Association, Ankara.
<u>SEKA:</u>	Turkish Celluloid and Paper Industries, Izmit.
<u>SUEMERBANK:</u>	(Textile industry) Ankara.
<u>Türkiye Cimento Sanayii:</u>	(Cement industry) Ankara.
<u>ETIBANK:</u>	(Mining) Ankara.
<u>TEK:</u>	(Turkish electric authority) Ankara.
<u>PETKİM:</u>	(Petrochemical industry) Ankara; runs refineries in Aliaga and Yarimca.
<u>TPAO:</u>	Turkish Petroleum Inc. (oil drilling, extraction).
<u>Denizcilik Bankası:</u>	Maritime Bank (Maritime lines, shipyard in Pendik near Istanbul), Headquarters Istanbul.
<u>TEKEL:</u>	State Monopolies for Tobacco, Salt, Tea, Istanbul.
<u>MKEK:</u>	(Machinery, chemicals) Ankara.

State institutes

Devlet Yatirim Bankasi (DYB):

State Investment Bank, Ankara.

DESIYAB:

State Industry and Workers' Investment Bank, Ankara.

TUEBITAK:

Turkish Scientific and Technical Research Institute, Ankara

State Institute of Statistics (DIE):

Ankara.

TSE:

Turkish Standard Institute (also runs a packaging material laboratory).

SIDO:

Small Industry Development

Organization, Ankara.

SEGEM:

Industrial Training and Development Centre.