JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

ARAB REPUBLIC OF EGYPT
THE GENERAL ORGANIZATION FOR INDUSTRIALIZATION

FINAL REPORT
FOR
THE FEASIBILITY STUDY
ON
INSTALLATION OF STEEL FLAT PRODUCTS COMPLEX
IN
THE ARAB REPUBLIC OF EGYPT
(PHASE-1)

November, 1996

UNICO INTERNATIONAL CORPORATION
KITAKYUSHU INTERNATIONAL TECHNO-COOPERATIVE ASSOCIATION(KITA)

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Preface

In response to a request from the Government of the Arab Republic of Egypt, the Government of Japan decided to conduct the Feasibility Study on Installation of Steel Flat Products Complex in the Arab Republic of Egypt (Phase 1) and the study was implemented by the Japan International Cooperation Agency (JICA).

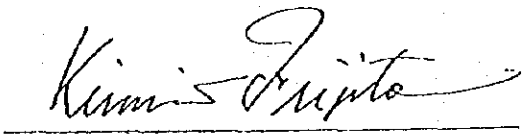
JICA sent a study team, led by Mr. Yoshiyasu Mikami of UNICO International Corp. and organized by Kitakyushu International Techno-Cooperative Association to the Arab Republic of Egypt 3 times from March 1995 to September 1996.

The team held discussion with the officials concerned of the Government of the Arab Republic of Egypt, and conducted related field surveys. After returning to Japan, the team conducted further studies and compiled the final results in this report.

I hope this report will contribute to the promotion of the plan and to the enhancement of friendly relations between our two countries.

I wish to express my sincere appreciation to the officials concerned of the Government of the Arab Republic of Egypt for their close cooperation throughout the study.

November 1996



Kimio Fujita
President
Japan International Cooperation Agency

November 1996

Mr. Kimio Fujita
President
Japan International Cooperation Agency
Tokyo, Japan

Dear Mr. Fujita

Letter of Transmission

We are pleased to submit to you the final report for the Feasibility Study on Installation of Steel Flat Products Complex in the Arab Republic of Egypt (Phase 1).

This study aims to analyze the demand and supply of steel flat products in Egypt and its neighboring countries as well as industrial policies in Egypt, to forecast a mid to long term demand of steel flat products, and to examine the possibility of constructing a new plant for manufacturing steel flat products in Egypt from the demand aspect. If sufficient demand for steel flat products is confirmed in this study, the Feasibility Study on Installation of Steel Flat Products Complex in the Arab Republic of Egypt (Phase 2) is to be implemented to make a feasibility study for constructing a new plant.

This final report comprises the following five chapters.

1. Review of the National Economy and Industry in Egypt
2. Market Analysis of Steel Flat Products
3. Study on the Conditions of Neighboring Countries
4. Demand Survey of Steel Flat Products
5. Evaluation of Need for a New Flat Product Plant Construction

The Chapter 1 reviews the recent economic conditions, development policies and industrial structure in Egypt, analyzing the status quo of its steel industry.

The Chapter 2 makes a comprehensive analysis on major user industries of steel flat products including construction, shipbuilding, home appliances, and automobiles. This chapter also evaluates on the existing production facilities for steel flat products.

The Chapter 3 examines the production facilities and markets for steel flat products in several countries around Egypt, from the viewpoint of promoting export of steel flat products from Egypt.

The Chapter 4 analyzes the current demand structure of steel flat products, forecasting their domestic demand in the year 2005, 2010, and 2015 under future economic growth anticipated. The accumulation method of demand from each user industry is adopted to forecast the demand in 2005, while a correlation between GNP and steel consumption per capita in developed countries is used to forecast the demand in 2010 and 2015.

The Chapter 5 concludes that demand for steel flat products will exceed the minimum economic scale in production in 2005 when a new plant is expected to start full scale operation. Accordingly, we judge that it will be possible to construct a new plant for manufacturing steel flat products from the demand aspect.

In this study, the transfer of our research technologies is requested by the Egyptian side. We are sure, through the implementation of the study, that we could transfer our methods for demand survey and demand projection to the General Organization for Industrialization (GOFI) of the Ministry of Industry and Mineral Wealth, the counterpart agency for this study.

We wish to take this opportunity to express our sincere gratitude to your Agency, the Ministry of Foreign Affairs, the Ministry of International Trade and Industry of Japan, and the Embassy of Japan in the Arab Republic of Egypt, for valuable advice and support extended to this study. We also wish to express our deep appreciation to GOFI and relevant authorities in the Arab Republic of Egypt for close cooperation and assistance extended to the study.

Sincerely yours,

Yoshiyasu Mikami
Team Leader,
Feasibility Study on Installation of Steel Flat Products Complex in the Arab Republic of Egypt

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ANNEXES

Chapter 1

REVIEW OF THE NATIONAL ECONOMY AND INDUSTRY IN EGYPT

1. REVIEW OF THE NATIONAL ECONOMY AND INDUSTRY IN EGYPT

1-1. Recent Economic Conditions

1-1-1. Summary

The recent economic conditions in Egypt are characterized below.

(1) The growth rate of GDP in terms of E£ is higher than that of in terms of US$ due to the changes in the exchange rate (0.7 E£/US$ in 1988 and 3.392 E£/US$ in 1994). (See Table 1-1-1)

(2) Examining the evolution of GDP growth, from 1983 to 1994, the average growth rate from 1983 to 1994 was 5.7% (59,553 million E£ in term of 1990 prices is increased to 108,517 million E£) and from 1988 to 1994 (stagnated period) was 3.8% (86,610 million E£ is increased to 108,517 E£). (See Table 1-1-1)

(3) The drop of growth rate after 1987 is caused by the decline of oil price. Twice in 1991 and 1993 there arose extremely low growth, caused by the Gulf War, decrease of tourism due to the terrorism and the country's transition from a central planning economy to a market economy, which brought damages on the economic growth. After 1994 the Egyptian economy shows recovery and stability.

(4) Sectoral overview shows that during 10 years (1985-94), there has been no remarkable changes except that the contribution to growth from oil and oil products decreased owing to the decline in the price of oil.

(5) The industrial sector's growths stagnated until 1994, at present shows improvement. (Share of Mining & Industry in GDP during 1988-91 was 17.3% to 17.9% and 1992-94 was 16.6% to 16.7%. Growth rate of Mining & Industry in 1995/96 was 5.6% which was higher than previous years.)

(6) The macroeconomic situation at present is summarized below (see Table 1-6-1).

1) Inflation has become moderate (8.4% in 1995) and the budget deficit is stable (overall deficit was 1.5% of GDP in 95/96).
2) Trade balance remains in deficit but the debt burden has been alleviated. Foreign reserves amount to US$18 billion at the end of 1995.
3) Privatization as well as foreign investment are being and will be intensively encouraged.

(7) Considering all the related factors, the projections for three scenarios, low, medium and high growth of GDP, were settled and confirmed in the M/M dated June 26, 1996 as follows.

1) Lowest case : GDP growth rate 4%
2) Medium case : GDP growth rate 5.5%
3) Highest case : GDP growth rate 1995-2005; 6.5%,
   2005-2020; 8.5%

Table 1-1-1 EVOLUTION OF GDP GROWTH IN EGYPT

(1) Gross Domestic Product in Egypt, GDP Deflator and Price Indexes

		1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
GDP in million of pounds													
Current Prices		25,895	31,547	37,240	42,563	51,500	61,600	76,800	96,100	111,200	139,100	157,300	175,000
At constant 1990 Prices		59,553	63,130	70,785	77,203	82,144	86,610	90,916	96,100	97,137	101,443	104,360	108,517
Growth Rate (%)*		6.4	6.0	12.1	9.1	6.4	5.4	5.0	5.7	1.1	(4.4)	2.9	4.0
GDP Deflator (1990=100)		43.5	50.0	52.6	55.1	62.7	71.1	84.5	100.0	114.5	137.1	150.7	161.3
Wholesale Prices	1990=100	32.1	35.3	40.0	46.9	53.3	67.3	85.6	100.0	117.9	132.2	143.5	
	Changes *	1.1584	1.0997	1.1331	1.1725	1.1365	1.2627	1.2719	1.1682	1.1790	1.1213	1.0855	
Consumer Prices	1990=100	30.9	36.1	40.5	50.2	60.0	70.6	85.6	100.0	119.7	136.1	152.5	165.0
	Changes *	1.1617	1.1683	1.1219	1.2395	1.1952	1.1767	1.2125	1.1682	1.1970	1.1370	1.1205	1.0820

Source: International Financial Statistics Yearbook 1995

Notes: ‖ Break in series; data prior to the sign not comparable.
* Calculated

(2) Gross Domestic Product in US$ (Total and Per Capita), and Population

		1984	1985	1986	1987	1988	1989	1990	1991	1992
At Current Prices	(mil. US$)	44,638	52,311	582,314	62,932	87,299	65,260	43,871	33,166	40,898
Per Capita	(US$)	984	1,125	1,223	1,288	1,745	1,274	837	618	746
At Constant 1990 Prices (A)										
	(mil. US$)	36,288	38,027	39,017	39,994	41,553	42,799	43,871	44,878	45,012
Growth Rate (%)		6.0	4.8	2.6	2.5	3.9	3.0	2.5	2.3	0.3
Population (B)	(million)	45.23	46.47	47.81	49.05	50.27	51.48	52.69	53.92	55.16
Per Capita (A/B)	(US$)	802	818	816	815	827	831	833	832	816

Sources: GDP at Current Prices, Per Capita GDP at Current Prices, GDP at Constant 1990 Prices (A):
Statistical Yearbook 1993 (UN)
Population: Monthly Bulletin of Statistics (UN)

(3) Exchange Rates

	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
Exchange Rates (Market Rate)												
pounds/US$	0.7000	0.7000	0.7000	0.7000	0.7000	0.7000	1.1000	2.0000	3.3300	3.3303	3.3704	3.3920

Source: International Financial Statistics Yearbook 1995

Note: Rate at the end of period

1-1-2. Evolution of GDP Growth

1) GDP growth

Regarding GDP growth (see Tables 1-1-1, 1-1-2), the following are notable.

- After the conclusion of the peace treaty at the end of 1978, the country started economic recovery initially by investing in the infrastructure.
- From 1985 to 1994, GDP at current prices grew by 4.7 times but at constant prices increased only 53%.
- Converted to US$, the growth rate at constant prices was 11% growth. This is due to the depreciation of the Egyptian pound against US$ by 1/4.84 in the same period (see Table 1-1-1).
- The growth rate in each period in E£ was;

  1982/83 - 86/87 6.8%
  1987/88 - 91/92 5.3%
  For 1992/93 - 96/97, the target is 5.1%.

- In the last period, the growth rate dropped in companies with previous period. In 1991 and in 1993, there were extremely low growth of 1.1% and 2.9% respectively which were mainly caused by the Gulf War and decrease of tourism due to the terrorism.
- Such unexpected international events will be omitted for the forecast of future growth of GDP. As a whole, it is observed that the country's economy developed mainly by the big installation of infrastructure and other positive conditions.

2) GDP by expenditure items and activities

- Evolution of national expenditure and gross fixed capital formation are also retraced in the Table 1-1-2.
- The Table 1-1-2 shows that the share of the gross domestic fixed capital formation has decreased gradually.

Table 1-1-2 GROSS DOMESTIC PRODUCTS BY EXPENDITURE ITEMS (NOMINAL PRICE)

		1985	1986	1988	1989	1990	1991	1992	1993	1994
	Gross domestic expenditure (Million LE)	37,240	51,500	61,600	76,800	96,100	111,200	139,100	157,300	175,000
Share (%)	Consumption Expenditure	82.1	84.1	84.7	83.0	82.7	84.0	83.0	83.3	84.9
GDP by expenditure items (%)	Private final consumption expenditure	66.9	69.8	70.7	70.4	71.4	72.8	72.6	73.1	74.6
	Goverment final consumption expenditure	15.2	14.3	14.0	12.6	11.3	11.2	10.4	10.2	10.3
	Gross fixed capital formation	28.3	27.4	32.7	30.1	27.6	25.0	20.6	16.2	16.6
	Inventory accumulation	0.3	-1.3	0.5	1.2	1.9	-1.1	-0.9	-	-
	Export of goods and services	17.7	12.6	17.4	18.0	20.2	27.9	29.0	27.7	22.9
	(Exemption) Import of goods and services	-28.6	-22.7	-35.2	-32.3	-32.7	-35.8	-31.8	-30.6	-28.1
	Error & Omission	0	0	0	0	0	0	0	3.4	3.8
	Total	100	100	100	100	100	100	100	100	100

Source: IMF, IFS

1-1-3. Sectoral Shares

- Evolution of sectoral share and their growth shows that, there has been no remarkable change during the ten years from 1985 to 1994 (see Tables 1-1-3 and 1-1-4). Oil and oil products (or petroleum) have declined in share.
- Mining and Industry has experienced a slight decline in its share and growth rate in the past 4 years. The concerned Egyptian authorities stated that in the coming 5 years, the industrial sector would increase considerably its share to GDP.

Table 1-1-3 SHARE OF SECTOR IN GDP

(Unit: %)

	1985	1988	1989	1990	1991	1992	1993	1994
Agriculture	16.6	20.7	20.1	19.7	19.3	16.6	16.5	16.5
Mining & industry	14.6	17.3	17.3	17.6	17.9	16.6	16.7	16.7
Oil & oil products	15.9	4.3	3.9	3.6	3.5	9.9	9.8	9.9
Electricity	0.7	1.3	1.3	1.4	1.4	1.7	1.7	1.7
Construction	4.5	4.9	5.0	5.0	5.0	5.1	5.1	5.1
Transport, communication	8.7	9.2	9.4	9.9	9.9	6.6	6.7	6.7
Commerce, banking	19.8	23.3	23.4	23.2	23.0	20.0	20.1	20.2
Tourism	1.1	1.1	1.3	1.5	1.5	1.8	1.9	1.5
Administration	17.8	17.9	18.0	18.1	18.2	16.8	17.1	17.2
Public services								
Total with others	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Ministry of Planning

Table 1-1-4 GROWTH RATE OF EACH SECTOR

(Unit: % p.a.)

	1985	1988	1989	1990	1991	1992	1993	1994	95/96 E
Agriculture	3.2	3.4	3.3	3.3	3.1	3.4	2.5	3.4	3.1
Mining & Industry	9.9	7.2	7.3	3.6	9.5	6.2	2.9	4.1	5.6
Oil & oil products	10.6	6.4	-2.8	2.7	4.1	4.3	1.6	3.7	2.5
Electricity	4.2	7.9	9.5	3.1	5.2	6.0	3.4	4.1	4.6
Construction	3.8	7.8	5.3	5.5	5.5	5.7	1.0	4.6	4.1
Transport, communication	2.3	6.4	9.3	9.8	4.1	7.2	4.0	3.8	
Commerce, banking	9.0	5.2	4.6	4.7	3.9	4.6	2.9	4.1	4.9
Tourism	7.8	33.6	20.8	7.8	-26.1	39.4	4.3	-18.6	12.4
Administration	9.1	6.1	6.4	6.4	5.5	5.6	4.0	4.4	
Public services									
Total with others	7.4	5.9	5.5	5.7	4.0	5.5	2.5	3.6	4.9

Source: Ministry of Planning

Note: E; estimated

1-1-4. Economic Reform and Macroeconomic Condition at Present

The pivots of the economic reform policies are shown in the Table 1-1-5 and the major targets of macroeconomic policies are summarized as follows:

(1) Economic liberalization in regard to price mechanisms, trade and the international financial market.
(2) Privatization and industrialization.
(3) Encouragement of exports and improvement of the balance of payment.

The adoption of this reform program has resulted in the following:

(1) As stated in the overview in the previous section, inflation caused to fall the exchange rate of the Egyptian pound, and productive activities to stagnate, but growth of imports has become stable. The Central Bank of Egypt stated that the inflation rate declined to 8% in 1995 and stabilized owing to the stable exchange rate (see Table 1-1-6).

(2) The national budget deficit has been reduced to reach 1.5% against GDP in 1995/96. Main causes of this improvement are found in the cut-off of subsidies for public enterprises under the Law 203 and an increase of income mainly from natural resources such as natural gas as seen in Table 1-1-7.

(3) The exchange rate for the past four years stabilized without any government interference.

(4) Foreign reserves reached US$18 billion, at the end of 1995 which is over than the annual import amount.

(5) The average income per capita rose to US$911 in 1995, and are expected to reach US$1,030 by the end of 1996. This is a substantial improvement compared with 1982 when the per capita income was only US$610.

Table 1-1-5 PIVOTS OF ECONOMIC REFORM POLICY

Liberalizing Prices & Trade	Controlling Overall Cash Demand	Promoting Private Sector	Liberalizing & Developing Public Business Sector	Encountering Social Impacts of Reform & Privatization
- Liberalizing interest rate - Liberalizing & unifying Egyptian pound - Liberalizing products - Liberalizing trade	- Expanding open-market operations - Amending provision - Amending liquidity - Organizing credit checks - Law of numbered accounts - Floating treasury bills - Sales tax	- Private sector - Arab & foreign investors	- Restructuring public sector companies - Separating ownership from administration - Privatization - Developing capital market - Activating role of banks	- Establishing the social develop-ment fund

Source: Year Book 1994

Table 1-1-6 INDICATION OF PRICE AND MONETARY CONDITION

	1985	1989	1990	1991	1992	1993	1994	1995
Consumer price index, increase % (N.B)	12.1	21.2	16.8	19.8	13.7	12.0	8.2	8.4 *
Money supply 2 increase ratio %	24.2	17.5	28.7	19.3	19.4	13.2	11.2	9.9
Interest rate %	13.0	14.0	14.0	20.0	18.4	16.5	14.0	14.0
Exchange rate (EL/US$)	0.70	1.10	2.00	3.33	3.34	3.37	3.39	3.39

N.B. CAPMAS published different figure in June 1995
*: urban area
Source: Central Bank of Egypt, IMF, IFS Annual Report 94/95 in 1996

Table 1-1-7 EVOLUTION OF STATE BUDGET

(Unit: million EL)

	89/90	90/91	91/92	92/93	93/94	94/95	95/96*
Total revenues	21,876	28,559	41,406	46,703	52,567	55,508	66,196
Total expenditures	36,393	45,510	47,563	52,223	56,264	58,197	71,492
Over all deficit	14,517	16,951	6,157	5,220	3,697	2,689	5,297
Ratio against GDP (%)	-	17.2	5.2	4.2	2.5	1.6	2→1.5 (revised)

N.B. fiscal year (from July to June)
*: budget amount
Source: Central Bank of Egypt, Annual Report 94/95 in 1996

1-1-5. Trade, Balance of Payment, External Debt, Foreign Reserves, Exchange Rate

The merchandise trade balance has shown a marked deficit for many years, but has been offset by the services revenue (tourism and Suez canal) and unrequited transfers, earnings remitted by overseas workers (see Table 1-1-8).

The total amount of the debt outstanding is shown in Table 1-1-9.

Even after the reduction of debt outstanding in 1991, its ratio to GNP was 79% in 1994, but DSR has decreased to 15%, comparatively low among developing countries. The foreign reserves increased to US$ 18 billion at the end of 1995 (see Table 1-1-10).

IMF had recommended a devaluation of the Egypt pound to stimulate exports but from 1995 withdrew its proposal. In 1996 the IMF and Egypt agreed to maintain the actual exchange rate.

Table 1-1-9 FOREIGN DEBT OUTSTANDING

(Unit: US$ mil.)

	1980	1988	1989	1990	1991	1992	1993	1994
Medium & long term	14,693	37,099	35,636	27,976	29,799	28,854	28,904	30,913
Public	14,428	35,968	34,555	26,976	28,949	28,254	28,404	30,538
Private	265	1,131	1,081	1,000	850	600	500	375
Short term	4,027	6,871	7,884	4,450	3,099	2,516	2,003	2,252
IMF	411	190	161	125	127	202	202	193
Total	19,131	44,160	43,681	32,551	33,025	31,572	31,109	33,358

Source: World Bank "World Debt Tables"

Table 1-1-8 BALANCE OF PAYMENTS

(Unit: US$ mil.)

	1980	1985	1989	1990	1991	1992	1993
Trade balance	▲2,960	▲5,215	▲5,933	▲6,699	▲5,975	▲5,501	▲6,680
Export	3,854	3,896	2,907	3,604	3,856	3,400	3,243
Import	▲6,814	▲9,050	▲8,841	▲10,303	▲9,831	▲8,901	▲9,923
Services	▲269	▲957	452	1,481	2,444	1,237	1,973
Receive	2,662	3,442	5,123	7,148	7,951	8,901	9,307
Pay	▲2,931	▲4,401	▲4,672	▲5,667	▲5,507	▲7,664	▲7,334
Unrequited transfer balance	2,791	4,007	4,173	5,403	5,434	7,076	7,006
Private	2,793	3,212	3,293	4,284	4,053	6,104	5,664
Public	▲2	791	880	1,119	1,380	972	1,342
Current balance	▲438	▲2,166	▲1,309	185	1,903	2,812	2,299
(GDP %)	(▲2.0)	(▲6.7)	(▲1.7)	(0.2)	(1.7)	(2.0)	(1.5)
Capital balance	1,012	1,381	361	▲11,039	▲4,706	▲168	▲762
Direct investment	541	1,175	1,228	722	191	455	493
Credit	5	20	-	15	21	6	4
Others	405	186	▲867	▲11,776	▲4,918	▲629	▲1,259
Errors & Omissions	35	585	414	630	730	716	▲1,519
Overall balance	610	▲200	▲533	▲10,224	▲2,037	3,360	18
(GDP %)	(▲2.0)	(▲6.7)	(▲1.7)	(2.0)	(1.7)	(2.0)	(1.5)

Source: IMF IFS

Table 1-1-10 FOREIGN RESERVES

(Unit: US$ mil.)

	1988	1989	1990	1991	1992	1993	1994
Dollars	1,263	1,520	2,684	5,325	10,810	12,904	13,481
Gold	794	679	641	656	616	616	694
Total	2,057	2,199	3,325	5,981	11,426	13,520	14,175

Source: IMF IFS

1-1-6. Privatization

Privatization is one of the most important targets of macroeconomic policies recommended by the IMF advisory group and adopted by the government. In fact, the government had accepted it as theory starting from the period of open door policy even before the peace treaty with Israel in 1978. The status of privatization as well as a strategy for private sector development were presented in detail by a World Bank report in October 1994 (some statistic data of which are attached in Annex 1-1).

In the past, private sector investment response has been very slow compared with expectations. In 1991, the value of production of public enterprises occupied 70% of total production. Private enterprises are found mainly in the field of light industries, such as textiles, wooden household goods, leather and food. In the third development plan, the government emphasized the importance of investment in the private sector. The private sector is expected to account for 58% of the total investment of E£154 billion in the period, which almost equivalent to the investment amounts in the precious 10 years.

The majority of public enterprises have suffered from inefficiency of management, and have been obliged to maintain excessive employees, which caused low earnings or, often, losses. The government adopted the measures of reducing restrictions on prices, of autonomous accounting at public enterprises, and of transfer of management responsibility.

It is stated by the government that eventually all the industries will be managed in principle by the private sector. Several recent items are presented here in order to show the situation of investment at present. Total investment amounts and the present situation are shown in Table 1-1-11, classified by location, whether inland or free zones. The latter occupies less than 10% and it is desirable to increase.

The Table 1-1-12 shows the sectoral shares, and the industry occupies half of the total investment in inland projects. Among the subsectors, chemicals occupies the highest rank by number and amount with 22.7%, while the metallurgical industry has 11.3% of the total, as shown in Table 1-1-13.

The annual growth and rates are shown in Tables 1-1-14 and 1-1-15. The growth rate by number in Inland is high while those in Free Zones slow down in 1995. About 17% of total private investments and 25% of investments in Free Zones are considered as foreign investment which is examined in the next paragraph.

Table 1-1-11 TOTAL INVESTMENT PROJECT AS OF 30/6/1995

Item	Value in Million L.E. Approved			Ratio in Operation		Ratio in Under Implem.	
	No.	Equity	Invt. costs	No. (%)	Invt. costs (%)	No. (%)	Invt. costs (%)
Inland Investment	2,639 (100%)	28,298	50,548 (100%)	44.5	56.0	55.5	44.0
Free Zone Investment	483 (100%)	2,365	5,130 (100%)	62.7	70.0	37.3	30.0
Total	3,123 (100%)	30,663	55,679 (100%)	47.3	60.6	52.7	39.4

Source: General Authority for Investment

Table 1-1-12 TOTAL OF INLAND PROJECTS AS OF 30/6/1995

SECTOR	Value in Million L.E. Approved			Ratio in Operation		Ratio in Under Implem.	
	No.	Equity	Invt. costs	No. (%)	Invt. costs (%)	No. (%)	Invt. costs (%)
Industry	1,490	11,723	24,603	35.5	61.1	64.5	38.9
Agriculture	158	938	1,908	47.5	62.0	52.5	38.0
Construction	180	902	2,000	79.4	70.1	20.6	29.9
Tourism	294	5714	11605	37.1	34.3	62.9	65.7
Finance	346	7895	7940	60.4	74.3	39.6	25.7
Service	171	1126	2492	63.7	66.2	36.3	33.8
Total	2,639	28,298	50,548	44.5	59.9	55.5	40.1

Source: General Authority for Investment

Table 1-1-13 TOTAL INDUSTRIAL PROJECTS AS OF 30/6/1995

ACTIVITY	Value in Million L.E. Approved			Ratio in Operation		Ratio in Under Implem.	
	No.	Equity	Invt. costs	No. (%)	Invt. costs (%)	No. (%)	Invt. costs (%)
Textiles	201	1,587	3,161	42.8	86.1	57.2	13.9
Food & Beverages	269	1,854	4,273	28.3	44.5	71.7	55.5
Chemicals	377	2,724	5,596	32.1	58.8	67.9	41.2
Wood production	55	153	234	27.3	75.2	72.7	24.8
Engineering	235	1,624	3,599	29.3	47.5	70.7	52.5
Building Materials	145	1,467	2,996	46.9	47.4	53.1	52.6
Metallurgical	119	1375	2781	39.5	63.1	60.5	36.9
Pharmaceuticals	83	858	1745	50.6	64.2	49.4	35.8
Mining	6	81	218	83.3	99.1	16.7	0.9
Total	1,490	11,723	24,603	35.5	58.2	64.5	41.8

Source: General Authority for Investment

Table 1-1-14 INVESTMENT ANNUAL GROWTH (AMOUNT)

Value in Million L.E.

YEARS	TOTAL			INLAND			FREE ZONES		
	No.	Equity	Invt. costs	No.	Equity	Invt. costs	No.	Equity	Invt. costs
30 / 6 / 1992	1,626	19,378	33,110	1,340	17,748	30,585	286	1,630	2,525
30 / 6 / 1993	1,834	21,716	36,704	1,490	19,947	33,922	344	1,769	2,776
30 / 6 / 1994	2,231	25,265	44,975	1,819	23,228	40,495	412	2,037	4,480
30 / 6 / 1995	3,122	30,663	55,678	2,639	28,298	50,548	483	2,365	5,130

Source: General Authority for Investment

Table 1-1-15 INVESTMENT ANNUAL GROWTH (RATES)

Value in %

YEARS	TOTAL			INLAND			FREE ZONES		
	No.	Equity	Invt. costs	No.	Equity	Invt. costs	No.	Equity	Invt. costs
1992 / 1993	13	12	11	11	12	11	20	9	10
1993 / 1994	22	16	23	22	16	19	20	15	61
1994 / 1995	40	21	24	45	22	25	17	16	15

Source: General Authority for Investment

1-1-7. Encouragement of Foreign Investment

In recent years, particularly after 1990, Egypt has sought to attract foreign investments by emphasizing several advantages and incentive measures, namely, cheap land, cheap labor, certain natural resources, advantageous location for export business, and tax holidays, incentive prices of raw materials, etc. However, at least until recently, the number of cases and value of investment from abroad were limited to 17% except Arabs in total and the investments in Free Zone are still rather small (see Table 1-1-16).

Investments in the Free Zone area have thus far been concentrated in Alexandria, to the extent of more than 60% of total investment and the ratio in operation is also higher than in other regions (see Table 1-1-17).

Among western countries (OECD members), the U.S., United Kingdom and Switzerland held the highest rank, followed by other Western European countries (see Table 1-1-18).

The causes of this slow performance might be found on both sides, host and investor, and further improvements by in-depth analysis and changes are needed.

Table 1-1-16 SHARES IN EQUITY INVESTMENT BY NATIONALITY AS OF 30/6/1995

Value in Million L.E.

ITEM	EGYPTIAN		ARABS		FOREIGN		TOTAL	
	Particip.	%	Particip.	%	Particip.	%	Particip.	%
Inland Projects	19,293	68	4,165	15	4,840	17	28,298	100
Free Zone Projects	1,139	48	691	29	535	23	2,365	100
Total	20,432	67	4,856	16	5,375	17	30,663	100

Source: General Authority for Investment

Table 1-1-17 TOTAL FREE ZONE PROJECTS AS OF 30/6/1995

Free Zones	Value in Million L.E. Approved			Ratio in Operation		Ratio in Under Implem.	
	No.	Equity	Invt. costs	No. (%)	Invt. costs (%)	No. (%)	Invt. costs (%)
Cairo	94	848	1,036	57.4	68.6	42.6	31.4
Alexandria	232	918	3,111	62.1	85.1	37.9	14.9
Port Said	105	395	686	70.5	53.2	29.5	46.8
Suez	46	186	256	67.4	41.4	32.6	58.6
Ismailia	6	18	41	0	0	100.0	100.0
Total	483	2,365	5,130	62.7	69.8	37.3	30.2

Source: General Authority for Investment

Table 1-1-18 10 FOREIGN EQUITY PARTICIPATION IN APPROVED PROJECTS (AS OF 30/6/1995)

Value in million L.E.

	Country	No.	Equity	Foreign Particip.	%	Invest. Costs
1 -	U.S.A.	170	3,317	1,045	19	5,634
2 -	Switzerland	79	1,226	505	9	3,533
3 -	Britain	126	1,802	666	12	2,854
4 -	Italy	55	959	194	4	2,157
(5) -	Panama	35	1,044	704	13	2,070
6 -	France	67	1,226	266	5	1,973
7 -	Ireland	5	329	125	2	1,847
8 -	Germany	88	811	176	3	1,582
9 -	Japan	17	883	131	2	1,580
10 -	Luxembourg	41	1,177	183	3	1,538
11 -	Netherlands	33	575	194	4	923
12 -	36 countries	179	1,790	757	14	3,053
38 -	Others	30	3,163	429	8	6,439
	Total	925	18,302	5,375	100	35,183

N.B. (5) Panama. It is known that through Panama, there are many national's capital.

Source: Made by the consultant based on data of Investment Authority.

1-1-8. Forecast of GDP Growth (applied for projection of steel industry)

1) Major Elements for the Forecast

By analyzing the evolution of GDP of the country, its sectoral shares and particularly industrial growth, and the present macroeconomic conditions, the Study Team prepared three forecasts of GDP growth, and GOFI has agreed to use them (Minute of Meeting dated June 26, 1996).

The major macroeconomic elements which are taken into consideration for predicting growth over the medium and long term are the stabilization of prices, reductions of the budget deficit and improvement of the balance of payments.

The national budget in future will depend to a large extent on the implementation of privatization, and the balance of payments is influenced by debt repayment. Most of all, the government considers the industrial development as the key factor for the economic policy of the country.

2) Projections

For reference we present a few examples for projections of Egyptian economic growth by other organizations (see Table 1-1-19). EIU (Economist Intelligence Unit) is one of the most reliable European economic institutes whose research is well respected. However, the period when they made their forecast (in 1993) is a little bit earlier than the actual favorable conditions. Their forecast was more prudent, or more pessimistic, than others. The second is from a recent study in Egypt. The third is by a banker's group.

The IBRD's figures, which are generally respected as the most reliable ones that could be obtained, will be available after they complete an economic review at the end of 1996. UNDP and USAID have not published forecasts recently.

3) Forecasts

A. Lowest (prudent, pessimistic) case : GDP growth rate 4%

The first case is a prudent, severe or pessimistic view due to the following reasons.

a) EIU's forecast tried a little earlier, must still have many reasons for taking the pessimistic view.
b) In the international balance of payment, trade balance could not be improved as expected and debt burden will continue the deep influence.
c) In the industrial sector, privatization still faces barriers for industrialization, namely unemployment problem.

B. Medium (moderate, normal) case : GDP growth 5.5%

The second case is medium figures.

a) Political stability in the surrounding countries will continue and the Egyptian position in the international politics will bring about the economic benefits.
b) In recent years, the growth trend recovers and the government estimates 5.4% in 1995/96. The average growth rate in the past from 1981 to 1990 marked 6.6%.
c) The barriers for economic growth has been removed. Therefore, even if there arises a recession in few years, the average growth will be stabilized.

C. Highest (optimistic, aggressive) case : GDP growth 1995-2005; 6.5%
2005-2020; 8.5%

a) Industrial growth will be high, by overwhelming the barriers for privatization with abundant foreign investment and improvement of industrial and social structure.
b) When the Egyptian economy shows an adequate absorbing capacity for foreign assistance as well as investment, sufficient financial resources will be introduced from Arabic countries and other countries.
c) After a certain period of "take off" explained by the theory of Rostow which often accompanies high growth, the country's economy will show automatically the constant high growth similar to the examples of some Asian countries, Thailand and Malaysia.

Table 1-1-19 EXAMPLES OF FORECASTS OF GDP GROWTH RATE

Example A

	1995	1996	1997	1998	1999	2000
Real GDP growth (%)	2.2	3.3	3.4	3.4	3.9	4.2
GDP ($ bn)	57.5	62.4	66.9	71.5	76.5	80.3
GDP per head ($)	976	1,037	1,090	1,143	1,197	1,230
Consumer price inflation (%)	9.0	7.5	7.0	6.6	6.0	6.0
Exchange rate EL:$	3.39	3.47	3.58	3.69	3.80	4.00

Source: EIU

Example B

	1990	2000	2010	2020
Population (millions)	55	68.38	81.84	92
GDP (billions LE)	93.3	151.9	247.5	391.8
GDP (billions US$)	27.7	45.6	74.3	117.6
GDP/Capita (LE)	1,680	2,222.58	3,037.11	4,259.35
Ratio of GDP in LE		1.69	1.63	1.5
Estimated average growth rate (% p.a.)		1.054	1.05	1.041

Source: UNEP Greenhouse Gas Abatement Costing Studies in 1995, Egypt

Example C

	Estimated	Projection				
	1995	1996	1997	1998	1999	2000
Nominal GDP (million LE)	194,250	214,141	236,069	263,456	295,959	331,837
Constant growth rate (%)	4.5	4.0	4.0	4.3	4.5	4.3
Ratio of increase of GDP deflator	6.2	6.0	6.0	7.0	7.5	7.5

Source: Private Banking Association

1-2. Development Policy

1-2-1. Summary

In this section, the following observations will be presented so as to foreseen the orientation of future development plan and policy.

(1) In development planning during the 1980s and even in the Third Plan, preference for investment was given to the infrastructure and to some extent agriculture.

(2) Fluctuation of growth rates sometimes was caused by unexpected international factors but over the medium term the yearly average growth rate target was achieved as a whole.

(3) The current Third Development Plan, to end in 1996/1997, has the following characteristics.

1) The development investment in the private sector has been comparatively emphasized.
2) Total investment amount was increased by 34% and social services sector increased in share.
3) Industry has been remained in the same position as in the previous plan, but the business sector's share is remarkably high.

(4) The Fourth Development Plan has not yet been authorized nor published. Tentatively, it is to have an ambitious of increase in development investment by 57% compared to the Third Plan and the amount is to almost equal (242 billion E£) to total of Second and Third Plan (115+154 billion E£).

(5) In the fourth development plan, it is tentatively expected that the share of investment in the Commodity Sector will be increased by 5.6%, while that in Industry will rise by 6.6%. On the other hand, the Social Services sector share will be decreased by 5.1%.

1-2-2. Evolution of Development Plan

Broad features of all of the development plan are shown in the Table 1-2-1.

During the six development plans, the Egyptian economy had suffered from international political events namely Middle East War (1966-74).

In 1974, the government adopted a policy favoring a market oriented economy and after the peace treaty was signed at the end of 1978, foreign assistance and investments became activated while oil revenue also contributed to the country's high economic growth of 9.6% from 1975-83. Industry was encouraged together with the "Open Door Policy" but was not realized at this stage.

Secondly, looking at the next three development plans (see Tables 1-2-2, 1-2-3, 1-2-4), the growth rates gradually declined. During the period of the first development plan, the decline of oil price, debt accumulation, and national budget deficit caused low growth.

During the second development plan period, the total investment achieved, 115 billion E£, was much higher than the targeted 45 billion E£, but inflation, the budget deficit, deficit in the balance of payments, and Gulf War caused serious effects on the economic growth.

Table 1-2-1 MAIN ECONOMIC DEVELOPMENT PLAN

	Investment target (billion LE)	Growth rate target (%)	Development strategies	Remarks
The first 5-year plan (fiscal 66 - 65)	15.8	7.0	- Breaking with monoculture of cotton flowers and industrialization - Attaching importance on industry, electricity, transportation and communication and agriculture	Actual investment was 96% of the target
The second 7-year plan (fiscal 66 - 72)	41.5	-	- Attaching importance on industry, electricity, transportation and communication and agriculture	Failed because the outlook for the procurement of money was vague
The third 3-year plan (fiscal 68 - 70)	12.9	-	- Completion of unfinished projects of the first plan	Unfinished because of third Middle East War
The fourth 10-year plan (fiscal 73 - 82)	84.0	7.1 - 7.2	- Attaching importance on industry, electricity, transportation and communication	Impossible to implement because of the fourth Middle East War
The fifth 18-months plan (Jul.74 - Dec.75)	16.3	9.0	- Reconstruction after the Middle East War - Restoration of the Suez Canal	
The sixth 5-year plan (fiscal 78 - 82)			- Attaching importance on industry, electricity, transporation and communication - Promotion of export-oriented companies	High growth of 9.6% from 1975 to 1983
The first 5-year plan for socio-economic development (fiscal 83 - 87)	34.9	8.1	- Improvement of production capacity in every sector of economy - Fair distribution of income	Actual growth rate is 6.8% Oil has been stagnant after 1986
The second 5-year plan for socio-economic development (fiscal 88 - 92)	45.8	5.8	- Breaking with economic dependence on service sector - Balanced expansion of every economic sector	Actual growth rate (estimated) is 3.9% Gulf War Debt accumulation
The third 5-year plan for socio-economic development (fiscal 93 - 97)	154.0	5.1	Modernization and maximization of production capacity in production and service sectors Establishment of market mechanism and increase of private sector's role	Harmonization with IMF group Stabilization of exchange rate

Source: Economic and social status of Egypt, Egypt's third five year plan for Socio-economic development

Table 1-2-2 TARGET & RESULT OF 1ST DEVELOPMENT PLAN (82/83-86/87)

(Units: L.E. mil, %)

	Targeted Investment	Result	GDP targeted growth rate	Result
Commodity Sector	17,539	28,768	8.5	6.2
Agriculture	1,678	3,125	3.7	3.5
Mining & Industry	8,617	13,375	10.3	9.1
Petroleum	1,337	7,152	12.2	7.7
Electricity	2,904	4,007	10.7	13.5
Construction	942	1,109	8.3	3.3
Productive Services Sector	7,147	14,555	7.2	7.1
Social Services Sector	10,165	12,355	8.1	8.0
Total	34,851	55,678	8.1	6.8

Source: Ministry of Planning

Table 1-2-3 TARGET & RESULT OF 2ND DEVELOPMENT PLAN (87/88-91/92)

(Units: L.E. mil, %)

	Targeted Investment	Result	GDP targeted growth rate	Result
Commodity Sector	24,185	62,136	5.8	4.9
Agriculture	3,502	8,907	4.1	3.3
Mining & Industry	12,191	25,742	8.4	6.8
Petroleum	1,114	12,743	2.3	2.9
Electricity	4,761	12,777	7.1	6.3
Construction	1,181	1,968	5.9	6.0
Productive Services Sector	7,228	25,306	5.6	5.6
Social Services Sector	14,405	27,483	6.2	6.0
Total	45,818	114,925	5.8	5.3

Source: Ministry of Planning

Table 1-2-4 TARGET & RESULT OF 3RD DEVELOPMENT PLAN (92/93-96/97)

(Units: L.E. mil, %)

	Targeted Investment	(Public)	(Private)	GDP targeted growth rate
Commodity Sector	77,200	(26,000)	(51,200)	4.7
Agriculture	13,900	(8,000)	(5,900)	3.5
Mining & Industry	28,000	(600)	(27,400)	7.0
Petroleum	15,000	(300)	(14,700)	1.0
Electricity	17,700	(17,000)	(700)	6.5
Construction	2,600	(100)	(2,500)	7.2
Productive Services Sector	30,100	(13,200)	(16,900)	5.3
Social Services Sector	46,700	(25,300)	(21,400)	5.7
Total	154,000	(64,500)	(89,500)	5.1

Source: Ministry of Planning

1-2-3. Third Development Plan

The plan was formulated with the assistance of the IMF group, and targeted

- establishment of infrastructure for productive activities
- encouragement of exports
- industrialization

by the initiative of the private sector.

The plan by economic sector is shown in Table 1-2-5. Target shares of investments in the third development plan are,

Mining & Industry	18.2%
Electricity	11.5%
Services for production	19.5%

The private sector occupied 58% (in the second plan it had 39%) of the total and the target growth rate of GDP was prudently settled as 5.1%.

In fact, the importance of industry was recognized at initial stage in 1978 but not be realized for long period. Hereby, in the third development plan, it is much more intensively emphasized.

Table 1-2-5 INVESTMENT EXPENDITURES IN THE THIRD FYP 1992/93 - 1996/97 BY ECONOMIC SECTOR

(in Billion L.E.)

Economic Sectors	Public Sector (1)	Business Sector (2)	Total Investment Expenditure
Commodity Sectors	26.0	51.2	77.2
Productive Services Sectors	13.2	16.9	30.1
Social Services Sectors	25.3	21.4	46.7
GROUND TOTAL	64.5	89.5	154.0

(1) Including: Administrative system, Local administration, Economic and Service sector

(2) Including: Private, Public and Cooperative sectors

Source: Summary of the Third Five Year Plan, Mnistry of Planning of Egypt

1-2-4. Orientation of Future Development Plan

The fourth development plan (1997/98-2001/02) has not yet been authorized nor published, but based on the preliminary data and materials prepared during the third development plan, the followings can be stated.

Importance of concentration on the productive activities on the creation of employment opportunities as well as improvement of the balance of payments.

Firstly, the priority given to the business (private) sector is emphasized. Secondly, as shown in the Table 1-2-6, compared with the Third Plan, the share of the Commodity Sector as well as Mining & Manufacturing Industry sub-sector will be remarkably enlarged.

The new development plan still faces several problems such as unemployment, difficulty in the privatization process and in attracting foreign investment, as well as debt accumulation even after some alleviation and so on.

Table 1-2-6 TARGETED INVESTMENT EXPENDITURES IN THE FOURTH FYP COMPARED TO THE THIRD FYP

(at 1991/92 prices, in billion L.E.)

Economic Sectors	Third Plan (1992-1997)		Fourth Plan (1997-2002)	
	Value	Share %	Value	Share %
Agriculture	13.9	9.0	23.0	9.5
Mining & Manufacturing Industry	28.0	18.2	60.0	24.8
Oil and Oil Products	15.0	9.8	20.0	8.3
Electricity	17.7	11.5	28.0	11.6
Construction	2.6	1.7	4.0	1.6
Total Commodity Sectors	77.2	50.2	135.0	55.8
Transport, Communication & Storage	20.0	13.0	30.0	12.4
Suez Canal	0.5	0.3	3.5	1.4
Commerce, Finance & Insurance	3.9	2.5	5.0	2.1
Tourism (Restaurants & Hotels)	5.7	3.7	7.5	3.1
Total Production Services Sectors	30.1	19.5	46.0	19.0
Housing & Public Utilities	28.8	18.7	35.0	14.5
Other Services	17.9	11.6	26.0	10.7
Total Social Services Sectors	46.7	30.3	61.0	25.2
Grand Total	154.0	100.0	242.0	100.0

Source: Summary of the Third Five Year Plan, Ministry of Planning of Egypt

1-3. Industrial Structure

1-3-1. Summary

The future orientation of industry is expected to be particularly influenced by the following.

(1) Tracing the evolution of industrial share in the economy, growth of the industry as a whole, except oil in term of price has been stagnant during the 1980s and from 1990 until at present. There has been one sort of unbalance among them.

(2) As shown by the trade balance the trade deficit due to mainly import of industrial goods is partly compensated offset by net inflow of the Services Account.

(3) The country's economy has faced the necessity of giving priority to investment in economic and social infrastructure which had been greatly damaged by the war.

(4) All the Commodity Sector and productive services, industries have been managed by public enterprises. In 1990, 80% and in 1991, 70% of all industrial production was produced in the public sector.

(5) After adoption of the Economic Reform Policy in 1991, the country has intensively promoted privatization, particularly in manufacturing industries.

(6) The government continues the industrial policy of encouraging private investment and furnishing several incentives to attract foreign investments.

TABLE 1-3-1 BATCH PRIVATIZATION CANDIDATES

	First FY 91/92	Second FY 92/93	Third FY 93/94
A. Law 203	100% state ownership	100% state ownership	Industrial Sector
	1. Egyptian Vineyards Co	1. Kafr Elzayat Insecticides & Chemicals Co	1. El Nasr Co. for Refrac. & Ceramics (SORNAGA)
	2 El Nasr Bottling Co	2. The Nile General Auto Repairs Co.	2 Egyptian Copper Factory Co
	3 Egyptian Bottling Co.	3 Paints and Chemical Industries Co	3. Industrial Gases Co
	4 El Nasr Glass & Crystal Co	4 Alexandria Co. for Pharm. & Chem. Industries	4 Abuqir Fertilizer & Chemical Industries
	5 El Nasr Steam Boiler Manufacturing Co	5 El Nasr Engineering & Refrig. Co. "KOLDAIR"	5 Delta Spin. & Weav. Co
		6. Egyptian Ship Building & Repairs Co	6 Uniarab Spinning & Weaving
			7. Dakahlia Spinning & Weaving
			8 Damietta Spinning & Weaving
			9 Alexandria Spinning & Weaving
			10 Extracted Oil Co
			11. Tanta Oil & Soap Co
			12 Cairo Oil & Soap Co.
			13. Cairo Oil & Soap Co
			14 Alexandria Confectionary & Chocolate Co
			15 Egyptian Starch, Yeast & Detergents Co
			16 Edfina Co. for Preserved Foods
			17. Al Ahram for Beverages
			18. Egyptian Light Transport Manufacturing Co
			19 Springs & Transport Needs Manufacturing Co
			20 Misr Engineering & Tool Co. (MICAR)
			21. Egyptian Co. for Refraactories
B. Shares in Law 203			Cement Sector
	6 Porcelain Dinner ware & Utility ware	7. El Nasr Clothing & Textile Co. "KABO"	22 El Ameria Cement Co
		8 Egyptian Food Co. "Bisco Misr"	23 Tourah Portland Cement
		9 Egyptian Supplies & Marine Works Co.	24. Helwan Portland Cement Co
		10 El Nasr Electronics & Eng. Co. "Philips" (White Goods Factory)	
C. Shares in Law			Industrial Sector
	7. Suez Cement Co.	11. Egyptian Internat. Pharmac. Co. "EPICO"	Assets of Law 203 companies
	8 Chloride Egypt	12 Egyptian German Electrical Products Co.	
		13 Schindler Egypt	25. Delta Indust. Co. (IDEAL) (ALMAZA PLANT)
		14. Egyptian German Dyes Co	
		15 Misr Carbonated Beverages "Misroob"	
		16 Arabian Ceramic Co. "ARAMCO"	

Source: Industrial Projects and Economic Reform in the Arab Republic of Egypt

1-3-2. Evolution of Industrial Sector's Structure

- In the Commodity Sector, the share of the mining and industry has been steadily at maintained about 16-17% during the 10 years from 1985 to 1994. Not-withstanding the willingness to promote industrialization shown at the beginning of the 1980s, as a whole the industrial sector has not grown during these decades.

- The majority of manufacturing industries were state owned in the 1960s but from 1974, the policy of encouraging private enterprises was accepted. Realization was slow, however, because priority was given to public investment in the infrastructure.

- In fact, light industries in the private sector were advanced compared with the neighboring countries, but the scale was small in textile, wood-craft, leather and food industries. In 1991, the record shows that 70% of industrial production was made by public enterprises.

- Regarding privatization, an example of once proposed candidate companies for privatization is shown in the Table 1-3-1. The criteria for selection are the most acute problems reflected in
  - Significant current and cumulative losses,
  - A large number of redundant employees, and
  - Substantial unutilized fixed assets.

In the same table, it is observed that majority of candidates are manufacturing industries.

1-3-3. Steel Industry

- In the steel industry, production of steel bar in ANSDK (El Dehila) has grown favorably from the middle of the 1980's, but output of flat products has been stagnated and EISCO (Egyptian Iron & Steel Co.), producer of sheet with many years experience has been managed without any specific remedy by the government.

- EISCO founded with Germany, later got assistance from former USSR and has produced sheet products and others.

- EISCO faces a difficult situation due to the burden of past accumulated debt of the socialist era, but the government is still adopting the measures of autonomy for EISCO.

- ANSDK, was a huge project installed at the beginning of 1980s that started operation in 1986, is undergoing expansion from 1995.

- The Table 1-3-2 shows all of the capacity of steel factories in Egypt and expected expansion of each factory.

- Crude steel production in Egypt in 1994 was 2.9 million tons.

  Reinforced steel longitudinal products ..... 2.4 million tons
  Strip and sheets ..... 0.5 million ton
  Total 2.9 million tons

- Consumption of flat steel occupies 21.5% of total consumption. Steel plate demand has been dependent on imports which have averaged 205 thousand tons from 1988 to 1992.

- Related parties in Egypt tentatively made a projection of demand in 2005 as 6.2 million tons in total and 1.3 million tons of flat products.

Table 1-3-2 (1) PRODUCTION OF ROLLED STEEL IN EGYPT 1994/1995

(Unit: thousand tons)

Company name	Long Product	Flat Product	Total
ANSDK	1,132	-	1,132
Delta Steel Mill	123	-	123
Egyptian Copper Works	54	-	54
National Metal Industries	151	-	151
EISCO	330*	550	880
Other private sector enterprises (About R.C. bars)	694	-	694
Total	2,484	550	3,034

* 65,000 Ton is Reinforced bars.
265,000 Ton is Section.

Table 1-3-2 (2) CRUDE STEEL PRODUCTION CAPACITY IN EGYPT 1994/1995 & EXPECTED-EXPANSION PROGRAM

Company name	Production (Thousand tons)	
	1994/1995 *1	2000 *2
EISCO	1,151	1,270
National Metal Industries	192	260
Delta Steel Mill	144	160
Egyptian Copper Work	151	160
DNSDK	1,306	1,789
El Temsah	37	37
Arab Special Steel Co.	-	165
El Ezz Steel Co.	-	316
Abu Zaabal for Engineering Industries	-	42
Suez Steel Co.	-	632
Al Atio Co.	-	85
Total	2,981	4,916

(*1) Actual
(*2) Planned

Table 1-3-2 (3) PLANT UNDER CONSTRUCTION

(Unit: thousand tons)

Enterprise	Expected Additional Capacity	Starting Year	Remarks
A- R.C. bars:			
ANSDK	450	1998	Expansion
Konta	300	1996	Rolling plant 10th of Ramadan
El Ezz Steel	380	1996	Rolling plant Sadat city
Boshay	400	1996	Rolling plant Sadat city
Total	1,530		
B- Billets:			
ANSDK	450	1998	
El Ezz Steel	300	1997	
El Ateia	80	1999	
Factory 100 (Military)	40	1998	
Suez Steel	600	1999	
National Metal Lap.	120	2000	
Total Constructed	790		
Under Study	800		

The Study Team taken the following points into consideration:

a) Production capacity of the rehabilitated hot strip Mill in EISCO reaches 600,000 tons/year

b) New complex will be established in Suez area, to produce:
   910,000 tons/year of Sponge iron
   200,000 tons/year Square billets
   150,000 tons/year R.C. bars
   200,000 tons/year Flats
   Starting with R.C. bars

1-3-4. Industries Consuming Flat Steel

- Steel industry has a relation with consuming industries.

- Flat steel, classified by two major categories;
  one is the sheet utilized as material for automobile, electric appliance and tin can, another is plate utilized for engineering industries, shipbuilding and welded pipe.

- It is observed that the actual production amount of the consuming industries in comparison with their production capacity marked low ratio in recent years. The fact shows that increase of demand will be covered by the supply capacity at present or import of the finished products by competitive force, obliged a low production ratio in domestic products.

- There are several encouraging policies for the development of the consuming industries, however, the Study Team did not confirm these policies and will not estimate the rapid development of them in the forecast, GOFI has agreed to this choice (Minute of Meeting dated June 26, 1996).

- Added to the existing company/factory of consumer of flat steel products, at present, several candidates of metallurgical products are published (see Table 1-3-3). These productions in future will stimulate the engineering industries and other related industries.

- Under any condition of industry, adequate scale of supporting industries for steel product will be required for the integrated development of steel industry.

Table 1-3-3(a) METALLURGICAL PROJECTS TO BE PROMOTED BY GOFI, ADDITIONAL TO Table 1-3-3

Project	No. of Project	Location	Production capacity/ each 1,000 tons/year
Sponge Iron Project (HPI)	(2)	Red Sea	2000
Steel Billets Complex	(3)	Red Sea	1000
Steel Flat Complex	2	Red Sea	1000
Engineering Industry Aluminium Castings	1	Quena Nagh Hamady	30
Steel & Cast Iron Rolls	2	Red Sea Suez	10
R.C. Bars Project	3	Assiout Sohag Menia	500
R.C. Bars Complex	1	Red Sea	1000
Prestressed R.C. Bars Complex	3	Dekhila Suez Sadat City	250

Source: GOFI

Table 1-3-3 METALLURGICAL PROJECTS TO BE PROMOTED BY GOFI

Value in L.E. 1,000

Sr. No.	Project	Production Capacity		Main Equipment		Main Raw Materials			Labor		Area m^2	Capital Investment	Return on Investment	Sectorial Interlinkage	
		Quantity Yr	Value	Local	Imported	Quantity (Tons)	Items	Value	Number	Wages				Raw Materials	Products
1	- Aluminum car casting - engine parts - equipment parts	1,800 ton	18,000	600	1,200	2,000 ton	Aluminium & Al. alloys	12,000	50	900	10,000	7,000	32%	Metallurgy	Engineering
2	Castings from - cast iron - alloy c. iron	5,500 ton	6,875	536	360	6,000 ton	Scrap & cast iron	3,000	60	1,200	5,000	5,000	34%	Metallurgy	Engineering
3	Stainless steel castings	1,000 ton	7,000	1,100	1,200	1000t 200t	Steel scrap Ni. & Cr. Alloy	500 2,000	30	600	10,000	8,000	37%	Metallurgy	Engineering
4	Fittings for pipes	1,000 ton	6,000	1,600	4,000	1,200 ton	C.I. C.I. scrap - Coal - Other requirements	600	100	1,600	4,000	10,000	26%	Metallurgy	Final products
5	Aluminum sections	15,000 ton	150,000	5,000	15,000	16,000 ton	Aluminium cylinders	104,000	100	2,000	12,000	65,000	31%	Metallurgy	Engineering
6	Galvanizing iron products by dipping	10,000 ton	12,000	2,000	3,000	450 ton	- Zinc - Acids - Others	2,250	200	4,800	5,000	9,500	30.9%	Metallurgy Chemical	Engineering Chemicals

Value in L.E. 1,000

Sr. No.	Project	Production capacity		Main Equipment		Main Raw Materials			Labor		Area m^2	Capital Investment	Return on Investment	Sectorial Interlinkage	
		Quantity Yr	Value	Local	Imported	Quantity (Tons)	Items	Value	Number	Wages				Raw Materials	Products
7	Heat treatment unit	3,000 ton	7,500	1,500	1,500	325,000 lit 150 ton	Oil & salts Graphite poles	2,500	100	2,400	5,000	5,300	25%	Chemical	Engineering Metallurgy Electrical
8	Seamless pipes, thousand tons	100	400,000	380,000	570,000	100 30 0.7	Sponge iron scrap Iron alloys elec. energy. gas	35,000 15,000 6,000 26,000	800	14,500	million m^2	1,200,000	17%	Metallurgy	- Petrol sector - Gas transmission Boilers
9	Steel complex for steel flats, thousand tons	1,000	1,700,000	1,760,000	2,640,000	940 235 7	Sponge iron scrap alloys elect. energy others	350,000 116,000 9,000 235,000 55,000	1,000	18,000	million m^2	4,900,000	10%	Metallurgy	Engineering
10	Foundry complex (building and laboratory) thousand ton	500	4,750,000	16,000	24,000		Not included		200	4,000	70,000 0	153,000	33%	Metallurgy	Other sectors
	foundry unit indices	700 ton	2,700	600	900	800	Iron-ore	400	50	1,000	1,400	2,500	33%	Metallurgy	Other sectors
11	Railways thousand ton	50	80,000	38,000	57,000	55	Steel sections	30,000	100	2,000	Included in iron and steel complex	12,200	3%	Metallurgy	Locomotives

Source: Ministry of Planning of Egypt

1-3-5. Industrial Policy for Steel and Flat Steel Consuming Industries

Industry policy of Egypt has progressed during the 1980s but as a whole, growth of the industrial investment has been slow because investment in the infrastructure had much more priority. Therefore, the industrial policy in the past did not have a concentrated target even though the industrial share marked some growth, as shown below:

	1983/84	1988/89
Share of industrial sector to the GDP:	13.4%	
Annual growth rate:	18%	
Share of industrial sector in the Gross Capital Formation:	22.9%	24.7%

In 1990, the government as well as the Ministry of Industry established the fundamental policy for industry mainly based on the concepts of ;

Liberalization of trade,
Encouragement of commodity export, and
Encouragement of privatization,

with 16 strategy axes containing 66 policies, the summary of which is attached hereto as Annex 1-2.

The steel related industries, designated as consuming industries, such as automobile, electric appliance and tin plate, is taken as an example.

Each of these industries need to have a certain economic scale and international competitive force, which requires to some extent protectionism.

The country at present imposes 10 - 30% import taxes according to grade, thickness, and width (Ref. Egyptian Custom Tariff, Heading 72-08, 72-09).

It is observed that the steel consuming industries in the country have not yet a sufficient economic scale nor international competitive force. Therefore, the country obtained the international consensus for adopting the protectional measures to some extent for the infant industries.

After the favorable trade agreement with USA and Israel, Egypt and Mediterranean Arab countries are looking for conclusion of an advantageous trade and commercial agreement with European Union (EU).

The country's industrial policy needs to be well balanced between the international market situation and the domestic market requirement.

1-4. Present Status of Steel Industry

1-4-1. Summary

In Egypt, steel products are manufactured at three kinds of industrial facilities.

(1) Integrated steel plants that manufacture products from pig iron or reduced iron to steel products
(2) Steel making and rolling mills
(3) Only rolling mills

Their capacities and production in 1992/93 are summarized in Table 1-4-1.

Flat steel is produced by only EISCO, and other companies produce long products but mainly bar steel. In fact, bar steel accounts for 73.4% of total steel product, or 1,980,000 out of 2,698,000 tons, while flat steel product totals 334,000 tons (12.4%) and section product 384,000 tons (14.2%). Bar steel dominates additional capacity now being installed as well as planned for the future; when present installation as well as planned work are completed, the total capacity will amount to 2.2 million tons, while no expansion plan is known for flat steel. A special steel mill, the reported to have been started, of which is construction will manufacture mainly long products. The emphasis on long products reflects the country's demand for steel products. It is notable that a large share of flat steel products is used for construction materials and for welded pipes, resulting in a large share for the construction industry in total consumption of steel products.

1-4-2. Production of Steel Materials

There are only two integrated steel plants in the country; EISCO produces pig iron at blast furnace, using locally produced iron ore, and ANSDK manufactures direct reduced iron from imported pellet by using natural gas. Suez Steel has a 600,000-ton billet production plan, but construction schedule details are not available.

Three companies have steel making and rolling mills, and 8 stand-alone rolling mills to produce bar steel. In addition, 6 companies plan to start bar steel production from ordinary steel materials. Together with capacity to be added at existing mills, 2.2 million tons of capacity will be added to double the current total capacity.

In Egypt, scrap supply is very small and prices are high. There is an opportunity for supply of scrap or reduced iron products.

Table 1-4-1 STEEL PRODUCTION IN EGYPT

Kind	Company	Steel 1,000ton/y Type	Capa.	Production 92/93 R/CBar	Sctn	Flat	Total	Future Expansion Steel	Rolling		Timing, etc.
Integ.	Egyptian Iron &	12TEAF	36								
Public	Steel (HADISOLBO)	80TLD	1,200	37	315	334	686	300	Rod	440	1997 Expansion
Integ.	ANSDK	70TEAF	810	1,035			1,035				Improve operation
Semi	National Metal	36TOHF	90		F Bar						
Integ.	Industry (NMI)	35TEAF	160	145	18		163		Re-Bar	50	
Public	Delta Steel Mil	3-25TEAF	95		F Bar						Rehabilitation
	(DSM)			112	33		145	50			CC Machines
	Egyptian Copper	30, 50TOHF	165								Install
	Works	25TEAF		62	7		69	25			Ladle furnace
Rolling	El Baraka			174			174	174			
Mill	El Shinnawy			36			36	36			
Private	El Temsah	EAF	30	10	3		13	10	Re-Bar	150	89-, Italian Secondhand
	Youssry			4	8		12	4			
	El Hoda										
	Kuta			75			75	75			
	El Haway			240			240	240	Re-Bar	160	Sadat city
	Others			50			50	50			
Under	Boshay								Re-Bar	600	Dec. '95 Sadat city
Const.	Kouta								Re-Bar	210	Dec. '95 10 Ramadan
or	Al Ezz Steel Re Bars							600	Re-Bar	300	July '96 Sadat city
Plan	Port-said Co								Re-Bar	200	Ramadan, under study
	Moustafa Sarhan								Re-Bar	90	89- Ameria Alex
	Arco Steel							140	Specl	140	1998 Sadat, Korean
	Suez Steel							600	Billet		Mr. Sedki
Total			2,586	1,980	384	334	2,698	2,304		2,340	

Source: Study Team

Table 1-4-2 R.C. BAR FACTORIES

(Unit: 000th. tons)

Enterprise	Capacity	Actual Production 1993	1994	Remarks
Business Sector:				
Egyptian Iron & Steel Co.	70	37	59	Billet production and
National Metal Ind. Co.	190	128	151	Rolling Mill
Delta Steel Mill	130	123	123	
Egyptian Copper Works	75	53	54	
Sub-total (A)	465	341	387	
J.V. & Private Sectors:				
ANSDK	1,200	1,102	1,132	
El Baraka	250	194	209	
El Hawary	240	160	150	
El Shinnawy	90	49	48	
Port Said Co.	110	80	95	
Vector Alad	40	25	25	
El Temsah	50	12	15	
United Steel	35	20	30	
Mostafa Sarhan	35	20	30	
El Amal (El Hoda)	40	-	-	Temporay out of production
Others	110	72	92	
Sub-total (B)	2,200	1,734	1,826	
Gross total	2,665	2,075	2,213	

Source: GOFI

1-5. Regional Location of Industries

1-5-1. Summary

GOFI suggested three candidate sites (see Table 1-5-1), and the Study team had the opportunity to visit only one, in Alexandria. This site is referred to as the ANSDK site below. Comparative analysis of the three sites must be deferred to Phase 2. At the time, the supply source of pellet should be considered among the criteria for selection of site.

1-5-2. Conditions in the ANSDK Area

(1) Possible site location

There are three alternate locations possible for the project.

1) Within the existing ANSDK factory site: here is possible to install machinery for only hot rolling mill.

2) A southern neighboring lot: There is a site south of the current ANSDK factory, across a highway. It is approximately 460,000m^2 (1,250m x 370m).

3) A northern neighboring lot: There is a very large site under development to the north of the current ANSDK factory across a highway, and next to the port. This area had been prepared as the site for a coal-burning power generator but this plan was canceled because natural gas was developed. There is a plan to use this area as a free-trade zone but the final decision has not yet been made.

(2) Infrastructure

- There is a jetty and enough natural gas and utilities, as described in Table 1-5-2.
- And also there are supporting industries for the existing mills around the ANSDK area.

Table 1-5-1 CANDIDATE LOCATIONS

	Alexandria	Suez (ADBela)	SAFAGA
Available area	South area 1,250m X 370m North area also attached sheet	Available	Available area
Steel industry	ANSDK	Billet making plant with capacity of 600,000t	
Port & draught	140,000 DWT Max. -20m	Port ADBeia Max. -14m	Max. -14m
NG availability	Capacity 92,000m^3 Consumption 40,000m^3	Possible	No
Electric power	2 X 220kv, 180MW-250MW	220kv	Supply line extension is required
Industrial water	930m^3/Hr	Process water available Cooling water from sea	Same as Suez
Major consuming industries		Shipyard	
Development policy	General advantage as new community Population density is high (6 million)	General advantage as new community Population density is low (less than 300,000)	General advantage as new community
Pollution problems	Resort area	Resort area	

Source: GOFI

Table 1-5-2 INFRASTRUCTURE OF THE ANSDK AREA

Items	Current main capacity	Description (Flexibility for expansion)
Mineral jetty	Wharf: depth of water max. 20m to 200 thousand DWT Ships are able to arrive here. Stockyard: 23,000m^3 (for 5 months) Land transportation by BC and Rail Way	State-owned (operated by ANSDK) The current load factor is about 50% and it has flexibility for operational expansion.
Natural Gas	Supply capacity: 92,000Nm^3/Hr Current ANSDK consumption: 5,000Nm^3/Hr	It has energy enough to spare and no problems.
Electricity	Reception of electricity: 220KV, 180MVA x 2	It is necessary to reinforce sub-station when expanding factories. (Possible)
Water for industrial use	Available line supply volume: 2,000m^3/Hr Maximum amount of water drawn from rivers: 930m^3/Hr	As there are many headwaters in this area, it is possible to deal with factory expansion by reinforcement of pumps.
Oxygen	Total flow: 400Nm^3/Hr	It is necessary to reinforce oxygen plants. (Possible)

Source: ANSDK

1-6. Natural Resources and Energy

1-6-1. Summary

The Study Team has obtained information from "UNEP Greenhouse Gas Abatement Costing Studies Case Study on Egypt 1995". And also the team obtained electric power generation and forecast which was sent by GOFI.

Natural gas production increased from 1,616kt in 1980 to 6,110kt (296.7PJ) in 1990 and is expected to increase to 808PJ in 2020.

1-6-2. Natural Gas

Natural gas is produced at Abo El Garadiek, Abo Madi and Abo Keir and production increased every year (see Table 1-6-1). New gas fields at Delta and Matroh are under development and the natural gas assures a wide-margin increase of production in the future (see Table 1-6-2).

To utilize natural gas as fuel, for electric power generation, and as feedstock for chemical products and raw materials to make sponge iron, a pipe lines have been installed and are extended (at the approximate rate of 100km/y).

The price of natural gas recently linked with the price of crude oil.

Expansion of the pipe line net work, and replacement of the existing pipe lines (about 5%), assure large-scale future growth of demand for them.

Table 1-6-1 NATURAL GAS

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Crude refined (Mt)	13.83	15.07	16.81	18.14	19.54	20.22	21.14	22.43	22.47	23.06	24.34
Gas production (Kt)	1,616	1,844	2,023	2,376	3,046	3,733	4,306	4,785	5,361	5,889	6,110

Source: UNEP Greenhouse Gas Abatement Costing Studies Case Study on Egypt 1995

Table 1-6-2 NATURAL GAS PRODUCTION IN FUTURE

	1990	2000	2010	2020
Oil product (PJ)	753.3	731.8	534.7	496
Natural gas (PJ)	296.7	514.4	693.6	808

PJ 10^15

Source: UNEP Greenhouse Gas Abatement Costing Studies Case Study on Egypt 1995

1-6-3. Electric Power

Electric power generation through 2005/06 is shown in Table 1-6-3.

Table 1-6-3 LOAD AND ENERGY FORECAST

Year	Total Generation (MWH)	G.R.	Total Peak Load (MW)	G.R.
1994/95	51,327		8,149	
1995/96	54,409	6.00%	8,630	5.90%
1996/97	57,692	6.03%	9,141	5.92%
1997.98	61,275	6.21%	9,699	6.10%
1998/99	65,295	6.56%	10,325	6.45%
1999/20	69,561	6.53%	10,988	6.42%
2000/01	74,052	6.46%	11,686	6.35%
2001/02	78,788	6.40%	12,420	6.28%
2002/03	83,663	6.19%	13,175	6.08%
2003/04	88,804	6.14%	13,971	6.04%
2004/05	94,230	6.11%	14,810	6.01%
2005/06	100,042	6.17%	15,707	6.06%

Source: GOFI

The EEA plans for the addition of generating capacity is summarized in Table 1-6-4. The plan shows the future development of electric power generation which can contribute to support of industrial development and to consume the flat steel for their construction.

Table 1-6-4 EEA MEDIUM-TERM PLAN FOR CAPACITY ADDITION AT GENERATION PLANTS 1994/95 to 2005/06

Plant	94/95	95/96	96/97	97/98	98/99	99/00	00/01	01/02	02/03	03/04	04/05	05/06
Talkha EXT.	210											
Assult		300										
Cairo West	2*300							2*325				
Mahmodia C.C.		100										
Damanhour EXT.											325	
Damanhour C.C.		50										
Cairo South C.C.	165											
Kurimat			650	650								
Sidi Krir					325	325						
Ayon Mousa							325	325				
Attaka (Pump st.)									325	325		
Cairo North G.T.												
Delta North C.C.												
Nobaria C.C.											2*300	300
Suez Gulf									325	325		325
El Tebien G.T.										2*100		
Total	975	450	650	650	325	325	325	975	650	850	925	625

Source: GOFI

Chapter 2

MARKET ANALYSIS OF STEEL FLAT PRODUCTS

2. MARKET ANALYSIS OF STEEL FLAT PRODUCTS

2-1. Major Consuming Industries for Steel Flat Products

2-1-1. Summary

- Major consumers of flat steel products are composed of (1) industries where demand is mainly for plate and thick hot rolled products, including general steel structure, welded pipes, and shipyards, and (2) industries where demand is for sheet products, such as automobile, household appliance, canned food and metallic furniture.
- In the Egyptian market for flat steel products, consumption of plate and thick hot rolled sheet products for use in construction materials and pipes is relatively large due to the scale of construction activities and of the oil/natural gas pipeline industries, while demand for cold rolled sheet products is comparatively small due to the limited production of consumer durable goods.
- Factories for manufacturing durable consumer goods are mainly located in Cairo, Giza, Alex and Sharkia. (See Table 2-1-1)
- Consumption for general steel structures in 1995 was 176,350 tons and mainly flat steel for this use was hot rolled sheet over 3mm.
- Consumption at shipyards in 1995 was 41,700 tons and mainly flat steel for this was plate and hot rolled sheet over 3mm.
- Consumption for welded pipe in 1995 was estimated 246,889 tons and 60% of it had thickness less 3mm, and 40% over 3mm.
- Consumption for gas cylinder in 1995 was 48,960 tons.
- Consumption for metal container in 1995 was 23,500 tons.
- Consumption for railway in 1995 was 6,338 tons.
- Consumption for boilers, pressure vessels and heat exchangers in 1995 were 1,350 tons.
- Consumption for home appliances in 1995 was 72,249 tons and almost all was cold rolled sheet and with thickness less 3mm.
- Consumption for automobiles in 1995 was 31,787 tons and consisted of hot rolled sheet and cold rolled sheet.
- Consumption for canned food in 1995 was 17,279 tons and all flat steel was tin plate.
- Consumption for steel furniture in 1995 was 50,000 tons and all was cold rolled sheet with thickness less 3mm.
- Consumption for other governmental organization in 1995/96 was 44,000 tons.

Table 2-1-1 SOME ENGINEERING INDUSTRIES USING STEEL FLAT (By location)

Main product	Number of companies/factories/shops										Total
	Cairo	Giza	Alex	Sharkia	Kharbia	Behira/OT	Kaliobia	Dakalia	Menoufia	Upper Egypt	
Air conditioners	4	4		6							14
Metal furniture	98	20	10	10	3	2	7	5	4	8	167
Refrigerators & heaters	14	14	7	12		2	7				56
Washing machines & deep freezers	8	15	10	12	1	1	3	2	1	4	57
Gas cookers & ovens	1	4	2	7			3				17
Automobile parts and auto	31	13	8	7	1	3	3	1		2	69
Tanks, boilers & metal sheet	12	4		7		2	4	5			34
Other metal sheet	5	1	1	1		1	1	2			12
Total	173	75	38	62	5	11	28	15	5	14	426

Source: GOFI

2-1-2. General Steel Structure

General steel structures comprise ten categories as enumerated below. The Study Team visited six companies, and consumption of steel by the remaining companies was estimated on the basis of data obtained at the companies visited.

Total flat steel consumption is estimated at 176,350 tons, of which 142,350 tons are 1.5m or less in width, which can be manufactured by EISCO. However, some products of these specification are also imported due to reasons such as quality requirements (See Table 2-1-2).

1) Main types of steel structure:
   (1) Steel works for the various industries
   (2) Buildings
   (3) Tanks for petroleum, spherical gas, LPG tanks and water tanks
   (4) Transmission towers (The towers are not made by welded flat plate but are made by rolled steel sections.)
   (5) Silos
   (6) Bridges
   (7) Overhead gantry, and tower cranes
   (8) Water treatment and gas/air cleaning equipment
   (9) Welded sections
   (10) Non-standard equipment other than above

   The Study Team visited manufacturers for all of the above other than (5) and (10).

2) Main companies/factories in this sector include the following, and the companies with * were visited by the Team.

   * STEELCO
   * METALCO
   * FERROMETALCO
   * ERISCOM
     PETROJET
     ARAB CONTRACTORS
     AGIBA
   * PORT SAID ENGINEERING COMPANY P.S.E.W. 10TH OF RAMADAN WORKS
   * HIMEC
     and other similar 5 factories

The following companies are introduced by EGITALEC.

HIDELICO
EBAC FOR EQUIP.
AMERIA OIL REFINERY

3) Production capacity expansion plans as ascertained by the Study Team comprise the following.

(1) FERROMETALCO has a plan to build a new factory, in the near future, having 2 times the capacity of the existing factory.
(2) Port Said Engineering Company P.S.E.W. 10th of RAMADAN Works has a plan to build a new factory having the same capacity with the existing factory, with construction to begin in 5 years at earliest.

Table 2-1-2 CONSUMPTION MIX OF GENERAL STEEL STRUCTURE SECTOR

(Unit: tons/year)

Width(mm) / Thick.(mm)	w≦600	600<w ≦1000	1000<w ≦1220	1220<w ≦1500	1500<w ≦2000	2000<w ≦2500	2500<w ≦3150	3150<w ≦4000	4000<w	Total
3≧t		1,900		1,000						2,900
3<t≦6		1,900		1,000						2,900
6<t≦8		9,300		500						9,800
8<t≦16		11,200		17,100	4,900					33,200
16<t≦24		14,900		40,600	8,100	10,000				73,600
24<t≦40				8,900	5,000	2,000				15,900
40<t≦63				500	4,000					4,500
63<t≦100										
100<t≦160										
160<t										
Total		39,200		69,600	22,000	12,000				142,800
Additional *				33,550						33,550
		39,200		103,150	22,000	12,000				176,350

Note: * Additional amount informed by EGITALEC

(Unit: tons/year)

	≦1,500mm	>1,500mm	Total
t≦3mm	2,900	0	2,900
3mm<t≦24mm	130,050	23,000	153,050
t>24mm	9,400	11,000	20,400
Total	142,350	34,000	176,350

Note: Calculated from the above table.

2-1-3. Shipyard

There are nine large shipyards, plus a number of small ones. The Study Team visited eight large shipyards to collect data on production capacity, production results, and flat steel consumption. Estimates were made for one more shipyard not visited. Information for TIMSAH Shipbuilding Co. was obtained from GOFI.

- Steel products used by the shipyards comprise materials for shipbuilding, ship repairing, and steel structural products. Total consumption is estimated at 49,560 tons, of which 41,700 tons appear to be flat steel products. (See Table 2-1-3.) Products of 1.5m or less in width amount to 15,400 tons, most of which appear to be locally produced, while all of the 1.5m or wider products totaling 26,300 tons are imported. (See Tables 2-1-4, 2-1-5, 2-1-6, 2-1-7, and 2-1-8)

1) The main shipyard companies are as follows; asterisks include companies that were visited by the Study Team.
   *(1) ALEXANDRIA SHIPYARD
   *(2) EGYPTIAN SHIPBUILDING AND SHIP REPAIRING CO.
   *(3) GENERAL EGYPTIAN WORKSHOPS CO.
   *(4) PORT SAID SHIPYARD
   (5) PORT TAWFIK SHIPYARD
   *(6) SUEZ SHIPYARD
   *(7) TIMSAH SHIPBUILDING CO.
   *(8) PORT SAID ENGINEERING WORKS CO.
   *(9) CANAL NAVAL CONSTRUCTIONS CO.
   (10) Other small shipyards

2) The demand forecast of flat steel to be used by shipyards in 2005 and 2015.

   (1) No shipyard has an expansion plan, but production (flat steel demand) will increase more than 100% if the yards are under full operation, in particular, in two big shipyards (Alexandria and Port Said shipyard) even if without any expansion.

   (2) It will be required to have international competitiveness to get more orders and to achieve full operation. So improvement of facilities and production management will be needed.

   (3) Steel demand for 2005 and 2015 in the shipbuilding industry will follow the macroeconomic indicators if the Egyptian shipyards can maintain international competitiveness.

   (4) To be used in the Egyptian shipbuilding industry, domestic steel has to satisfy shipyards' requirements in quality, size and delivery time.

Table 2-1-3 CURRENT STEEL CONSUMPTION IN SHIPYARDS

Shipyards	Steel Consumption in tons/year			
	New bottom	Ship repair	Other steel structure	Total
(1)	6,000	2,000	-	8,000
(2)	500	1,000	1,000	2,500
(3)	3,000	-	3,000	6,000
(4)	3,000	3,000	3,000	9,000
(5)	-	500	-	500
(6)	500	2,000	300	2,800
(7)*	4,910	1,280	-	6,190
(8)	3,000	1,000	1,000	5,000
(9)	2,000	500	1,000	3,500
Subtotal	22,910	11,280	9,300	43,490
(10)20%	4,582	2,256	1,860	8,698
Total	27,492	13,536	11,160	52,188

Note: * According to GOFI's information, consumption of steel by TIMSAH Shipbuilding Co., local steel is plate 3,200t and section 960t and imported steel is plate 1,500t and section 450t. 4,910t is used for new building and 1,280t for repairing.

Source: Field survey

Table 2-1-4 CURRENT FLAT STEEL CONSUMPTION IN SHIPYARDS (APPROX. 80 % OF STEEL)

Shipyards	Steel Consumption in tons/year			
	New bottom	Ship repair	Other steel structure	Total
(1)	5,000	1,600	-	6,600
(2)	400	800	800	2,000
(3)	2,500	-	2,500	5,000
(4)	2,500	2,500	2,500	7,500
(5)	-	400	-	400
(6)	400	1,600	200	2,200
(7)	1,900	800	-	4,700
(8)	2,500	800	800	4,100
(9)	1,600	400	500	2,500
Subtotal	16,500	8,900	8,100	33,500
(10)20%	3,300	1,780	1,620	6,700
Total	22,100	10,680	9,720	42,500

Source: Study Team

Table 2-1-5 CURRENT FLAT STEEL CONSUMPTION IN SHIPYARDS IN EACH THICKNESS

Shipyards	Total	Average Import ratio (%)	Steel Consumption in tons/year		
			t < 6.3	6.3 ≤ t < 12.7	t ≥ 12.7
			(Import rate in brackets)		
(1)	6,600	100	-	2,600 (100)	4,000 (100)
(2)	2,000	50	400 (50)	1,600 (50)	-
(3)	5,000	10	2,500 (0)	1,500 (0)	1,000 (50)
(4)	7,500	100	-	7,500 (100)	-
(5)	400	0	200 (0)	200 (0)	-
(6)	2,200	40	500 (0)	1,200 (33)	500 (100)
(7)	4,700	30	-	3,200 (30)	1,500 (30)
(8)	4,100	100	1,000 (100)	2,000 (100)	1,100 (100)
(9)	2,500	40	1,000 (0)	1,000 (50)	500 (100)
(10)	6,700		6,700	0	-
Total	41,700		12,300	20,800	8,600

Source: Study Team

Table 2-1-6 CURRENT FLAT STEEL CONSUMPTION IN SHIPYARDS IN EACH THICKNESS & WIDTH

(Unit: tons)

Thickness (t) in mm		Width (w) in m (Max. 3 m)		
		w ≦ 1.5	1.5 < w ≦ 3	Total
t<6.3	(1)	-	-	-
	(2)	200	200	400
	(3)	2,500	-	2,500
	(4)	-	-	-
	(5)	200	-	200
	(6)	500	-	500
	(7)	-	-	-
	(8)	-	1,000	1,000
	(9)	1,000	-	1,000
	(10)	6,700	-	6,700
Total		11,100	1,200	12,300
6.3≦t<12.7	(1)	-	2,600	2,600
	(2)	800	800	1,600
	(3)	1,500	-	1,500
	(4)	-	7,500	7,500
	(5)	200	-	200
	(6)	800	400	1,200
	(7)	-	3,200	3,200
	(8)	-	2,000	2,000
	(9)	500	500	1,000
	(10)	-	-	-
Total		3,800	17,000	20,800

Source: Study Team

Table 2-1-7 CURRENT FLAT STEEL CONSUMPTION IN SHIPYARDS IN EACH THICKNESS & WIDTH

(Unit: tons)

Thickness (t) in mm		Width (w) in m (Max. 3 m)		
		w ≦ 1.5	1.5 < w ≦ 3	Total
t≧12.7	(1)	-	4,000	4,000
	(2)	-	-	-
	(3)	500	500	1,000
	(4)	-	-	-
	(5)	-	-	-
	(6)	-	500	500
	(7)	-	1,700	1,500
	(8)	-	1,100	1,100
	(9)	-	500	500
	(10)	-	-	-
Total		500	8,100	8,600

Source: Study Team

Table 2-1-8 CURRENT FLAT STEEL CONSUMPTION IN SHIPYARDS IN EACH THICKNESS & WIDTH

(Unit: tons)

Thickness (t) in mm	Width (w) in m (Max. 3 m)		
	w ≦ 1.5	1.5 < w ≦ 3	Total
t<3	6,000	0	6,000
3<t<6.3	5,100	1,200	6,300
6.3≦t<12.7	3,800	17,000	20,800
t≧12.7	500	8,100	8,600
Total	15,400	26,300	41,700

Source: Study Team

2-1-4. Welded Pipes

Egypt has large networks of natural gas, oil and water pipes. Consequently, there is a large market for welded pipe, and 7 companies are manufacturing pipes and tubular products.

The Study Team visited two companies (Masr Pipes and International for steel). Since information from these sources is slightly more than Figures obtained from EGITALEC, the Study Team modified the Figures of EGITALEC (see Table 2-1-9).

Egypt is a net importer of welded pipes, which suggests that domestic suppliers will be encouraged to increase output to gain their market shares.

There are large-scale plans to install new pipelines and also an increasing replacement demand for the existing pipes. The total demand of pipes will continue to grow in the future.

Potential Capacity 150,000 t/y

Hot Rolled Coil Consumption 100,000 t/y

Width / Thick mm	1,000mm	1,250mm	1,500mm	Total
2.0mm	10%	10%		20%
2.5	20	15	5%	40%
3.0	10	7	3	20%
3.5	3	1	1	5%
4.0	6	3	1	10%
6.0	1	3	1	5%

Supplier
Local (Helwan) 50%
Import 50%
Ukraine
Romania,
Germany

Source: Field survey

Table 2-1-9 FLAT STEEL DEMAND FOR PIPE MANUFACTURER

By Product

Industries & Users	Uses	Estimated annual consumption (tons)	
		EGITALEC	Study Team
Masr Pipes	Pipes	75,000	92,989
Light Transport	Pipes for bicycle frames	41,000	41,000
International for steel	Pipes	35,000	100,000
Acro Misr	Pipes for scaffolding	2,500	2,500
Arab German Lighting	Pipes	2,400	2,400
Elmaco	Pipes for transformers	4,000	4,000
Fozemetal	Pipes	4,000	4,000
Total		163,900	246,889

Source: EGITALEC and Field survey

By thickness (Unit: ton)

	%	<1,500mm
t≦3mm	60	148,133
t>3mm	40	98,756
Total	100	246,889

Note: Estimated by the Study Team

2-1-5. Home Appliance

Home appliances include gas ovens, gas heaters, refrigerators, deep freezers, washing machines, and air conditioners. Table 2-1-10 lists major 40 manufacturers of home appliances with their available capacity.

Available capacity present for gas ovens, refrigerators and washing machines exceeds 1 million units. There are 21 manufacturers of gas ovens, 11 manufacturers of refrigerators, and 12 manufacturers of washing machines now in operation. But their actual production in 1995/1994 remains as low as 44%, 36%, and 21% of the available capacity, respectively, which indicates a considerable excess of capacity (see Table 2-1-11).

Production of refrigerators, automatic washing machines and air conditioners has been growing at a high rate. Their average annual growth rates in the recent 5 years were 7.7%, 19.0%, and 18.4%, respectively. Production is expected to grow at even higher rates in the future in line with the increase of the real GDP per capita.

Table 2-1-12 estimates the actual consumption volume of flat steel on the basis of the actual production units of home appliances in 1995/1994. The consumption volume of flat steel per unit for each product or component is based on information from GOFI and modified on the basis of interviews at major manufacturers and experiences in Japan. The Study Team also estimates the yield rates in processing flat steel, using the Figures from major manufacturers as a basis.

As a result, total consumption of flat steel is estimated at 72,249 tons. Production of gas ovens is the largest source of demand with a share of 45.8%, followed by refrigerators and washing machines whose shares are 22.8% and 14.7%, respectively.

Table 2-1-13 shows the above consumption volume in terms of materials and thickness. By material, consumption of cold rolled sheets was 65,747 tons, accounting for 91%, while that of coated sheets was 6,502 tons, 9% of the total volume. In terms of thickness, 88% of cold rolled sheets consumed are 0.5mm to 1.0mm, while 95% of coated sheets are 1.0mm to 3.0mm.

Table 2-1-10 AVAILABLE CAPACITY OF MAJOR MANUFACTURERS/HOME APPLIANCES (by Product)

(Units)

No.	Company Name	Refrigerators	Deep Freezers	Washing Machines	Air Conditioners
1	Alexandria for Metallic Products	20,000	*	40,000	
2	360 Military Factory				
3	Appliances Factory (Factory No. 306)	30,000		100,000	
4	Gas Ovens Factories (ATLAS)				10,482
5	Industrial Union Factory				
6	GMC				
7	Techno Gas (EASTERN)	70,000	30,000	15,000	
8	Fresh	40,000		600,000	
9	Thomas of Household appliances & furnitures	750,000		5,000	
10	Prince for Home Appliance			5,000	
11	Engineering Manufacturing Co.	32,000	8,000	245,000	
12	Gohar of Metallic Industries	45,000	10,000	100,000	
13	Universal Co.	32,000	36,000		
14	Fager for Gas Ovens Manufacturing	40,000	30,000		
15	Amoun for Gas Ovens Manufacturing	51,000	15,000		
16	Aman for Gas Ovens Manufacturing		15,000		
17	KIRIAZI for Engineering Industries		10,000		
18	PHILIPSE		3,000		
19	IDEAL			20,000	
20	Koldair			120,000	
21	Kojec			250,000	
22	Tako Electric				
23	SILITAL	*	*	*	*
24	EBERNA				10,000
25	ALASKA				170,000
26	Majestic				6,000
27	ELECTROSTAR				15,000
28	SUPER BOSCH				
29	Sohage for Cooling Industries				
30	Shafieh Sons				
31	OLYMBIC				
32	EXPRESS				
33	Nour				
34	Itehad				
35	Egyptian Co. for Cooking				
36	El Nasr Co. for Cooling				
37	Power				
38	MIRACO				
39	International				
40	DRICK				
Total		1,110,000	157,000	1,500,000	211,482

No.	Company Name	Gas Ovens	Gas Heaters
1	Alexandria for Metallic Products	20,000	60,000
2	360 Military Factory	120,000	73,000
3	Appliances Factory (Factory No. 306)	15,000	
4	Gas Ovens Factories (ATLAS)	200,000	
5	Industrial Union Factory	215,000	
6	GMC	50,000	
7	Techno Gas (EASTERN)	100,000	
8	Fresh	20,000	15,000
9	Thomas of Household appliances & furnitures	30,000	
10	Prince for Home Appliance	10,000	
11	Engineering Manufacturing Co.	20,000	
12	Gohar of Metallic Industries	20,000	
13	Universal Co.	130,000	
14	Fager for Gas Ovens Manufacturing	30,000	
15	Amoun for Gas Ovens Manufacturing	5,000	
16	Aman for Gas Ovens Manufacturing	10,000	
17	KIRIAZI for Engineering Industries	50,000	
18	PHILIPSE		
19	IDEAL		
20	Koldair		
21	Kojec		
22	Tako Electric		
23	SILITAL		
24	EBERNA		
25	ALASKA		
26	Majestic		
27	ELECTROSTAR		
28	SUPER BOSCH		
29	Sohage for Cooling Industries		
30	Shafieh Sons		2,000
31	OLYMBIC	20,000	
32	EXPRESS		
33	Nour	10,000	
34	Itehad	*	
35	Egyptian Co. for Cooking	*	
36	El Nasr Co. for Cooling		
37	Power		
38	MIRACO		
39	International		
40	DRICK		
Total		1,075,000	150,000

Note: * moans data are not available as of August, 1996.

Source: GOFI

Table 2-1-11 PRODUCTION OF HOME APPLIANCES

(Unit: units, 1,000LE)

Items	1991/90		1992/91		1993/92		1994/93		1995/94	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
1. Refrigerators	356,972	207,230	305,247	225,740	325,939	237,098	226,111	323,240	493,915	974,588
Refrigerators & cooling systems	356,972	207,230	305,247	225,740	325,939	237,098	226,111	323,240	493,915	974,588
2. Gas cookers	505,987	133,153	510,245	187,667	601,628	201,245	580,292	210,993	621,547	218,906
Plate cookers	5,005	608	53,752	4,114	54,033	4,281	69,409	7,853	72,879	8,246
Gas ovens	428,409	112,619	394,749	156,327	471,147	170,633	448,614	171,061	471,044	179,614
Water heaters 5 & 10 liters	72,573	19,926	61,744	27,226	76,448	26,331	62,269	32,079	77,624	31,046
3. Air-conditions units	57,762	113,416	81,962	185,111	94,131	247,308	98,363	235,816	110,776	260,639
Windows air-conditions	29,624	56,737	71,885	163,228	79,073	211,303	37,421	66,009	45,734	79,762
Split units	27,938	56,679	10,077	21,883	15,058	36,005	60,942	169,807	65,042	180,877
4. Washing m/c	276,363	147,192	318,447	197,811	160,838	221,904	311,320	249,218	311,334	259,167
Washing m/c	172,370	32,229	181,313	38,429	17,046	40,068	137,411	35,887	130,161	34,715
Automatic washing m/c	65,924	104,377	110,233	145,307	114,013	163,613	127,186	192,815	128,396	201,496
Plates washing m/c	3,467	4,334	3,940	6,523	5,759	10,467	5,754	9,958	5,854	10,123
Baby washing m/c	4,250	662	12,591	1,952	13,650	2,156	30,599	4,958	33,016	5,323
Half automatic washing m/c	(*)10,352	5,590	(*)10,370	5,600	(*)10,370	5,600	(*)10,370	5,600	(*)13,907	7,510

Note: Asterisks denote estimates by the Study Team.

Source: CAPMAS

Table 2-1-12 CONSUMPTION OF FLAT STEEL FOR HOME APPLIANCE PRODUCTION

	Available Capacity in 1995/94 (Units)	Actual Production in 1995/94 (Units)	Unit Consumption (Tons)	Yield	Estimated Consumption of Flat Steel Volume in 1995/94 (Tons)
Refrigerators	1,111,000	395,132	0.030	0.72	16,464
Cabinet			0.019	-	
Doors			0.010	-	
Compressor unit			0.001	-	
Deep freezers	157,000	98,783	0.025	0.72	3,430
Cabinet			0.019	-	
Doors			0.005	-	
Compressor unit			0.001	-	
Gas ovens	1,075,000	471,044	0.048	-	33,087
Sides			0.004	0.88	2,141
Burners tray			0.003	0.86	1,643
Top tray			0.003	0.86	1,643
Back			0.002	0.87	1,083
Door frame			0.007	0.63	5,234
Lower door			0.003	0.86	1,643
Oven frame			0.017	0.54	14,829
Face for knobs			0.001	0.86	438
Oven tray			0.008	0.85	4,433
Washing machines	1,500,000	297,427	0.025	0.70	10,622
Body			0.017	-	
Back			0.005	0.65	
Cover			0.001	0.76	
Motor unit			0.002	-	
Gas heaters	150,000	77,624	0.015	0.75	1,552
Body			0.010	-	
Cover & Bottom			0.005	-	
Plate cookers	-	72,879	0.035	0.75	3,401
Tray				-	
Cover				-	
Air conditioners	-	110,776	0.025	0.75	3,693
Cabinet				-	
Compressor unit				-	
Total					72,249

Notes: 1. The figures for unit consumption are based on information from GOFI and modified through interviews with major manufacturers.
2. The figures for yield are estimated by the Study Team on the basis of information from major manufacturers.

Sources: GOFI for available capacity in 1995/94
CAPMAS for actual production in 1995/94

Table 2-1-13 ACTUAL CONSUMPTION OF FLAT STEEL/HOME APPLIANCES (by Dimension)

(Unit: ton)

	Cold Rolled Sheets 900 mm < W ≦ 1,250 mm	Coated Sheets 900 mm < W ≦ 1,250 mm	Total
t ≦ 0.5 mm	7,232	0	7,232
0.5 mm < t ≦ 1.0 mm	57,858	338	58,196
1.0 mm < t ≦ 3.0 mm	0	6,164	6,164
t > 3.0 mm	657	0	657
Total	65,747	6,502	72,249

Note: Estimated by the Study Team.

2-1-6. Automobile

Automobiles include passenger cars, jeeps, microbuses, vans, minibuses, buses, light trucks, medium trucks, heavy trucks, and trailers. Table 2-1-14 lists 15 major manufacturers of automobiles with their available capacity.

There are 6 manufacturers assembling passenger cars. Their available capacity is 77,000 units. The available capacity of NASCO, General Motors, Prima, and JAC exceeds 10,000 units. Jeeps were assembled only by AAV until August 1996, when Suzuki started production. There are 3 to 5 manufacturers now operating in each product area of minibuses/vans, buses/minibuses, light trucks, medium/heavy trucks, and trailers. For each of jeeps, microbuses/vans, buses/minibuses, and light trucks, the available capacity is more than 10,000 units .

Table 2-1-15 shows the production of automobiles. It seems low compared to their available capacity, except for light trucks. Production of passenger cars, for example, was only 29.3% of the available capacity in 1995/1994.

Table 2-1-16 estimates the actual consumption volume of flat steel on the basis of the actual production units of automobiles in 1995/1994. The consumption volume of flat steel per unit for each product or component is based on information from GOFI and modified on the basis of interview surveys at major manufacturers. The Study Team also estimates the yield rates in processing flat steel, using figures from major manufacturers as a basis.

As a result, total consumption of flat steel is estimated at 31,814 tons. Light trucks consume some 15,000 tons, accounting for 46.6% of the total. Nearly 10,000 tons are consumed for minibuses/buses and microbuses/vans.

Table 2-1-17 classifies the actual consumption volume in terms of materials and thickness. Hot rolled sheets consumption is 21,460 tons, accounting for 67.5%, while cold rolled sheets are consumed 10,328 tons, 32.5% of the total. Sixty-two percent of hot rolled sheets are 3.0mm to 4.75mm thick. They are widely used, for passenger cars to medium and heavy trucks. Hot rolled sheets with 4.75mm to 12.0mm in thickness, accounting for 31% of the total, are consumed for buses/minibuses, light trucks, medium & heavy trucks, and trailers. On the other hand, 92% of cold rolled sheets are 1.0mm to 3.0mm thick. They are consumed for buses/vans and trucks of all sorts.

Table 2-1-14 AVAILABLE CAPACITY OF MAJOR MANUFACTURERS/AUTOMOBILES (by Product)

(Units)

No.	Company Name	Passenger cars	Jeeps	Microbuses/Vans	Buses/Minibuses	Light Trucks	Med-Heavy Trucks	Trailers
1	El-Nasr Automotive Manufacturing Co. (NASCO)	8,211			3,150	2,500	2,500	
2	The Egyptian Company for Manufacturing Light Transport Vehicles			5,600		2,000		
3	Ghabbour Bros.				3,025			
4	General Motors Egypt	13,500		3,000		4,500	2,000	
5	Suzuki Egypt	8,000	2,000	9,000	3,000	2,500	2,000	
6	Prima for Engineering Industries	10,000						300
7	Egyptian Company for Auto-Industries (JAC)	25,000						
8	Arab American Vehicles Company (AAV)		10,000					
9	Peugeot Egypt	3,000						
10	Egypt Company for Engineering & Tools (Micar)				4,000			300
11	Misr Company for Trailer Manufacturing (Abaza - Langendorf)							200
12	Gorica Misr Group				3,100			244
13	Helwan Transport Preparations							
14	MCV Egypt						2,000	
15	International Manufacturing Company (Hassan Yousif)							300
Total		67,711	12,000	17,600	16,275	11,500	8,500	1,344

Source: GOFI

Table 2-1-15 PRODUCTION OF AUTOMOBILES

(Unit: units, 1,000LE)

Items	1991/90		1992/91		1993/92		1994/93		1995/94	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
Cars (1,000 - 2,000cc)	7,663	124,389	6,276	171,073	3,759	149,685	4,512	192,893	19,872	923,336
Microbuses/ Minibuses	157	12,244	458	23,305	1,099	49,981	2,564	138,813	3,266	193,133
Buses	1,056	163,468	1,098	197,341	569	142,474	490	123,491	720	212,921
Lorries	1,102	76,852	1,529	163,611	1,121	154,772	1,332	152,275	1,202	170,371
Pickups & Vans	1,215	20,243	6,930	198,558	10,415	344,245	11,319	398,028	11,346	672,033

Source: CAPMAS

Table 2-1-16 CONSUMPTION OF FLAT STEEL FOR AUTOMOBILE PRODUCTION

	Available Capacity in 1995/94 (Units)	Actual Production in 1995/94 (Units)	Unit Consumption (Tons)	Yield	Estimated Consumption of Flat Steel Volume in 1995/94 (Tons)
Passenger cars	77,000	19,872	0.090		3,016
Fuel tank			0.025	0.65	764
Exhaust system			0.015	0.50	596
Other			0.050	0.60	1,656
Jeeps	12,000	2,000	0.220		747
Exhaust system			0.020	0.50	80
Other			0.200	0.60	667
Microbuses/Vans	17,600	1,960	1.100		3,131
Body			1.000	0.70	2,800
Fuel tank			0.030	0.65	90
Exhaust system			0.020	0.50	78
Other			0.050	0.60	163
Minibuses/Buses	16,275	2,026	2.175		6,371
Body			2.000	0.70	5,789
Fuel tank			0.100	0.65	312
Exhaust system			0.025	0.50	101
Other			0.050	0.60	169
Light trucks	11,500	11,346	0.895		14,029
Body			0.800	0.70	12,967
Fuel tank			0.020	0.65	349
Exhaust system			0.025	0.50	567
Other			0.050	0.60	946
Medium/Heavy trucks	8,500	1,202	1.180		2,074
Body			1.000	0.70	1,717
Fuel tank			0.100	0.65	185
Exhaust system			0.030	0.50	72
Other			0.050	0.60	100
Trailers	1,344	1,000	1.300		1,646
Body			1.250	0.80	1,563
Other			0.050	0.60	83
Total					31,814

Notes: 1. The figures for unit consumption are based on information from GOFI and modified through interviews with major manufacturers.
2. The figures for yield are estimated by the Study Team on the basis of information from major manufacturers.

Sources: GOFI for available capacity in 1995/94
CAPMAS for actual production in 1995/94

Table 2-1-17-1 ACTUAL CONSUMPTION OF FLAT STEEL/AUTOMOBILES (by Thickness)

	Production Units	Hot rolled sheet						Cold rolled sheet				Total
		<3mm		3mm < t < 4.75mm		4.75mm < t < 12mm		0.5mm < t < 1.0mm		1.0mm < t < 3.0mm		
		Unit Consumption	Tons	Unit Consumption	Tons	Unit Consumption	Tons	Unit Consumption	Tons	Unit Consumption	Tons	
Passenger cars	19,872	0.03	596.16	0.083	1,649.38	-	-	0.038	755.14	-	-	3,000.67
Jeeps	2,000	0.04	80.00	0.333	666.00	-	-	-	-	-	-	746.00
Microbuses/Vans	1,960	0.04	78.40	0.083	162.68	-	-	0.046	90.16	1.428	2,798.88	3,130.12
Minibuses/Buses	2,026	0.05	101.30	0.654	1,325.00	0.858	1,738.31	-	-	1.582	3,205.13	6,369.74
Light trucks	11,346	0.05	567.30	0.769	8,725.07	0.229	2,598.23	-	-	0.26	2,949.96	14,840.57
Medium trucks	1,202	0.06	72.12	0.583	700.77	0.643	772.89	-	-	0.44	528.88	2,074.65
Trailers	1,000	-	-	0.063	63.00	1.563	1,563.00	-	-	-	-	1,626.00
Total	39,406		1,495.28		13,291.90		6,672.43		845.30		9,482.85	31,787.76
		Hot Rolled Sheets 21,459.61 (67.5%)						Cold Rolled Sheets 10,328.15 (32.5%)				

Table 2-1-17-2

(Unit: ton)

	Hot rolled	Cold rolled	Total
t≦3mm	1,495.28	10,328.15	11,823.43
3mm<t≦24mm	19,964.33		19,964.33
t>24mm	0.00		0.00
Total	21,459.61	10,328.15	31,787.76

Note: Estimated by the Study Team

2-1-7. Food Cans

Canned food products include processed food, ghee, milk and dairy products, and there are major 10 companies in operation as listed below. Asterisks denote companies visited. In 1994/95, the industry consumed 17,279 tons of flat steel products, of which 9,029 tons were tin plates, 6,500 tons galvanized sheet, 1,750 tons oxidized and polished sheet (see Table 2-1-18).

No.	Company Name	Products
1*	El-Nasr Canned Food (Kaha)	Processed food
2*	Edfina	Processed food
3*	Alexandria Oil & Soap	Ghee
4	Egypt for Oil & Soap	Ghee
5	Egyptian Salt & Soda	Ghee
6	El-Nile Oil & Detergents	Ghee
7	Tanta Oil & Soap	Ghee
8	Extracted Oil	Ghee
9	Cairo Oil & Soap	Ghee
10	Misr Dairy Food & Stuffs	Milk & Dairy products

Source: Field survey

Table 2-1-18 FOOD CANS

ACTUAL CONSUMPTION

	Actual Consumption Volume in 1995/94 (Tons)
Tin plate	9,029
Galvanized sheets	6,500
Oxidized, polished sheets	1,750
Total	17,279

Source: Field survey

IMPORT OF TINPLATES

(Unit: Tons)

Year	1990	1991	1992	1993	1994	1995	1996(est.)
Imports tinplate	46,000	46,000	47,000	16,190	5,030	9,029	12,000

Source: GOFI and Tinplate Committee

2-1-8. Steel Furniture

There are 6 metallic furniture manufacturers who consumed an estimated 50,000 tons of flat steel products in 1995 (see Table 2-1-19). One (asterisk) was visited.

No.	Company Name	Products
1	Industrial Delta (IDIAL)	Furniture
2*	Metallic Furnitures for Houses & Offices (MOHM)	Furniture
3	El Entriar Factory for Metallic Furniture	Furniture
4	Talat for Manufacturing of Washes & Metallic Furnitures	Furniture
5	Islamic Co. for Engineering Preparations	Furniture
6	Kontinenter - International for Manufacturing & Investment	Furniture

Source: Field survey

Table 2-1-19 METAL FURNITURE

ACTUAL CONSUMPTION

	Actual Consumption Volume in 1995/94 (Tons)
Cold rolled sheets	50,000
Total	50,000

Note: Estimated by the Study Team

2-1-9. Boiler, Pressure Vessels and Heat Exchangers

Consumption figures are based on the information from Babcock & Wilcox Egypt S.A.E.

The company's products, consumption of flat rolled sheet/plate and it's share of each products in Egypt are shown on Table 2-1-20, and estimated consumption mix of the sector in Egypt shown on Table 2-1-21.

Table 2-1-20 CONSUMPTION AND SHARE IN EGYPT OF FLAT ROLLED SHEET OF BABCOCK & WILCOX EGYPT

	consumption of flat rolled sheet	share (%)	Assumed consumption of flat rolled sheet in Egypt
a) Pressure parts for utility boilers	-(only tubes)	100	
b) Industrial water tube boilers	550ton/year	80	690ton/year
c) Pressure vessels	200ton/year	30	660ton/year
d) Heat exchanger			
		Total	1,350ton/year

source: Field survey

Table 2-1-21 CONSUMPTION MIX OF BOILER, PRESSURE VESSELS, HEAT EXCHANGER SECTOR

By Dimension (1) (Unit: ton/year)

Width(mm) Thick.(mm)	w≤600	600<w ≤1000	1000<w ≤1220	1220<w ≤1500	1500<w ≤2000	2000<w ≤2500	2500<w ≤3150	3150<w ≤4000	4000<w	Total
3<t≤6							175			175
6<t≤8										
8<t≤16					500		30			530
16<t≤24					330					330
24<t≤40						150	135	30		315
40<t≤63										
63<t≤100										
100<t≤160										
160<t										
Total					830	150	340	30		1,350

Source: Field survey

By Dimension (2) (Unit: ton/year)

	>1,500mm
3mm≧t	0
3mm<t≦24mm	1,035
t<24mm	315
Total	1,350

Note: Calculated figures of the above table.

2-1-10. Railway Vehicle

SEMAF (The General Egyptian Company For Railway Wagon & Coaches) is sole manufacturer of wagons, coaches and underground trains in Egypt. The company's consumption of flat rolled sheets/plates is shown in Table 2-1-22.

Table 2-1-22 CONSUMPTION MIX OF RAILWAY VEHICLE SECTOR

By Dimension (1) (Unit: ton/year)

Width(mm) / Thick.(mm)	w≤600	600<w ≤1000	1000<w ≤1220	1220<w ≤1500	1500<w ≤2000	2000<w ≤2500	2500<w ≤3150	3150<w ≤4000	4000<w	Total
3≥t		500								500
3<t≤6		508								508
6<t≤8		1,290		475						1,765
8<t≤16		1,568		324						1,892
16<t≤24				1,159						1,159
24<t≤40				191						191
40<t≤63		10		278						288
63<t≤100		10		16						26
100<t≤160				9						9
160<t										
Total		3,886		2,452						6,338

Source: Field survey

By Dimension (2) (Unit: ton/year)

	>1,500mm
3mm≥t	500
3mm<t≤24mm	5,324
t<24mm	514
Total	6,338

Note: Calculated figures of the above table.

2-1-11. Gas Cylinder

Consumption Figures are based on the information from Union-Co. For Gas Bottles Manufacturing & Metal Processing.

The company's products, consumption of flat rolled sheet and it's share of each products in Egypt are shown on Table 2-1-23, and estimated consumption mix of the sector in Egypt is shown in Table 2-1-24.

Table 2-1-23 CONSUMPTION OF FLAT ROLLED SHEET AND SHARE IN EGYPT OF UNION CO.

	Production/month	Weight/ unit	Total net consumption	Yield	Consumption of sheet	Share	Total in Egypt
a) 30 l bottles	30,000units	18.5kg	555(ton/month)	0.75	740ton/month	1/3	2,220ton/month
b) 60 l bottles	15,000units	31 kg	465(ton/month)	0.75	620ton/month	1/3	1,860ton/month
						Total	4,080ton/month
							= 48,960ton/year

Source: Field survey

Table 2-1-24 CONSUMPTION MIX OF PUBLIC WELFARE (GAS BOTTLES)

(Unit: ton/year)

Width(mm) / Thick.(mm)	w≤600	600<w ≤1000	1000<w ≤1220	1220<w ≤1500	1500<w ≤2000	2000<w ≤2500	2500<w ≤3150	3150<w ≤4000	4000<w	Total
3<t≤6			48,960							48,960
6<t≤8										
8<t≤16										
16<t≤24										
24<t≤40										
40<t≤63										
63<t≤100										
100<t≤160										
160<t										
Total			48,960							48,960

Source: Field survey

2-1-12. Metal Container

GOFI informed the activity of the Canal Naval Constructions Co. which is producing metal container capacities 20 and 40 feets. The company consumed corrugated sheet 13,500 ton and steel sheet 23,500 ton.

Table 2-1-25 METAL CONTAINER

1. Corrugated sheet - steel 37

Thickness	Quantity (tons)
2mm	7,000
1.5mm	6,500
Total	13,500

2. Steel sheet - steel 52

Thickness	Quantity (tons)
4mm	6,000
5mm	2,000
6mm	2,000
Total	10,000
Ground Total	23,500

Source: Field survey

2-1-13. Other Governmental Companies

GOFI informed the consumption of flat steel of other Governmental Companies on 30th Sept., 1996

Table 2-1-26 OTHER GOVERNMENT COMPANIES CONSUMPTION

1. Hot Rolled (Unit: ton)

Thickness	Year	
	1995/96	2005
t≦3mm	1,000	3,500
3mm<t≦24mm	21,700	32,000
t>24mm	300	500
Total	23,000	36,000

2. Cold Rolled (Unit: ton)

Thickness	Year	
	1995/96	2005
t≦3mm	3,000	7,500
t>3mm	200	500
Total	3,200	8,000

3. Total Hot Rolled + Cold Rolled (Unit: ton)

Thickness	Year	
	1995/96	2005
t≦3mm	4,000	11,000
3mm<t≦24mm	21,900	32,500
t>24mm	300	500
Total	26,200	44,000

Source: GOFI

2-1-14. Others

The difference between apparent consumption and total of individual sectors consumption is assumed as the consumption of remained section.

2-2. Existing Production Facilities for Steel Flat Products in Egypt

2-2-1. Summary

- In Egypt, there is only one flat steel manufacturer, Egyptian Iron & Steel Co. (EISCO or HADISOLB). The company has its own mines, and uses its own iron ore and coke purchased from another company to produce pig iron at 4 blast furnaces. The production lines consist of E.A.F., P.I casting, and an L.D. steel shop, followed by blooming mill, slab caster, billet caster, and plate mill, heavy sec mill, medium sec mill, light sec mill, hot strip mill, cold strip mill, and surface treatment plant.
- As for plate products, the plate mill produced 84,652 tons of plate in 1993/94. The hot strip mill had production capacity of 480,000 tons in 1993/94 and actually rolled 419,829 tons of slabs and 261,170 tons of hot rolled products. Also, 144,380 tons of cold rolled products, 10,367 tons of light section steel and 5,781 tons of checkered plate were produced. The capacity of hot strip mill was boosted to 579,000 tons (600,000 tons as slab) in April 1996. On the other hand, production of checkered plates, galvanized steel and tin plates were very small compared to capacity.
- The company underwent many difficulties by transformation from centrally planned economy to market economy in recent years under the transition from a central planning economy to a market economy. In addition to having to use poor ore grades, carrying the border of excessive employment, making high interest payments due to massive loans made in the past, and having a limitation in the form of limited width (1 meter) of the hot strip mill, the company has had to take drastic measures to improve the situation, such as reduction of debt and improvement of the effectiveness investment for improvement of production and quality.

2-2-2. Major Facilities Related to Flat Steel Products

Iron Making
Iron ore : El Gedida mines, Limestone : Beni-Khalid
Coke : Al-Nasr coke works
Sintering plant : 2 x 50m^3, 5 x 75m^3
Blast furnace : 2 x 575 m^3, 2 x 1,033m^3, (scheduled to be expanded to 1,200m^3 by 1999)

Steel Making
Converter : 3 x 80t/heat, electric arc furnace : 2 x 12t/heat
Continuous caster :3 x 2 strand for slab (150/200 x 530/1,050 x 4,300/6000)
1 x 1 strand for slab (170/250 x 1,600/600.....estimated by the Study Team)

3 x 6 strand for billet (140/140 to 200/200 x 3,600/6,000)
1 x 2hi blooming mill (140/140 to 225/225 for billet and 80/170 x 500mm width for plate)

Rolling Mills

For sections : 1 x 2hi heavy section mill (100/150mm equal & unequal angles, 120/260mm channels, 90/125mm rounds, 80/125mm squares, 140/260mm NP beams, 140/200mm H beams, 40/400mm PE beams, 18/50kg/m rail, fish plates, sleepers & others.

1 x medium section mill (1 x 2hi roughing stand, 8 x 2hi finishing stand, structural shape up to 120mm, 150mm squares, up to 80mm rounds, equal & unequal angles and others.

1 x Light section mill (3hi roughing stand, 4 stand intermediate mill, 4 finishing stand, 13/19mm rounds, 30/50mm equal angles.

For flat rolled

Plate mill : 1 x 3hi mill (750/600/750mm roll diameter x 1,850mm barrel, mill motor 1,850kw, 60rpm. F'ce: 1 x 15t/hr, 1 x 22t/hr, Slab: 120/170mm thick x 450/1,000 wide x 950/1,600 long, Product : 8/100mm thick x 1,250/1500 wide x 3, 6 & 9m.

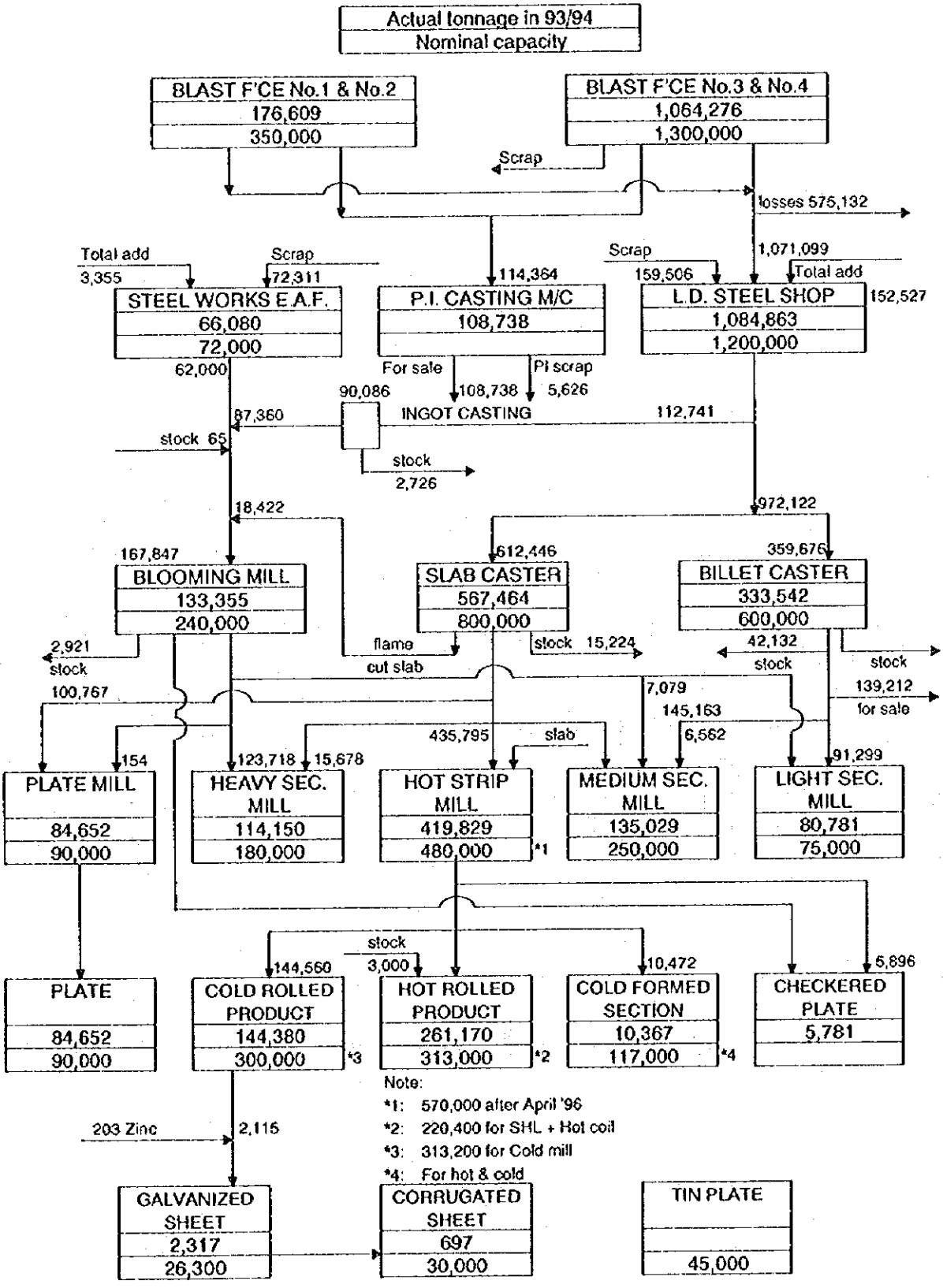
Hot strip mill : Slab : 120/200mm thick x 500/1,050mm wide x 3/6m long, Product : 2/8mm thick x 500/1,050mm wide x 3.5/7.5 ton/coil, F'ce : 2 x 100 ton/hr., Vertical scale breaker, 1 x 1,100mm ϕ x 1,200mm barrel 2hi, AC 4,000kw, reversing rougher, crop shear, FSB, 6 x 620 & 1,200mm ϕ x 1,200mm barrel, AC 4,000kw, 4hi finisher and 3 x down coiler

Cold strip mill : Hot coil : 2.0/4.0mm thick x 500/1,050mm wide x 7/15 t/coil, Product : 0.22/2.5mm thick x 500/1,050mm wide 7/15t/coil 2 x 520 & 1,300mm ϕ x 1,200mm barrel, 2 x DC 2,300kw, 4hi reversing mill, 1 x 520 & 1,300mm ϕ x 1,200mm barrel, 2 x DC 1,100kw, 4hi reversing type temper mill.

Processing Lines : 1,200mm pickling line, 1,260mm electrolytic cleaning line, 2 x 1,200mm Slitting line (1 line for 0.5/2.5mm thick and 1 line for 0.25/1.0mm thick), 2 x 1,200mm shearing line (1 line for 0.5/2.5mm thick and 1 line for 0.2/0.80mm thick), 1 x combination shearing & slitting line for hot rolled coils of 2.0/7.0mm thick x 1,050mm wide. 1 x sheet corrugator (1.0mm thick x 2,000mm wide), 1 x hot dip type galvanizing equipment, 6 x hot dip type tinning equipment, 1 x cold forming line for cold formed angles, channels & other shapes in cold rolled gauges of 1.0/2.5mm and hot rolled gauges of 2.0/6.0mm in material width of 75/500mm, 27 bell type annealing furnace.

Figure 2-2-1 PROCESS & MATERIAL FLOW

tonnes/year



Source: EGITALEC

2-3. Production Mix and Main Specification of EISCO

1) Plate

Steel grade : DIN 17100 ST-37, ST-34, ST-50 & ST-52

Product size : 8.0/100mm thick x 1,250/1,500mm wide x 3.6 & 9m long

2) Hot rolled sheet & coil

Steel grade : DIN 1614 & 1623, ST-33, ST-37 & ST-44

ST-37 : 89%, ST-44 : 10%, ST-33 : 1%

Product size mix (%)

Width (mm) / Thickness (mm)	w < 600	600 ≦ w < 900	900 ≦ w ≦ 1,050
t < 3.0		2.5	43
3.0 ≦ t < 4.75		1.5	38
4.75 ≦ t < 8.00			15

Source: EGITALEC

3) Cold rolled sheet & coil

Steel grade : DIN 1614, ST-12 & ST-13

ST-12 : 50%, ST-13 : 50%

Product size mix (%)

Width (mm) / Thickness (mm)	w < 600	600 ≦ w < 900	900 ≦ w ≦ 1,050
t < 0.5			3
0.5 ≦ t < 1.0			51
1.0 ≦ t < 3.0			46
t ≧ 3.0			0

Source: EGITALEC

4) Cold formed section

Steel grade : DIN 1614, ST-37

Product size : 3.6/6.0mm thick x 40, 50, 7mm equal channel : 10%

3.0/6.0mm thick x f40/40 x 40/60mm unequal channel : 90%

5) Galvanized sheet

Steel grade : DIN 1514/1975, GOST 3680/1957

Product size : 0.5/1.5mm thick x 640/835mm wide x1,420/2,000mm long

2-4. Past Production Trends

2-4-1. Summary

According to information furnished by EISCO and EGITALEC, EISCO's production trends between 1988/89 and 1994/95 are as follows:

- Plate production: 80,158 tons~88,146 tons, for nominal capacity of 90,000 tons/y.
- Hot rolled products: Consistently increased yearly with wide fluctuation between 200,000 tons/y and 290,000 tons/y, for nominal capacity of 313,000 tons/y.
- Cold rolled products: Yearly variation ranging between 110,000 tons/y and 165,000 tons/y, for nominal capacity of 300,000 tons/y.
- Cold formed sections: Ranging between 9,659 tons and 13,657 tons, for nominal capacity of 117,000 tons/y.
- Galvanized sheet: Ranging between 916 tons and 8,179 tons/y for nominal capacity of 26,300 tons/y, declining yearly to below 1,000 tons/y in 1994/95.

2-4-2. Actual Production

PRODUCTION ACHIEVEMENT IN TONS

(Unit: ton)

Year	Plate	Hot rolled product	Cold rolled product	Cold formed section	Galvanized sheet	Total
88/89	84,723	197,911	124,101	13,657	4,708	425,100
89/90	87,651	208,027	110,676	9,659	6,238	422,251
90/91	82,916	241,638	142,142	13,311	8,179	488,186
91/92	80,158	221,505	165,324	10,218	6,602	483,807
92/93	88,146	248,562	115,018	11,606	3,064	466,396
93/94	84,652	261,170	133,903	10,367	2,317	492,409
94/95	83,332	289,072	160,863	12,573	916	546,756

Source: EGITALEC

Production other than flat steel in 1993/94 is summarized as follows.

	Nominal Capacity (tons)	Production (tons)
Heavy section steel	180,000	114,150
Medium section steel	250,000	135,029
Light section steel	75,000	80,781

Source: EGITALEC

(Unit: ton)

	88/89	89/90	90/91	92/93
EISCO plate + Hot rolled + Cold rolled	406,735	406,354	466,696	451,726
IISI total flat	514,000	600,000	422,000	516,000

Source: EGITALEC

2-5. Import and Export

2-5-1. Summary

Import and export data for 1991 through 1995 were obtained from CAPMAS, but continuity is questionable due to a major change in classification of products, and CAPMAS system modification.

Especially difficult to otherwise explain is the drastic change of hot rolled coils and sheet imports from 56,388 tons in 1994 to 201,038 tons in 1995. Therefore the calculation were made based on the following adjustment. [56,388 + 201,038] x 1/2 = 128,713 ton for both 1994 and 1995.

2-5-2. Import and Export Statistics

Import and export statistics of flat rolled products and welded pipes from 1991 to 1995 collected from CAPMAS are shown in the following table.

ITEMS \ YEAR	1991	1992	1993	1994	1995
FLAT ROLLED PRODUCTS (x10^3 tons)					
IMPORT	217	177	180	254	325
TIN PLATE (imported turned out lately)	46	47	57	-	-
TOTAL ①	263	224	237	254	325
EXPORT ②	29	72	51	24	38
NET IMPORT [① - ②]	234	152	186	230	287
CLASSIFICATION INTO STEEL TYPE					
PLATE	61	33	42		
w ≤ 1,500 mm				120	103
w > 1,500 mm					
HOT ROLLED	42	24	29		
w < 600					
600 ≤ w < 1,000					
1,000 ≤ w < 1,250					
1,250 ≤ w < 1,500					
w > 1,500					
COLD ROLLED	28	16	20	21	125
w < 600					
600 ≤ w < 1,000					
1,000 ≤ w < 1,250					
1,250 ≤ w < 1,500					
w > 1,500					
COATED	103	79	95	89	59
w < 600					
600 ≤ w < 1,000					
1,000 ≤ w < 1,250					
w > 1,250					
WELDED PIPES					
IMPORT ①	63	40	32	35	44
EXPORT ②	25	15	9	2	3
NET IMPORT [① - ②]	38	25	23	33	41

Source: CAPMAS

2-5-3. Net Imports

Net imports of flat rolled products in 1994 and 1995 are shown in the following tables.

1994 (Unit: ton/year)

Thickness (mm)	Import	Export	Net Import
Plate & Hot			
t ≦ 3.0	4,587	600	3,987
t > 3.0	137,095	20,489	116,606
Sub total	141,682	21,089	120,593
Cold			
t ≦ 3.0	23,064	2,228	20,836
Coated			
t ≦ 3.0	89,123	254	88,869
Total	253,869	23,571	230,298

Note: Estimated by the Study Team

1995 (Unit: ton/year)

Thickness (mm)	Import	Export	Net Import
Plate & Hot			
① t ≦ 3.0	47,294	37,437	9,857
② t > 3.0	93,928	271	93,657
Sub total	141,222	37,708	103,514
Cold			
③ t ≦ 3.0	116,815	0	116,815
④ t > 3.0	8,215	0	8,215
Sub total	125,030	0	125,030
① + ③			126,672
② + ④			101,872
Coated			
t ≦ 3.0	58,615	0	58,615
Total	324,867	37,708	287,159

Note: Estimated by the Study Team

2-6. Tendency of Sales Price of Steel Flat Products

2-6-1. Summary

At present, Egypt pursues general economic policies based on the market mechanism and thus prices of steel materials are governed by the international market.

Egypt imposes a 10 - 30% tariff on imported steel materials except for those imported from certain countries (including Saudi Arabia and Libya). In addition to import duties, related costs and expenses amount to sales tax of 10%, service tax 3%, with-holding tax of 1% and miscellaneous service tax of 2%. Importers of steel materials have to pay 36% (in case of 20% tariff) extra in all. Note that the prices to be determined under the present study are not purchase prices of customers, but ex-factory prices.

In this case, if the factory mainly serves the domestic market, the import price plus 10 - 30% is considered to be a plausible price level.

At present, world steel material prices fluctuate significantly according to constantly changing supply and demand conditions and also there is some range according to the specification of flat.

2-6-2. Prices Based on Import Statistics

Among steel product imports in Egypt, the unit prices are calculated from import statistics on iron and steel, universal plates and sheets (see Table 2-6-1).

2-6-3. Prices Quoted In Metal Bulletin

The recent price of flat steel is mentioned in Metal Bulletin (see Table 2-6-3).

2-6-4. Users Price

Unit prices of hot rolled products at welded pipeline factories are mentioned in Table 2-6-2.

Table 2-6-1 IMPORTS OF STEEL PRODUCTS IN EGYPT

Egypt

	Code	Commodity	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
Unit Value (US$/ton)													
	674	IRN, STL UNIV, PLATE, SHEET	464	420	432	569	641	856	661	602	559	591	571
	6744	IRN, STL HVY PLATES, ROLLED	443	297									
	67441	-OF IRON OR SIMPLE STL	443	297									
	6747	TINNED PLATES, SHEETS	527	654									608
	6749	OTH IRN, STL PLATES, SHEET	479	460	502	584	651	905	660	609	559	591	494
	67491	-OF IRON OR SIMPLE STL	451	419	515	508	622	763	561	504	492	503	468
	67492	-OF HIGH CARBON STEEL	630	1,052	470	936	935	1,729	1,796	1,557	969	1,328	
Volume (1,000 ton)													
	674	IRN, STL UNIV, PLATE, SHEET	291.3	328.9	206.4	195.9	256.4	143.0	252.2	256.7	246.8	264.5	181.1
	6744	IRN, STL HVY PLATES, ROLLED	160.9	146.6	78.2	5.2	6.9						
	67441	-OF IRON OR SIMPLE STL	160.9	146.6	78.2	5.2	6.9						
	6747	TINNED PLATES, SHEETS	27.9	55.6	31.6	35.3	26.3						50.0
	6749	OTH IRN, STL PLATES, SHEET	102.1	126.5	95.0	155.0	222.8	110.6	215.2	249.7	245.2	264.5	59.4
	67491	-OF IRON OR SIMPLE STL	86.3	118.4	66.4	127.2	202.4	94.4	197.9	225.1	213.3	235.5	44.2
	67492	-OF HIGH CARBON STEEL	15.8	8.2	28.7	27.7	20.5	16.2	17.3	23.7	30.4	26.8	
Value (million US$)													
	674	IRN, STL UNIV, PLATE, SHEET	135.1	138.2	89.3	111.5	164.3	122.4	166.7	154.6	138.0	156.4	103.5
	6744	IRN, STL HVY PLATES, ROLLED	71.3	43.6									
	67441	-OF IRON OR SIMPLE STL	71.3	43.6									
	6747	TINNED PLATES, SHEETS	14.7	36.4									30.4
	6749	OTH IRN, STL PLATES, SHEET	48.9	58.2	47.7	90.6	145.1	100.1	142.1	152.1	137.0	156.4	29.3
	67491	-OF IRON OR SIMPLE STL	38.9	49.6	34.2	64.6	126.0	72.0	110.9	113.5	105.0	118.4	20.7
	67492	-OF HIGH CARBON STEEL	10.0	8.6	13.5	26.0	19.1	28.0	31.2	36.9	29.4	35.6	

Sources: UN International Trade Statistics Yearbook 1993 and 1994

Table 2-6-2 PRICES OF STEEL COIL IN WELDED PIPE COMPANY

	Quantity in tons	Price in L.E.	Unit Value in L.E.	Unit Value US$
Imported steel coils	34,037	45,446,151	1335.2	393.6
Local steel coils	63,594	69,471,975	1092.4	322.1

Source: Field survey

Table 2-6-3 WORLD STEEL PRICES

(Unit: US$/ton)

West Europe		Brussels		Black Sea/Baltic Sea		Far East	
Reinforcing rounds	265 - 280	Rebars plain	220 - 230	Pig iron	135 - 140	Pig iron	nom
Merchant bars	295 - 305	Merchant bars	240 - 250	Billets	190 - 200	Billets	210 - 215
Wire rod (mesh)	265 - 275	Wire rods	250 - 260	Rebars	226 - 230	Rebars	235 - 240
Wire rod (drawing)	275 - 300	Heavy sections	340 - 350	Merchant bars	245 - 250nom	Merchant bars	245 - 250nom
Sections (300 - 600mm)	385 - 400	Hot coil	300 - 320	Wire rods (mesh)	223 - 227	Wire rods (mesh)	235 - 240
Sections (over 600mm)	470 - 500	Heavy plates	430 - 450	Sections	nom	Sections	300 - 325
Heavy plates Over 10mm	430 - 440	CR coil	400 - 420	Slab	180 - 195	Slab	210 - 215
Medium plates 3 - 10mm (strip mill)	350 - 380	Galvanized sheets	530 - 550	Heavy plates (10 - 50mm)	230 - 235	Heavy plates (10 - 50mm)	250 - 255
Universal plates	nom			HR coil	215 - 245	HR coil	230 - 255
Chequer plates	nom			CR coil	315 - 335	CR coil	340 - 355
HR coil (dry)	270 - 290						
CR coil	370 - 390						
Galvanized coils	430 - 480						
Electro-zinc coils	600 - 630						

Source: Metal Bulletin

Chapter 3

STUDY ON THE CONDITIONS OF NEIGHBORING COUNTRIES

3. STUDY ON THE CONDITIONS OF NEIGHBORING COUNTRIES

3-0. Summary

- In the Minutes of Meeting on December 20, 1995, GOFI requested the Study Team to carry out a demand survey on several neighboring countries of Egypt. They included Algeria, Libya, Saudi Arabia, Iran, Turkey and Palestine.
- In this study, Palestine is excluded due to a lack of data. Spain, France, Italy, India, Thailand, Rep. of Korea and Japan are added instead.
- Spain, France and Italy faced on Mediterranean Sea of EU and Turkey joined the EU tariff union have big capacities and are importing a lot of flat steel but also exporting.
- EU countries have been strengthening to maintain the survival of steel plant and controlling production and import.
- Egypt, Iran, Saudi Arabia and Libya are importing large quantities of flat steel after the above countries and they have the plan to expand and or newly install the plant for making steel.
- The other countries are importing a small amount of flat steel.

3-1. Existing Steel Flat Production Facilities in Neighboring Countries

See Table 3-1 Capacity of Steel Mill in Neighboring Countries and Table 3-2 Crude Steel Capacity by Plant.

3-2. Past Production in Neighboring Countries

See Table 3-3 Production of Flat Steel Products in the World; for plates over 4.75mm, cold-reduced hoop and strip and hot-rolled hoop and strip.

3-3. Product Type and Quantity of Import in Neighboring Countries

See Table 3-4 Imports/Exports of Steel Universals, Plates and Sheets.

3-4. Past Export of Steel Flat Products by Neighboring Countries

See Table 3-4.

3-5. Future Plans in the Region for Steel Flat Production

See Tables 3-1 and 3-2.

Table 3-1 CAPACITY OF STEEL MILL IN NEIGHBORING COUNTRIES

(Unit: 1,000 tons)

	Steel				Sheets					Welded Pipe	Remarks	Plates	Arc-welded Pipes	Remarks
	Capacity of Steel Industry (1995)	Production Amount of Crude Steel (1994)	Plan in Future (~2000)	Remarks	Hot Mill	Cold Mill	G.I.C	Zinc Galvanization	Other Surface Treatment					
Iran	5,800	4,500	+2,100~3,100	Objective in end of 1996	2600 *1 (+1,000)	1,000		300 (+α)	(+α)		*1 Estimate	800	500	
Saudi Arabia	2,600	2,410	+200		 +1,090				 +250	100 +100		0	80	Small demand for plates
Algeria	2,500	810	+500	Problem of low rate of operation work	1,270	900	90	40		20		200	120	Small demand for plates
Libya	1,320	870	+α	Increase for a promise of small scale	580 +420	140		 +90				0	0	Small demand for plates
Spain	14,920	13,450	+1,000	Amount of increase for hot rolled	5,660 +970	3,730 +40	520	850 +200	90	 +350		660	0	
France	23,330	18,030			11,900 +460	7,620	1,100	2,220	900	440		1,390	290	
Italy	31,120	26,070			11,530	5,420	590	720	500	1,330		2,530	1,460	Decreasing capacity for plates
Turkey	15,000	12,070			3,500 (+580)	1,120 +1,250~1,750	100 +250	190 +120		550		100	170	
India	19,500	18,230	+2,500	TISCO Plan for establishment of Iron Mill	6,130 +13,300	2,970 +260	390	600	 *2 +160	900	*3 Silicon steel hoop	2,500 +150	20	
Thailand	2,800	1,460	(+1,500)	SIAM	1,800 +2,650	60 +2,100~2,300	420	540 +310	 +50	100 +40		400 *3 +200	0	*3 SAHAVIRIYA's expansion
Korea, Rep. of	36,000 (1995)	36,760 (1995)	+17,400	Plans for 1995-2000	17,060 +15,320	7,960 +7,750	660 +80	3,030 +3,800		3,610 +300		3,390 +2750	60	
Japan	149,820 (1995)	101,650 (1995)	+1,300	Tokyo Steel Mfg (+90), Toa Kashima (+40)	64,300	37,710 +400	1,760	15,550	950	(7,930)	Capacity of large-scale companies only	15,900	2,740	Decreasing capacity for plates Pipe capacity of four companies
Egypt	2,580	2,790	(+2,600~3,000)		350 (+300)	260	50	10		0		100	0	

Sources: Publication by The Japan Iron and Steel Federation, Japan Iron & Steel Exporter's Association, Paine Webber, ISWW, and other information

Table 3-2 CRUDE STEEL CAPACITY BY PLANT (1/3)

('000 tonnes per year at 31 December 1993)

Country/Company	Location	Steel Melting and Refining					Product	Unit Capacity	Plant Capacity		
		Open	Shut	Ref.	Size	Technology/Equipment			Elec.	BOF	Other
Algeria	*Total plants/capacity*							*3*	*664*	*1,940*	*0*
Metalsider	Arabaa	1993		No.1	40	EAF	carbon long	200	200	0	0
Sider	El Hadjar (Annaba)	1983		No.1	85	EAF (ASEA, 36MVA) + ladle furnace (1992)	carbon long	400	400	1,940	0
		1980		No.1 - 3	85	BOF (LD)	carbon flat	400			
		1981		No.4 - 6	60	BOF (LD)	carbon flat	247			
Sider	Oran			No.1 ?		induction	carbon long	64	64	0	0
Angola	*Total plants/capacity*								*30*	*0*	*0*
Siderurgia Nacional	Luanda			No.1	18	EAF (Tagliaferri)	carbon long	30	30	0	0
Egypt	*Total plants/capacity*							*5*	*1,392*	*1,200*	*233*
ANSDK - Alexandria Nat. Steel	El Dekheila	1986		No.1 - 4	70	EAF (NKK)	carbon long	238	950	0	0
Delta Steel Mills	Mostorod	1948		No.1	12	EAF	carbon long		102	0	0
		1948		No.2	18	EAF	carbon long	102			
		1975		No.3	25	EAF	carbon long				
		1984		No.4	25	EAF	carbon long				
Egyptian Copper Works	Alexandria	1972		No.1	25	EAF (modernised 1990) + LF (30t, 1993)	special long	110	120	0	147
				No.2	5	EAF	special long	10			
		1952		No.1	30	Siemens - Martin	special long	72			
		1954		No.2	50	Siemens - Martin	special long	75			
Egyptian Iron & Steel	Helwan	1958		No.1 - 2	12	EAF (USSR)	carbon long	25	50	1,200	0
		1974		No.1 - 2	80	BOF (USSR)	carbon flat	400			
		1979		No.3	80	BOF (USSR)	carbon flat	400			
			1989	No.1 - 4	17	Bessemer	carbon flat	0			

Table 3-2 CRUDE STEEL CAPACITY BY PLANT (2/3)

('000 tonnes per year at 31 December 1993)

Country/Company	Location	Steel Melting and Refining					Product	Unit Capacity	Plant Capacity		
		Open	Shut	Ref.	Size	Technology/Equipment			Elec.	BOF	Other
National Metal Industries	Abu Zaabal		1990	No.1 - 2	35	EAF converted to LF	carbon long	90	170	0	86
		1990		No.3 - 4	35	EAF (Lectromelt) + ladle furnace	carbon long	85			
		1949	1990	No.1 - 2	36	Siemens - Martin	carbon long	50			
		1990		No.3	36	Siemens - Martin	carbon long	86			
Ghana	*Total plants/capacity*							*3*	*75*	*0*	*0*
Ferro-Fabrik	?	1990		No.1	10	EAF	carbon long	15	15	0	0
Tema Steel - Gihoc	Tema			No.1	15	EAF	carbon long	35	35	0	0
				No.2	10	EAF	carbon long				
Wahoma	Tema	1990		No.1	10	EAF (Taiwan)	carbon long	25	25	0	0
Kenya	*Total plants/capacity*							*2*	*44*	*0*	*0*
Kenya United Steel	Mombasa			No.1 - 2	5	EAF	carbon long	12	24	0	0
Steel Billet Castings	Nairobi			No.1		EAF	carbon long	20	20	0	0
Libya	*Total plants/capacity*							*2*	*1,354*	*0*	*0*
Libyan Iron & Steel	Misurata	1990		No.1 - 3	90	EAF (Krupp, 54MVA)	carbon long	225	1,324	0	0
		1990		No.4 - 6	90	EAF (Krupp, 54MVA)	carbon flat	217			
State	Tripoli			No.1 - 2		EAF	carbon long	15	30	0	0
Mauritania	*Total plants/capacity*								*15*	*0*	*0*
Safa - Ste. Arabe du Fer	Nouadhibou			No.1	7	EAF (Micro)	carbon long	15	15	0	0

Table 3-2 CRUDE STEEL CAPACITY BY PLANT (3/3)

FINISHED STEEL CAPACITY PLANT - FLAT & COATED PRODUCTS

('000 tonnes per year at 31 December 1993)

Country/Company	Location	Open	Shut	Ref.	Equipment	Product	Unit Capacity	Plant Capacity					
								Slab	Plate	HRC	CRC	Galv.	Tin
Algeria	*Total plants/capacity*												
Sider	Al Hadjar (Annaba)	1978		No.1 - 2	casters (1strand Demag, 1,350mm)	CC slab	500	1,000	0	1,400	630	200	50
				No.1	hot mill	HR coil	1,400						
				No.1	cold mill	CR coil	630						
				No.1	galvanising line	HD galvanised	200						
				No.1	tinning line	tinplate	50						
Egypt													
Egyptian Iron & Steel	Helwan	1974		No.1	caster (2 strand USSR, 1,080mm)	CC slab	400	600	90	542	260	12	48
		1978		No.2	caster (2 strand USSR, 1,080mm)	CC slab	200						
				No.1	plate mill (1 stand, 1,500mm)	plate	90						
		1968		No.1	hot mill (1+6 stand, 1,200mm)	plate	542						
		1968		No.1 - 2	cold mills (2 stand, 1,200mm)	CR coil	130						
				No.1	HD galvanising line	HD galvanised	12						
				No.1	tinning line	tinplate	48						
Kenya													
Mabati Rolling Mills	Mombasa			No.1	cold mill	CR coil	48	0	0	0	48	0	0
Standard Rolling Mills	Nairobi	1989		No.1	cold mill (Salzgitter)	CR coil	50	0	0	0	50	0	0
Libya													
Libyan Iron & Steel	Misurata	1990		No.1 - 2	casters (1 strand voest, 1,600mm)	CC slab	306	611	0	580	140	0	0
		1990		No.1	hot mill (1+6 stand 25t)	HR coil	580						
		1990		No.1	cold mill (1 stand, 25t, 1,270mm)	CR coil	140						

Sources: Publication by The Japan Iron and Steel Federation, Japan Iron & Steel Exporter's Association, Paine Webber, ISWW, and other information

Table 3-3 PRODUCTION OF FLAT STEEL PRODUCTS IN THE WORLD (1/3)

(1) Plates (heavy), over 4.75mm (ISIC-based Code 3710-40)

(Unit: 1,000 ton)

	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
Africa	58	62	64	42	23	77	50	49	48	47	46
Egypt	58	62	64	42	23	77	...	...	...	...	...
America, North	6,348	7,731	7,681	6,171	5,982	5,976	6,046	6,370	6,297	6,670	7,012
Canada 1,2	1,015	1,479	1,476	1,413	1,801	...	...	...	...	...	...
Mexico	1,871	2,316	2,289	1,524	493	520	810	1,134	1,061	1,434	1,776
United States 1 (2) 3	3,462	3,936	3,916	3,234	3,688	...	...	...	...	...	...
America, South	1,675	2,301	2,729	2,426	2,271	2,702	2,648	2,378	2,483	2,638	2,569
Argentina	100	102	70	105	...	136	...	...	...	...	...
Brazil 1	1,575	2,199	2,659	2,321	2,168	2,566	2,545	2,275	2,380	2,535	2,466
Asia	16,353	18,053	17,551	15,707	17,491	19,266	19,727	14,411	14,780	14,821	15,079
China (4)	3,911	4,312	...	...	5,781	6,007	6,513	684	719	854	1,003
Hong Kong	...	...	...	...	6	...	...	...	...	...	...
Japan 5,6	10,488	11,660	12,180	10,222	9,233	...	...	...	...	...	...
Korea, Rep. of 1	1,847	1,977	2,034	2,149	2,361	2,343	2,297	2,805	3,140	3,039	3,153
Turkey	...	...	...	...	110	86	87	92	91	98	93
Europe	20,879	23,119	23,737	23,209	22,682	24,633	24,341	22,839	28,448	25,361	23,966
EEC	10,241	11,419	12,249	11,253	11,089	12,462	12,105	12,422	10,036	9,924	9,620
Belgium	1,233	1,493	1,652	1,429	1,412	1,781	1,586	1,704	1,802	...	...
Denmark 2	266	310	342	363	371	392	...	350	333	347	...
France	1,204	1,504	1,536	1,524	1,712	1,875	1,922	1,944	1,812	1,584	1,500
Germany	...	...	...	...	...	...	...	...	920	823	623
Germany (Fed. Rep.)	3,382	3,536	4,139	3,702	3,055	3,388	3,424	3,417	...	...	...
Greece 7	...	178	124	184	292	342	...	...	...	...	...
Italy	1,776	1,926	1,894	1,656	1,647	1,558	1,343	1,383	1,348	1,475	1,389
Luxembourg	137	106	...	...	...	...	...	...	...	...	...
Netherlands	171	228	207	210	157	210	253	206	211	169	52
Spain (2)	694	753	931	723	745	973	...	...	...	...	...
United Kingdom 3,8	1,301	1,385	1,318	1,356	1,582	1,837	...	...	...	...	...
EFTA	1,478	1,446	1,592	1,688	1,569	1,759	1,791	1,783	1,733	1,798	1,817
Austria	436	470	513	533	394	449	377	...	...	...	...
Finland	415	367	465	584	639	727	831	790	751	...	...
Sweden	627	609	614	571	536	...	...	...	...	...	...
East Europe	8,764	9,811	9,413	9,664	9,603	9,927	9,865	8,102	16,639	13,598	12,488
Bulgaria (1)	1,335	1,291	1,254	1,185	1,246	1,268	1,190	923	589	559	605
Czecho Rep.	-	-	-	-	-	-	-	-	811	710	...
Czechoslovakia(former)	2,000	2,051	2,091	2,176	2,286	2,295	2,388	2,279	2,107	-	-
German D.R (former) (9)	993	1,135	1,032	1,055	1,072	1,061	1,053	859	-	-	-
Hungary 1	634	714	676	742	777	787	713	703	648	803	717
Poland	1,671	1,777	1,666	1,785	1,710	1,805	1,515	1,263	920	827	859
Romania 9 (2)	2,123	2,843	2,694	2,720	2,512	2,691	2,976	2,075	1,521	1,210	1,229
Russian Federation	-	-	-	-	-	-	-	-	6,071	4,962	4,678
Slovakia	-	-	-	-	-	-	-	-	...	...	1,470
Ukraine 11	-	-	-	-	-	-	-	-	4,784	3,768	2,930
Other Europe	398	443	483	604	421	485	580	532	41	41	41
Slovenia	-	-	-	-	-	-	-	-	29	29	...
Yugoslavia, SFR	396	443	483	604	421	485	580	-	-	-	-
USSR (former)	12,943	13,590	13,249	13,875	14,089	13,442	13,511	13,511	-	-	-
Total	58,257	64,856	65,011	61,430	62,538	65,875	66,323	59,557	52,056	49,537	48,672

Sources: Industrial Commodity Statistics Yearbook, 1992 and 1993 (UN)

Notes ... Data not available.

1 Including medium plates 3 to 4.75mm thick.
2 Source: Annual Bulletin of Steel Statistics for Europe, U.N. Economic Commission of Europe
3 Shipments.
4 Heavy plates of 4mm and over.
5 Heavy plates of 6mm thick.
6 Including medium plates of high tensile steel.
7 Including hot-rolled plates and strips over 3mm.
8 13mm and over.
9 4mm and over.
10 3mm and over.
11 Over 5mm.

Table 3-3 PRODUCTION OF FLAT STEEL PRODUCTS IN THE WORLD (2/3)

(2) Hoop and strip, cold-reduced (ISIC-based Code 3710-61)

(Unit: 1,000 ton)

	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
Africa	98	79	103	94	123	118	124	115	147	169	118
Egypt	98	79	103	94	123	118	124	115	147	169	118
America, North	835	909	797	835	843	854	789	740	685	755	661
United States 1,2,(3)	835	909	797	835	843	854	789	740	685	755	...
Asia	1,219	1,365	1,509	1,623	2,175	2,821	3,542	3,692	4,247	4,294	5,211
Japan (3)	563	637	636	623	617	670	594	...	698	...	...
Korea, Rep. of	370	373	581	642	1,207	1,818	2,472	2,649	3,267	3,395	4,330
Pakistan	...	...	19	83	123	155	143	128	112	135	164
Turkey 3	...	...	...	...	228	278	333	306	280	285	260
Europe	5,202	5,458	4,913	4,954	4,919	5,471	5,602	4,893	4,747	4,295	3,388
EEC	2,968	3,401	2,988	3,042	2,987	3,554	3,719	3,507	3,408	3,329	2,671
Denmark 4	9	0	10	9	9	...	...	...	...	...	...
France 2	122	115	106	174	106	111	120	108	98	92	79
Germany	–	–	–	–	–	–	–	–	2,231	2,180	1,563
Germany (Fed. Rep.	1,679	1,784	1,732	1,762	1,790	2,094	2,201	2,148	–	–	–
Greece	175	160	...	...	...	...	...	...	...	...	...
Italy (3)	440	843	491	487	513	607	717	...	305	...	...
Luxembourg	22	23	28	33	28	26	28	28	25	31	34
Spain (3)	218	155	155	114	50	221	...	...	245	...	...
United Kingdom 2	303	321	306	303	331	328	...	...	...	...	...
EFTA	191	191	194	204	204	152	138	127	112	102	92
Austria	25	32	29	23	23	29	16	13	13	13	12
Sweden (3)	166	159	165	181	181	123	122	114	...	...	...
East Europe	1,838	1,644	1,538	1,515	1,542	1,590	1,582	1,090	1,187	847	598
Czech Rep.	–	–	–	–	–	–	–	–	...	165	153
Czechoslovakia (form	376	368	304	309	324	319	313	310	222	–	–
German D.R. (forme	...	...	...	432	449	454	452	252	–	–	–
Hungary	86	87	80	82	87	91	83	66	37	23	...
Poland	292	315	323	332	340	333	333	192	145	128	133
Romania (3)	279	323	316	360	342	393	401	270	220	149	119
Russian Federation	–	–	–	–	–	–	–	–	526	358	150
Ukraine	–	–	–	–	–	–	–	–	37	24	21
Other Europe	205	222	193	193	186	175	163	168	39	17	28
Slovenia	–	–	–	–	–	–	–	–	32	10	...
Yugoslavia	–	–	–	–	–	–	–	–	–	7	...
Yugoslavia, SFR	205	222	193	193	186	175	163	–	–	–	–
USSR (former)	516	523	536	538	567	589	583	596	–	–	–
Total	7,869	8,334	7,858	8,044	8,627	9,853	10,640	10,036	9,826	9,513	9,378

Sources: Industrial Commodity Statistics Yearbook, 1992 and 1993 (UN)

Notes ... Data not available.

1 Cold-reduced strip only.

2 Shipments.

3 Source: Annual Bulletin of Steel Statistics for Europe, U.N. Economic Commission of Europe

4 Sales.

Table 3-3 PRODUCTION OF FLAT STEEL PRODUCTS IN THE WORLD (3/3)

(3) Hoop and strip, hot-rolled (ISIC-based Code 3710-64)

(Unit: 1,000 ton)

	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
Africa	158	136	161	167	177	215	198	208	242	222	231
Egypt	158	136	161	167	177	215	198	208	242	222	231
America, North	3,504	3,885	3,549	1,330	3,663	3,107	3,107	3,107	3,107	3,107	3,107
United States 1,2,(3)	3,504	3,885	3,549	1,330	3,663	...	...	...	...	...	...
America, South	101	78	111	100	141	171	185	207	228	250	271
Argentina	101	78	111	100	141	171	...	...	...	...	...
Asia	3,713	5,607	5,817	6,281	7,205	8,254	8,260	8,487	9,938	10,901	12,330
Japan	1,350	1,422	1,833	1,837	1,855	...	...	...	...	...	...
Korea, Rep. of	...	...	3,769	4,019	4,920	6,004	5,996	6,378	7,770	8,718	10,073
Pakistan	...	16	197	397	400	476	495	339	383	392	481
Sri Lanka	25	33	18	28	30	37	32	33	48	54	39
Europe	7,941	8,620	8,085	7,980	7,982	8,729	9,035	8,051	13,292	10,735	6,949
EEC	4,460	4,614	4,009	3,798	3,684	4,212	4,132	4,025	1,387	1,448	1,201
Belgium	57	90	90	99	111	54	20	39	56	66	17
France	683	614	288	285	183	210	193	156	156	144	99
Germany (Fed. Rep.	2,100	2,150	2,085	1,998	1,961	2,180	2,391	2,310	–	–	–
Greece (3)	...	27	...	17	20	38	23	...	13	...	...
Italy	461	526	338	364	381	407	403	450	483	501	527
Luxembourg	366	373	371	301	287	323	297	278	274	262	167
Netherlands	230	229	254	257	245	283	297	261	220	195	153
Spain (3)	235	285	254	213	195	407	...	...	116	...	...
United Kingdom (3)	300	320	306	273	301	310	...	...	69	...	...
EFTA	96	92	99	109	144	111	111	126	152	419	396
Austria	...	0	0	0	0	0	0	0	...	337	319
Finland 3	51	46	48	62	70	...	...	63	40	...	...
Sweden	45	46	51	47	74	...	...	63	...	...	...
East Europe	2,306	2,338	2,365	2,447	2,495	2,471	2,484	1,847	10,966	8,071	4,560
Czechoslovakia (form	797	811	823	859	902	917	938	933	724	–	–
German D.R. (forme	439	453	468	478	466	463	485	301	–	–	–
Hungary	11	10	8	10	14	10	7	6	2	4	...
Poland	1,028	1,034	1,032	1,065	1,080	1,049	1,022	579	498	489	481
Romania (3)	31	30	34	35	33	32	32	28	13	11	48
Russian Federation	–	–	–	–	–	–	–	–	6,049	4,602	2,560
Ukraine	–	–	–	–	–	–	–	–	3,690	2,965	1,470
Other Europe	1,079	1,576	1,612	1,626	1,659	1,935	2,308	2,052	787	797	792
Croatia	–	–	–	–	–	–	–	–	57	62	...
Slovenia	–	–	–	–	–	–	–	–	99	104	...
Yugoslavia	–	–	–	–	–	–	–	–	...	631	...
Yugoslavia, SFR	1,079	1,576	1,612	1,626	1,659	1,935	2,308	–	–	–	–
USSR (former) 4	11,015	10,489	11,333	11,588	12,014	12,726	12,925	12,190	–	–	–
Oceania	2,649	2,812	2,739	2,776	2,776	2,776	2,776	2,776	2,776	2,776	2,776
Australia 4	2,649	2,812	2,739	...	...	...	...	...	...	...	...
Total	29,081	31,627	31,795	30,222	33,958	35,977	36,485	35,024	29,582	27,990	25,664

Sources: Industrial Commodity Statistics Yearbook, 1992 and 1993 (UN)

Notes ... Data not available.

1 Shipments.

2 Including welded pipes and tubing.

3 Source: Annual Bulletin of Steel Statistics for Europe, U.N. Economic Commission of Europe

4 Including cold-reduced hoop and strip.

Table 3-4 IMPORTS/EXPORTS OF STEEL UNIVERSALS, PLATES AND SHEETS (1/2)

(Unit: ton)

Country	Imports /Exports	Year	674 Total Universals, Plates & Sheets	6741 Universals	6744 Heavy Plates, Rolled	67441 of Iron or Simple Steel	6745 Med. Plates, Rolled	67454 of Iron or Simple Steel	6746 Thin Plates, Rolled	67461 of Iron or Simple Steel	67463 of Stainless etc. Steel	6747 Tinned Plates, Sheets	6749 Other Plates, Sheets	67491 of Iron or Simple Steel	67492 of High Carbon Steel
Egypt	Imports	1994	181,055									49,999	59,420	44,165	
	Exports		23,236										4,790	264	
Iran	Imports	1993	(700,000)*												
Saudi Arabia	Imports	1992	763,591	500,709	160,027										
Algeria	Imports	1994	100,924		16,674	16,571			32,897	31,155		27,012	7,635	6,752	
Libya	Imports	1991	92,539	92,539											
	Exports	1990	51,953												
Spain	Imports	1994	1,543,607						423,309				583,392	579,389	
	Exports		1,713,135		319,112				647,475	441,789	200,698		490,486	475,458	
France	Imports	1994	3,977,608						1,174,227				1,241,836	1,227,419	
	Exports		4,322,690						1,432,482	1,106,198			1,623,373	1,546,099	
Italy	Imports	1994	3,685,487						1,626,716	1,289,331			973,289	961,340	
	Exports		2,420,597												
Turkey	Imports	1994	808,367		137,927		148,451		415,253	361,669	51,052	52,239			
	Exports		105,840												
India	Imports	1994	825,011		390,367	382,758	154,091	78,887							
	Exports											112,098			
Thailand	Imports	1994	2,440,486		558,955	541,108			1,322,035	1,242,646	73,297		369,399	367,212	
Korea, RP	Imports	1994			1,000,697	981,309									
	Exports								1,890,797	1,738,592	152,197		1,031,170	1,019,209	
Japan	Imports	1994	2,462,195												
	Exports		11,358,000						4,406,582	3,767,648			3,535,717	2,855,898	

Note: * Total flat products (Source: IISI)

Sources: UN International Trade Statistics Yearbook 1994

Table 3-4 IMPORTS/EXPORTS OF STEEL UNIVERSALS, PLATES AND SHEETS (2/2)

(Unit: ton)

Country	Imports /Exports	Year	674 Total Universals, Plates & Sheets	6741 Universals	6744 Heavy Plates, Rolled	67441 of Iron or Simple Steel	6745 Med. Plates, Rolled	67454 of Iron or Simple Steel	6746 Thin Plates, Rolled	67461 of Iron or Simple Steel	67463 of Stainless etc. Steel	6747 Tinned Plates, Sheets	6749 Other Plates, Sheets	67491 of Iron or Simple Steel	67492 of High Carbon Steel
Egypt	Imports	1993	264,522										264,521	235,503	26,816
	Exports		63,501										63,301	59,118	
Iran	Imports	1993	(700,000)*												
Saudi Arabia	Imports	1990	344,459												
Algeria	Imports	1992	159,835		41,725	40,229			50,401	46,836		11,144	16,359	15,945	
Libya	Imports	1991	92,539	92,539											
	Exports	1990	51,953												
Spain	Imports	1993	1,303,863						394,321				478,412	475,923	
	Exports		1,555,716		336,434				547,788	367,235	175,684	231,439	355,721		
France	Imports	1993	3,321,148						1,072,022				973,969	955,871	
	Exports		3,801,882						1,256,624	940,931			1,449,743	1,401,510	
Italy	Imports	1993	2,859,995						1,319,348				755,378	743,981	
	Exports		2,175,252												
Turkey	Imports	1993	1,640,681		320,053		229,076		917,140	839,341	74,506	87,145			
	Exports		50,276										16,763	16,749	
India	Imports	1992	393,120		123,390	118,938	78,341	53,349	83,579	62,020			55,247	43,295	
Thailand	Imports	1993	2,352,156		435,053	418,688			1,373,033	1,281,216	87,140		304,725	303,463	
Korea, RP	Imports	1993	732,574		307,552	293,233			163,093						
	Exports		4,582,629		866,219	863,433			2,155,038	2,005,281	142,574		1,174,857	1,169,650	
Japan	Imports	1993	2,348,401												
	Exports		11,045,000						4,177,969	3,604,927			3,175,713	2,652,078	

Note: * Total flat products (Source: IISI)

Sources: *UN International Trade Statistics Yearbook 1993*

3-6. Projection of Export to Neighboring Countries

Exports from Egypt to nearby countries need to be viewed from two perspectives; neighboring countries as export markets, and neighboring countries as competitors in export markets.

Nearby countries that import relatively large amounts of their total requirements for universal plates and sheets are three EU countries - Spain, France, and Italy - and Turkey. Each imports more than 1 million tons each annually. At the same time, all the countries except for Turkey export similar amounts.

EU countries, under their uniform iron and steel policy, have been struggling to maintain the survival of their industries in the wake of the general decline in world iron and steel demand and intensified international competition in the 1970s and onward, by taking various measures, including adopting the minimum price system, compulsory production cutbacks, and a capacity reduction policy. At present, compulsory measures including compulsory production cutback are not in place, and instead, non-compulsory guidelines are used to control production volumes. Overall, the process has forced many marginal producers to withdraw from the industry and the market.

Yet, the current iron and steel production capacity in Europe is considered to be excessive, as additional capacity cutbacks of 30 million tons in crude steel and 26 million tons in hot rolled steel (later reduced to 19 million tons) were proposed in 1993.

The EU, while fully liberalizing trade within the region, imposes 4.4% - 4.9% tariff rates on flat steel products imported from outside the region.

EU publicly advocates free trade in principle, but in practice, it controls imports in form of the import ceiling for steel materials, the import surveillance system, generally referred to as the double license system, and voluntary restrictions by export countries.

Turkey joined the EU tariff union under approval in 1995 and receives tariff treatment similar to that covering EU countries. This has exposed the country to intensive competition with EU countries. Tariff rates on imported steel materials are 18% for bar steel and 4-10% for other products.

Other than Spain, France, Italy, and Turkey, countries importing large quantities of flat steel products are, besides Egypt, Iran, Saudi Arabia, and Libya.

Most steel materials consumed in Iran represent demand for construction use including oil and gas industries; 40% of shape, 22% of flat steel and 13% of steel pipes. The government has been taking measures to improve self-sufficiency, including construction of a DR-type sheet mill and addition of a sheet production line in Isfahan in 1993, which are expected to raise self-sufficiency in the near future. Partly due to the shortage of foreign currency, the country controls all the imports through a foreign currency quota system.

Saudi Arabia uses 75% of its steel materials consumption for construction purposes. The country has traditionally produced steel bar only and has imported all flat steel products. Today, flat steel production projects using DR, electric furnace, and thin slabs are underway, with the purpose of maintaining a certain level of self-sufficiency, and total capacity is expected to reach 1.7 million tons, which far exceed the current amount of imports by the country, so a major portion of output will be exported. The country also maintains the policy of placing priority on locally-produced steel materials.

Apparent consumption of crude steel in Libya is relatively high at 278kg per capita, which far exceeds supply capacity of existing mills (self-sufficiency rate of 70%) and results in a large amount of imports. Nevertheless, the country has highly prospective iron ore resources in the central region, together with rich reserves of natural gas required for the direct reduction process, and is working on a project aiming at significant capacity expansion.

Other neighboring countries import very small amounts of steel materials.

The above analysis indicates that it is very difficult to establish a viable plan to export large quantities of flat steel products from Egypt. Feasible options are limited to small-scale exports to neighboring countries which consume small amount or exports to major importing countries to make up the gap with low price.

Chapter 4

DEMAND SURVEY OF STEEL FLAT PRODUCTS

4. DEMAND SURVEY OF STEEL FLAT PRODUCTS

4-1. Direct and Indirect Steel Flat Products Consumption

4-1-1. Summary

- Apparent consumption of flat steel estimated from actual production of EISCO and the import and export quantities obtained from CAPMAS for 1991 to 1995 are as follows.

(Unit: ton)

1991	1992	1993	1994	1995
722,186	635,807	652,396	722,707	833,915

- Apparent consumption based on the above by thickness and width in 1995 is as follows.

(Unit: ton)

	< 1,500mm	> 1,500mm	Total
t≦3mm	346,635	-	346,635
24mm≧t>3mm	355,885	50,335	406,220
t>24mm	10,214	11,315	21,529
Non coated Sub Total	712,734	61,650	774,384
Coated	59,531	-	59,531
Total	772,265	61,650	833,915

- Apparent consumption based on statistics of IISI is as follows.

(Unit: ton)

1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
582,000	612,000	513,000	577,000	657,000	592,000	715,000	801,000	604,000	725,000	602,000

The figures from 1991 to 1994 are different from the apparent consumption obtained from CAPMAS and EISCO but the total amount during the period is almost the same.

- Indirect consumption of flat steel is divided into two categories. One is imports of part for assembling (body of passenger cars and jeeps) and the other is imports of automobiles and home appliances as complete units.
  Indirect imports of flat steel by imports of body of passenger cars and jeeps in 1995 are as follows.

	Production (Units)	Unit consumption of flat steel (Tons)	Flat steel imported (Tons)
Passenger car	19,872	0.3	5,961.6
Jeep	2,000	0.5	1,000

The required annual production volume for making body is around 30,000 units. It seems very difficult to manufacture of body for passenger cars and jeep in the near future in Egypt.

- Imports of finished automobiles and home appliances based on CAPMAS data are as follows.

(Unit: sets)

	1991			1992			1993		
	Import	Export	Net import	Import	Export	Net import	Import	Export	Net import
Refrigerator	299,777	6,981	292,796	81,274	2,370	78,904	28,221	759	27,462
Washing m/c	54,838	1,029	53,753	51,135	251	50,884	60,144	821	59,323
Motor vehicle	21,014	0	21,014	13,630	2	13,628	19,428	37	19,391
Trucks	11,358	12	11,346	1,710	139	1,571	1,543	17	1,526
Cruise ship	127	0	127	359	22	337	475	27	448
Welded pipe (ton)	63,000	25,000	38,000	40,000	15,000	25,000	32,000	9,000	23,000

4-1-2. Apparent Consumption

Apparent consumption of flat steel estimated from the actual production of EISCO and the import and export quantities obtained at CAPMAS is as follows.

(Unit: ton)

	Import	Production	Total
1991	234,000	488,186	722,186
1992	152,000	483,807	635,807
1993	186,000	466,396	652,396
1994	230,298	492,409	722,707
1995	287,159	546,756	833,915

Source: CAPMAS and EGITALEC

Apparent consumption by thickness (Table 4-1-1) is calculated by using total apparent consumption and the amount consumed by individual sectors. Apparent consumption based on the statistics of IISI is shown in Table 4-1-2.

The amount consumed by individual sectors (major consuming industries consists of construction, shipyard, welded pipe, gas cylinder, metal container, railway, boiler, automobile, home appliance, can, metal furniture and other governmental company) were obtained in the second field survey and from the information of GOFI dated Sept. 30th, 1996.

The difference between apparent consumption and the total consumed amount of individual sector is classified as "others".

Classification by thickness and width is taken in consideration of the product mix of new flat steel mill where roll width of HR and CR is estimated as 1,500mm.

Table 4-1-1 APPARENT CONSUMPTION BY SIZE (1995)

(Unit: Ton/year)

	(1) Construction			(2) Shipyard			(3) Welded Pipe	(10) Gas Cylinder	(11) Metal Container	(9) Railway	(8) Boiler	(5) Auto	(4) Home Appliance	(6) Can	(7) Furniture	(12) Other Governmental	Others		Total		
	<1,500	>1,500	Total	<1,500	>1,500	Total	<1,500	<1,500	<1,500	<1,500	>1,500	<1,500	<1,500	<1,500	<1,500	<1,500	<1,500	Total	<1,500	>1,500	Total
t≤3mm	2,900		2,900	6,000		6,000	148,133			500	0	11,823	65,090		50,000	4,000	58,189	58,189	346,635	0	346,635
3mm<t≤24mm	130,050	23,000	153,050	9,400	26,300	35,700	96,756	48,960	10,000	5,324	1,035	19,964	657			21,900	10,874	10,874	355,885	50,335	406,220
t>24mm	9,400	11,000	20,400							514	315					300	0	0	10,214	11,315	21,529
Non coated Sub Total	142,350	34,000	176,350	15,400	26,300	41,700	246,889	48,960	10,000	6,338	1,350	31,787	65,747	0	50,000	26,200	69,063	69,063	712,734	61,650	774,384
Coated									13,500				6,502	17,279			22,250	22,250	46,031		59,531
Total	142,350	34,000	176,350	15,400	26,300	41,700	246,889	48,960	23,500	6,338	1,350	31,787	72,249	17,279	50,000	26,200	91,313	91,313	758,765	61,650	833,915

	Non coated ≤3mm	>3mm	Total	Coated ≤3mm	Total
Import(13)	126,672	101,872	228,544	58,615	287,159
Local(14)	219,963	325,877	545,840	916	546,756
Total	346,635	427,749	774,384	59,531	833,915

DATA SOURCE:

(1) Table 2-1-2 (p2-5)
(2) Table 2-1-8 (p2-9)
(3) Table 2-1-9 (p2-11)
(4) Table 2-1-13 (p2-15)
(5) Table 2-1-17-2 (p2-19)
(6) Table 2-1-18 (p2-20)
(7) Table 2-1-19 (p2-21)
(8) Table 2-1-21 (p2-22)
(9) Table 2-1-22 (p2-23)
(10) Table 2-1-24 (p2-24)
(11) Table 2-1-25 (p2-25)
(12) Table 2-1-26 (p2-26)
(13) Chapter 2-5-3 (p2-33)
(14) Chapter 2-4-2 (p2-31)

DISTRIBUTION OF SHEET ≤3mm thickness

	HR	CR	Total
Construction	2,900	0	2,900
Shipyard	6,000		6,000
Welded pipe	148,133		148,133
Railway	500		500
Automobile	1,495	10,328	11,823
Home appliance	0	65,090	65,090
Furniture	0	50,000	50,000
Other Government	1,000	3,000	4,000
Others	0	58,189	58,189
Total	160,028	186,607	346,635
share %	46%	54%	100%

Note: Estimated by the Study Team.

Table 4-1-2 APPARENT CONSUMPTION BASED ON IISI

(Unit: 1,000 ton)

	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
PRODUCTION											
Iron ore	1,955	2,066	1,974	2,122	2,274	2,461	2,432	2,371	2,062	2,409	2,460
Sinter	...	...	1,768	1,893	1,927	1,902	1,891	2,086	1,864	2,416	2,045
Pig iron	962	950	1,066	1,069	1,112	1,105	1,093	1,204	1,062	1,326	1,241
Ferro-alloys	5	6	7	8	8	7	8	8	...	...	...
Direct reduced iron			31	464	759	817	1,051	1,100	826	837	774
Total crude steel	928	1,028	1,013	1,433	2,025	2,114	2,247	2,556	2,524	2,772	2,791
(Ingots (a))	(230)	(265)	(264)	(51)	(315)	(372)	(78)	(270)	(230)	(367)	(194)
STEEL PRODUCTS											
Total Steel Products	794	1,257	1,802	2,043	2,322	2,009	2,101	2,284	2,239	2,316	2,392
Total Long Products	483	836	1,456	1,616	1,894	1,580	1,587	1,675	1,817	1,800	1,939
Total Flat Products	311	322	346	427	428	429	514	609	422	516	453
HR strip	134	165	177	212	209	152	148	175	143	154	174
CR strip	100	94	127	117	113	122	112	176	125	123	...
HR wide coil	...	...	...	...	...	51	73	56	65	136	...
HR and CR plate and shee	66	42	24	77	66	88	156	178	73	90	147
CR plate, sheet, and coil	9	17	15	16	16	11	11	19	12	10	130
Zinc coated sheet and strip	2	4	3	5	4	5	4	5	4	3	2
IMPORTS											
Pellets			150	800	850	1,000	1,250	900	1,150	1,180	...
Pig iron	...	38	11	0	...	30	144	204	97	....	...
STEEL PRODUCTS											
Total Steel Products	1,225	1,980	1,131	644	666	382	431	505	604	669	322
Ingots and semis	23	86	78	40	25	41	55	90	135	139	6
Total Long Products	670	1,400	740	393	267	71	96	86	208	217	54
Total Flat Products	271	290	167	150	229	163	201	192	182	209	149
HR strip	6	14	4	0	1	2	6	3	1	7	0
CR strip	5	8	4	3	5	2	3	3	3	6	3
HR wide coil	18	18	10	1	29	18	10	25	6	8	29
HR and CR plate (>=3mm)	61	65	40	34							
HR plate (>=3mm)					18	38	36	29	29	42	39
HR sheet (<3mm)	47	0	0	1	1	0	2	0	16	20	1
HR plate & sheet total (1	108	65	40	35	19	38	38	29	45	62	40
CR plate, sheet, and coil (2	34	65	20	22	49	19	39	31	22	21	18
HR & CR plate, sheet, coil total (1+2)	142	130	60	57	68	57	77	60	67	83	58
Electrical sheet and strip	3	3	3	3	3	3	5	2	3	3	4
Tinplate, TFS, and strip	59	66	48	61	97	47	56	62	58	55	33
Zinc coated sheet and strip	26	31	28	12	8	13	34	1	35	31	17
Other coated sheet and str	11	20	10	13	17	19	9	36	10	15	7
Total Tubes	233	194	143	55	133	93	63	115	62	82	106
EXPORTS											
STEEL PRODUCTS											
(Welded tubes)	(1)	(0)	(0)	(1)	(4)	(4)	(17)	(25)	(...)	(...)	(...)
Total Steel Products	11	17	38	61	66	70	175	190	425	460	503
Ref. APPARENT CONSUMPTION											
STEEL PRODUCTS											
Total Long Products	1,153	2,236	2,196	2,009	2,161	1,651	1,683	1,761	2,025	2,017	1,993
Total Flat Products	582	612	513	577	657	592	715	801	604	725	602
HR strip	140	179	181	212	210	154	154	178	144	161	174
CR strip	105	102	131	120	118	124	115	179	128	129	3
HR wide coil	18	18	10	1	29	69	83	81	71	144	29
HR and CR plate and shee	174	107	64	112	105	126	204	207	118	152	187
CR plate, sheet, and coil (2	43	82	35	38	65	30	50	50	34	31	148
HR & CR plate, sheet, coil total (1+2)	217	189	99	150	170	156	254	257	152	183	335
Electrical sheet and strip	3	3	3	3	3	3	5	2	3	3	3
Tinplate, TFS, and strip	59	66	48	61	97	47	56	62	58	48	48
Zinc coated sheet and strip	28	35	31	17	12	18	38	6	39	34	19
Other coated sheet and str	11	20	10	13	17	19	9	36	10	15	7

Note: (a) - 1984-87 data are calculated by subtracting continuous casting and liquid steel for castings from total crude steel production.

Sources Steel Statistics of Developing Countries 1994 and 1995 Edition, IISI

(Original: Egyptian Iron and Steel Co.; UK ISSB export statistics - data of major exporters only.)

4-1-3. Import and Export of Home Appliance and Automobiles

Trade in home appliances and automobiles has been as follows.

Table 4-1-3 IMPORT AND EXPORT OF HOME APPLIANCE AND AUTOMOBILE

Unit: Welded pipe: ton
Others: units

Product	1991					1992					1993				
	Import	Export	Net Import	Unit Weight	Indirect Import	Import	Export	Net Import	Unit Weight	Indirect Import	Import	Export	Net Import	Unit Weight	Indirect Import
REFRIGERATOR															
Domestic Ref. 240ℓ ~ 800ℓ	22,899	4,354	18,545			7,397	2,306	5,091			6,858	739	6,119		
Other capacity	266,478	2,600	263,878			60,716	10	60,706			13,995	2	13,993		
Other Ref.	6,508	25	6,483			6,089	54	6,035			1,332	8	1,324		
Others	3,932	2	3,930			7,072	0	7,072			6,036	10	6,026		
Total	299,777	6,981	292,796			81,274	2,370	78,904			28,221	759	27,462		
WASHING M/C															
DISH WASHING M/C (complete unit)	995	0	995			545	0	545			222	0	222		
DISH WASHING M/C (for assembling)	6,061	0	6,061			5,436	11	5,425			2,026	1	2,025		
WASHING & DRYING M/C	1,136	1,029	107			106	55	51			703	161	542		
WASHING M/C half auto	2,830	0	2,830			3,011	7	3,004			3,382	145	3,237		
WASHING M/C full auto	1,419	0	1,363			2,945	178	2,767			3,344	514	2,830		
OTHER WASHING M/C	2,897	0	2,897			2,391	0	2,391			2,464	0	2,464		
WASHING M/C full auto (not assembled)	39,500	0	39,500			36,701	0	36,701			48,003	0	48,003		
Total	54,938	1,029	53,753			51,135	251	50,884			60,144	821	59,323		
MOTOR VEHICLE															
Passenger Car 1,000 ~ 2,000 CC	11,711	0	11,711			10,922	0	10,922			15,102	0	15,102		
Bus & Microbus	7,242*1	0	7,242			985*2	2	983			2,044*3	37	2,007		
Others	2,061	0	2,061			1,723	0	1,723			2,282	0	2,282		
Total	21,014	0	21,014			13,630	2	13,628			19,428	37	19,391		
TRUCKS	11,358	12	11,346			1,710	139	1,571			1,543	17	1,526		
TRACTORS	2,851	1	2,850			2,490	10	2,480			1,592	25	1,567		
ARMORED FIGHTING VEHICLE	2,031	118	2,913			1,537	4,693	-3,156			2,471	1,445	1,026		
LORRIES WITH CEMENT MIX OR CR	127	0	127			105	6	99			149	0	149		
CRUISE SHIPS, EXCURSION BOAT, etc.	178	30	148			359	22	337			475	27	448		
WELDED PIPE	63,000t	25,000t	38,000t			40,000t	15,000t	25,000t			32,000t	9,000t	23,000t		

Note
*1: Microbus; 7,217 Bus; 25 *2: Microbus; 753 Bus; 226
△2: Microbus *3: Microbus; 1,812 Bus; 232

Source: CAPMAS

4-2. Domestic Demand Projection

4-2-1. Summary

Based on the assumptions described in 4-2-2, the Study Team made forecast on flat steel demand in the medium term (2005 and 2006) by applying the Micro-Analysis techniques (aggregation of demand forecast for each of major consuming industries).

It is assumed that production at the proposed flat steel plant will reach the design capacity in 2005. To evaluate feasibility of the proposed plant construction, Micro-Analysis is required to determine flat steel demand by kind and dimension. Domestic demand in 2005 and 2006 obtained from Micro-Analysis for each of the three GDP growth scenarios is summarized below (see Table 4-2-2):

Year	Lowest	Medium	Highest
2005	1,426,846 ton	1733,537 ton	1,969,969 ton
2006	1,505,772 ton	1,865,584 ton	2,147,473 ton

For long-term forecast, Macro-Analysis was conducted for the following cases:

1) Derived from time series analysis on steel demand between 1983 through 1993, except for 1987 and 1988 which were excluded because of anomalously high nominal figures due to the start of ANSDK's production and other factors;
2) Derived from the correlation between steel demand and GDP between 1984 through 1993 except for 1987 and 1988;
3) Derived from time series analysis on flat steel demand between 1991 through 1995;
4) Derived from the correlation between flat steel demand and GDP between 1991 through 1995;
5) Derived from the correlation between per capita GDP and steel consumption in major countries;
6) Derived from the correlation between per capita GDP and steel consumption in major countries which consumed 150kg per capita or less, including the following supplemental cases;
   6-1) Using adjusted per capita GDP for Egypt; and
   6-2) Adjusted per capita steel consumption for Egypt.

The results of the above estimations for flat steel demand in 2005 are summarized as follows.

THE FLAT STEEL DEMAND IN 2005

(Unit: 1,000 ton)

	R^2	GDP growth rate			Time series
		Lowest	Medium	Highest	
1	0.1982				1,021
2	0.0626	940	979	1,014	
3	0.3918				1,083
4	0.4446	1,230	1,440	1,628	
5	0.5558	1,174	1,274	1,330	
6-1	0.5665	1,261	1,403	1,526	
6-2	0.5665	1,211	1,379	1,470	

Source: Tables 4-2-4~4-2-7, 4-2-9~4-2-11

For long-term forecast up to 2015, it is desirable to use past data which must be consistent over an equally long period of time.

However, both GDP and steel demand in Egypt have been severely affected by a number of dramatic changes including violent ups and downs of oil prices, series of political turmoil in the Middle East, and transformation from centrally planned economy to market economy. They are clearly reflected in the low degree of correlation for Cases 1 through 4. The degree of correlation for Cases 5 and 6 is higher than the degree of the others.

One of Macro-Analysis techniques not relying on domestic data uses the correlation between per capita GDP and steel consumption in major countries. This method is advantageous in taking into account global trends, such as the rapid rise in steel demand over a threshold of per capita GDP or steel consumption (100kg empirically). Although the degree of correlation between per capita GDP and steel consumption in major countries is not particularly high, it seems to come within an acceptable range.

Two cases were considered for analysis of the correlation between per capita GDP and steel demand; Case 5 for countries throughout the world, and Case 6 for countries which per capita steel consumption is 150kg or less.

The latter case is designed to identify a stage of economic growth when steel demand burgeons.

The Egyptian pound has been devalued significantly due to the external debt problem and other causes. As a result, the Egyptian US$ real purchase power is higher than that calculated from the ordinary foreign exchange rate.

Both per capita GDP in Egypt and steel consumption were adjusted to the levels along the respective regression models, Cases 6-1 and 6-2, respectively. However, no significant difference was seen between the two results.

From the above analysis, the Case 6-1 is used for the demand forecast after 2005.

(Unit: 1,000 ton)

	Lowest	Medium	Highest
2005	1,427	1,734	1,970
2010	1,663	2,086	2,562
2015	1,942	2,528	3,386

Source: Table 4-2-12

Demand of the flat steel in 2005 based on the Micro-Analysis, is slightly higher than that obtained by Macro-Analysis. This is probably because the latter used average GDP figures, while the former employed GDP growth rates based on construction and manufacturing sectors which grew faster than the average.

If GDP growth rates based on manufacturing sectors is used for Case 6-1, the demand in 2005 increases to 1,413,000 tons for the lowest case, 1,635,000 tons for the medium case and 1,800,000 tons for highest case which are almostly the same with the figures estimated by Micro-Analysis.

Nevertheless, there is no significant difference between the two results, which seems to verify appropriateness of the forecast based on Micro-Analysis.

4-2-2. Conditions for Projection of Domestic Demand

(1) GDP growth rates which were confirmed and mentioned in M/M on June 26, 1996.

A. The Lowest case : GDP growth rate 4%

B. The Medium case : GDP growth rate 5.5%

C. The Highest case : GDP growth 1995~2005; 6.5%
2005~2020; 8.5%

(2) GDP growth rate of related sectors is calculated from the GDP targeted growth rate of the Third Development Plan (Table 4-2-1).

Table 4-2-1 GROWTH RATE

(Unit: % p.a.)

	Base case	Lowest	Medium	Highest
Agriculture	3.5	2.8	3.85	4.55
Mining & industry	7.0	5.6	7.70	9.10
Petroleum	1.0			
Electricity	6.6			
Construction	7.2	5.76	7.92	9.36
Productive service sector	5.3			
Social service sector	5.7			
Total	5.1	4.0	5.5	6.5

Source: Calculated from Third Development Plan

(3) The ratio of the flat steel consumption to the total steel consumption of 30% is assumed as no-change due to the forecast of no-change of structure of steel consumption.

(4) The rapid growth of consumer durable good (automobile and home appliance) is not assumed as mentioned in the M/M on June 26,1996.

(5) 2005 years is assumed as year of of entering into full operation in consideration of construction schedule as follows.

- Feasibility study will be completed and government approval will be obtained by the end of 1997.
- The plant will be constructed between 1998 and 2002. The construction period will include design and engineering, infrastructure development, equipment procurement and installation.
- Commissioning will start in 2003. Commercial operation will commence and operating rate will be boosted in 2004, reaching the design capacity in 2005.