

BIBLIOGRAPHIC DATA SHEET1. CONTROL NUMBER
PN-AAJ-3252. SUBJECT CLASSIFICATION (800)
DM00-0000-G232**3. TITLE AND SUBTITLE (340)**

An assessment of Egypt's industrial sector

4. PERSONAL AUTHORS (100)**5. CORPORATE AUTHORS (101)**

Little (Arthur D.) Inc.

6. DOCUMENT DATE (110)

1978

7. NUMBER OF PAGES (120)

222p.

8. ARC NUMBER (170)

EG338.0962.L778

9. REFERENCE ORGANIZATION (130)

Little

10. SUPPLEMENTARY NOTES (500)

(Report to the Special Interagency Task Force reviewing the U.S. Security Supporting Assistance Program for Egypt)

11. ABSTRACT (950)**12. DESCRIPTORS (920)**Egypt
Industries
Investments
Sector analysisSector policy
Assessments
Industrial promotion
Economic development**13. PROJECT NUMBER (150)**

263008800

14. CONTRACT NO.(140)

AID/nc-C-1469

15. CONTRACT TYPE (140)**16. TYPE OF DOCUMENT (160)**

PN-AAA-3

EG
338.0962
L778

AN ASSESSMENT OF

EGYPT'S INDUSTRIAL SECTOR

**Report to The Special Interagency Task Force
Reviewing the U.S. Security Supporting
Assistance Program for Egypt**

C-81308

January, 1978

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Washington, D.C. 20523

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PREFACE

The International Security Assistance Act of 1977 requires that the Secretary of State convene a special interagency task force to review the U.S. Security Supporting Assistance Program (SSAP) for Egypt and submit a report to Congress by February 15, 1978. To prepare this review report, the United States Agency for International Development (USAID) sought assistance in appraising certain aspects of the Egyptian economy. One such study was undertaken by Arthur D. Little, Inc. (ADL), which was awarded a contract by USAID in November, 1977, to assess Egypt's industrial sector. The key objectives of the ADL study were to evaluate the current and potential contribution of the industrial sector to Egypt's economy, to identify the constraints which limit industry's development, and to make recommendations for enhancing the industrial sector's contribution to Egypt's development goals. Special attention was to be given to the role of the private sector in Egyptian industrial development. Another outside study group focused specifically on small-scale industry in Egypt.

In view of the time constraint, the ADL study by necessity had a somewhat narrow scope. It drew on other studies recently prepared on the Egyptian economy and relied to a great extent on information and impressions gathered during a two-and-a-half-week visit to Egypt by a group of ADL consultants. Another limitation on this study was the absence of a macroeconomic study addressing questions such as the balance-of-payments problem, the dual exchange rate, and the relative

importance and role of sectors other than industry. Several of the most important issues concerning industry ought to be investigated in the context of the economy as a whole rather than only from an industry-sector perspective.

The ADL team of consultants participating in this study included Dr. William A. W. Krebs, Mr. S. James Langley, Mr. Demosthenes Menegakis, Dr. William Reinfield (Project Leader), Mr. John C. Stephenson, and Mr. Eduardo Tugendhat. The Egyptian consulting firm of Kamel Brothers, Ltd., also contributed to the professional effort of this study.

The ADL team wishes to acknowledge the excellent cooperation received at all levels in the USAID Mission in Egypt, from officials of the Near East Bureau at USAID Washington headquarters, and from a wide range of officials of the Government of Egypt as well as representatives of the Egyptian private sector.

I. SUMMARY FINDINGS AND RECOMMENDATIONS

A. GENERAL OUTLOOK

In view of Egypt's current economic structure and resource base industry has a vital role to play in the overall economy, namely, to (1) create jobs and increase income for the domestic population; (2) generate the foreign exchange necessary not only to sustain itself but to finance the importation of the goods and services required to enhance the standard of living; and (3) provide consumer and capital goods for domestic markets.

To fulfill this role industry will have to grow significantly faster than it has in recent years--industry's contribution to GDP has remained at around 20% since 1965.

While there are encouraging signs that industry will rise to this challenge (e.g., the open-door policy, recent Governmental decrees, positive attitudes, and resources on which to build), the outlook for rapid industrial growth must be viewed with reservation. Most of the positive aspects about the current situation and prospects for the future must be qualified with statements that limit their favorable impact. Furthermore, a number of important fundamental problems that have plagued Egypt in the past remain unsolved.

B. FAVORABLE SIGNS AND QUALIFICATIONS

One of the most encouraging signs is the explicit "open-door" policy announced in 1973 which, in effect, invites the private sector--domestic and foreign--to participate as investors in the expansion of Egypt's economy.

All joint ventures with public sector companies are officially to be in the private sector and not subject to the body of regulations governing public corporations. While we have no reason to doubt these intentions of the Government, Egypt's private sector, as well as the international community, have been cautious in responding to these decrees.

The emerging strategy of the Government appears to be that all major industrial expansion (other than defense, public utilities, and basic industries) will be left to joint venture and private sector investment. However, there are conflicting statements regarding this intention. For example, the not-yet-released Five-Year Development Plan explicitly states that the principal responsibility of implementing development strategy will belong to the public sector.

There have been a substantial number of applications and approvals for private sector investment in industry, following the passage of the private investment law. However, as yet, few of these projects have reached the operational stage and it is not possible to project how far from completion most projects are. Those which have been brought to the operating stage thus far tend to be relatively small, consumer-oriented, and require a quick return on investment.

Foreign assistance in the form of grants, aid and technical support has increased substantially in both quantity and quality, amounting to roughly \$2.5 billion annually at this time. However, the bulk of this assistance comes from a small number of countries, making it highly vulnerable to the policies of a few countries. Furthermore, additional

essential commitments are estimated by the World Bank as likely to require an average of \$2.5 billion annually between 1978-1980 and substantial amounts thereafter.

There appears to be a positive attitude in both the public and private sectors regarding the expansion and widening of industry, recognition of the constraints which limit accomplishment and steps needed to achieve Egypt's industrial potential. However, an explicit strategy is lacking and statements by officials are often found to be in conflict with one another.

Important assets upon which to build a large industrial sector exist including: a significant domestic market; a geographically strategic location; a large potentially capable labor force; some valuable natural resources; basic infrastructure; adequate technical, educational and financial institutions; and an existing industrial base. However, the domestic market is characterized by low purchasing power; the geographically strategic location is in an unstable political region; much of the labor force lacks management and discipline; natural resources are limited, particularly land; infrastructure is not always well maintained and is particularly poor in the case of telecommunications; technical, educational and financial institutions are inefficient and uncoordinated; and the existing industrial base is poorly maintained and, in some cases, underutilized.

C. FUNDAMENTAL PROBLEMS

In addition to the limitations cited above, there exist several fundamental problem areas which must be addressed in an industrial development strategy if Egypt is to achieve its potential

One of the most basic problems is that industry suffers from inefficiency, low quality, and high cost. These impediments to further industrialization result from shortcomings in: management (at both the central and enterprise level); appropriate incentives; marketing and export orientation; quality control; and cost consciousness.

Another fundamental problem is that the environment within which industry operates is not, at present, conducive to achieving full industrial potential. Environmental constraints include: excessive bureaucratic and legal procedures; price controls; lack of assurance of long-term availability of foreign exchange; an oppressive taxation structure; restrictive labor laws; and weak institutional systems.

Finally, the planning framework within which industry operates is weak, particularly in the areas of project identification and evaluation and investment guidelines.

D. RECOMMENDATIONS

The challenges mentioned above are well known to leaders in the Egyptian economy and efforts are underway to find solutions to many of the problems impeding more rapid industrialization. The following recommendations focus on several areas in which efforts could be enhanced through program development. They are not addressed to any particular

agency and not necessarily intended for USAID action. They stem from our belief that, in order to achieve its goals, Egypt must (1) make industry more efficient, (2) make it internationally more competitive in cost and quality, and (3) develop a larger export base. The recommendations fall into two groups--those which can yield near-term benefits and those which have a longer-term payoff.

Recommendations with Near-Term Benefits

1. Highest priority should be given to making existing industry substantially more efficient. Accomplishment of this goal would be greatly enhanced by providing the management and technical skills now deficient as quickly as possible. Three routes are possible:
 - a. Making use of technical advisory services. These services should be capable of providing assistance in introducing modern management techniques, better use of equipment, improved raw material conservation, and other operational matters.
 - b. Engaging management services, through contract, to work within industry. Such services can provide existing industries with immediate internal management techniques which they are now lacking. Contracts may be for the employment of individuals in certain cases and for the assumption of the full management function of the enterprise in others.
 - c. Finding appropriate joint venture partners who would be willing to contribute managerial and technological know-how.

Pursuing these lines of action, as appropriate on a case-by-case basis, will also enable existing industry to become more competitive internationally in terms of price and quality. High priority should be given to stimulating exports. The most immediate returns can be expected from a program designed to identify products and markets in which Egypt has a comparative advantage. The numerous studies identifying industrial projects which have been conducted do not sufficiently address themselves to this important goal. The products and markets identified should be selected not only on the basis of their current marketability but on considerations such as net national benefit, stimulation of further investment and market stability. The program should also include incentives for developing export markets and a strategy for implementation.

Recommendations with Longer-Term Benefits

1. The potential opportunities that do exist for further industrialization could be realized more quickly and efficiently if a high-level capacity were established to identify, evaluate and promote high-priority industrial projects. This process requires a systematic approach to selecting those industries which are consistent with national goals, performing prefeasibility studies on specific projects, ranking them in order of economic and social desirability and then promoting them among potential investors. The effort must explicitly take into consideration

the plans, goals and targets of all sectors of the economy-- e.g., agriculture, housing, education, etc.--so that resources can be allocated as efficiently as possible.

The authorities to whom these responsibilities are given must have available highly capable technical staffs and must be in a position to make high-level decisions regarding investment programs.

2. Capabilities in promotion of both industrial opportunities and products made in Egypt are in need of strengthening. This could be accomplished through a specific program designed to "market Egypt." It would have to include development of informative and attractive publications and other visual presentations that could be used throughout the world. The program would have to be managed by sophisticated and knowledgeable Egyptians who would travel widely and be available to receive businessmen seriously interested in investing in Egypt.

Other elements of such a program may include carefully-planned investment seminars in principal foreign commercial centers with follow-up provisions, well-developed techniques for assistance in finding appropriate joint venture partners, monitoring what Egypt's competitors are doing and establishing promotion offices abroad. These promotion efforts ought to be aimed not only at investors and consumers of Egyptian products but at potential participants in free zones and tourism as well.

Another component of this recommendation is the creation of a "one-stop" agency to deal with interested investors. This agency would "process" them through the bureaucracy as expeditiously as possible, providing all the information the potential investor may seek with minimum effort for the interested party.

3. Small-scale industry in Egypt is in need of technical assistance in the form of basic business management training (including project evaluation), technical advice and skill upgrading. Inasmuch as administrative responsibility over small-scale industry is divided among half a dozen ministries, focusing on common problems and taking proper remedial action is made more difficult. Support should, therefore, be given to the recommendation put forth by a recent IBRD Mission that responsibility for small-scale industry should be centralized in a reorganized Small Industries Department in the Ministry of Industry. Among the functions proposed for the Department would be to (1) streamline and improve upon the efficiency of administrative procedures, and (2) eliminate existing biases against small-scale industry with respect to incentives, procurement and taxation.

Industrial manpower development, planning, policies and program implementation may be improved by encouraging an independent industry-government council to advise those government/academic bodies charged with these functions. The council should periodically review evolving industrial requirements, academic and

vocational school curricula, Government support of industry training programs, incentives and inducements offered to graduates to enter industry, and make recommendations aimed at matching plans and actions more closely to emerging requirements. The principal benefits would be (1) assurance that government planners and implementers have ready access to informed industrial viewpoints and (2) that manpower development is coordinated with manpower needs.

5. Development of management skills and of an environment conducive to industrialization have been assessed as constituting serious constraints to industrialization. Consequently, programs should be developed exposing middle and top management Egyptians to modern business practices, decision making and industrial technology. Through the "demonstration effect" such programs would introduce international standard management capability and develop future management and entrepreneurial talent. Thus, these programs should emphasize practical and conceptual development and de-emphasize institutional and formal academic instruction.

In addition, consideration should be given to establishing an explicit national program of productivity improvement for industry. The program should also be charged with acquisition of foreign technology and management know-how. Such programs may be organized along lines that were highly successful in bringing U.S. technical and management talent to bear in revitalizing

industry in Western Europe in Marshall Plan days after World War II--and later in a number of developing countries in somewhat altered form.

6. The legal and administrative environment within which industry operates is considered by many as a constraint to industrialization. Labor laws in an effort to protect the worker from arbitrary and unfair management practices limit management's freedom; wage and employment policies and lack of incentives limit management's drive for efficiency and productivity. The slowness or lack of decision making within the bureaucracy inhibits fast administrative action in all spheres.

While these problems are well known and publicly debated, they need to be systematically studied, rationalized, and acted upon.

It is recognized that solutions are unlikely to be found in the short term, however, a conscious effort to address the problems will be beneficial. It is suggested that studies of administrative reforms and unemployment compensation systems coupled with liberalization of the labor law be given a high priority. Such studies should be followed with immediate implementation action.

Industrial free zones represent a means of generating markets for Egypt's resources and its domestic production. They should not be viewed as an end in themselves. The needs include: a well-thought-out statement of objectives, goals and targets; identification of industries and regions in which development are sought; a statement of environmental standards to be

followed; and an aggressive promotion program. Further thought must also be given to the incentives being currently offered to investors in the zones. As they presently stand, they appear not to reflect, as effectively as possible, the goals sought for the free zones.

8. Although not dealt with explicitly in this study, tourism represents another market generator for Egypt's industry and therefore a potentially significant provider of economic opportunities. It must not be viewed as an end in itself, but as a means for achieving broader goals. These goals, to which tourism development should be addressed, have not been articulated, nor has a coordinated national tourism development program been produced. If tourism is to be a productive economic sector, industries must be identified which could be stimulated by tourism (e.g., food, construction, furniture, handicrafts) and policies must provide the assurance that further tourism development will create further industrial development. Planning along these lines is greatly needed in Egypt.

II. CURRENT SITUATION

A. BRIEF HISTORICAL BACKGROUND

The development of industrialization in Egypt may be briefly described in three phases. Although there had been spurts of industrial growth at the turn of the 20th century with an export-led growth (mostly textiles), the beginning of sustained industrialization commenced in the late 1920's. At that time, the country began to pursue a more vigorous import substitution policy as the result of (1) a decline in exports, (2) the emergence of national enterprise, and (3) the tariff reform of 1930. Increased participation of local capital and entrepreneurs, embodied in the Bank Misr, as crucial in financing and promoting industrial development in these years as well as in securing favorable protectionist legislation. The emphasis on protection for industry was particularly important in stimulating a fairly rapid growth of industrial output, which was marked by a significant increase in productivity between 1938 and 1946.

The second phase of industrial development began following the revolution of 1952, although it did not take definite shape until the early 1960's. Spurred by a desire to speed up industrialization, a Permanent Council for the Development of National Production was established to study and implement development projects. Its proposals and investment program gave the Government a stake in a number of important industrial projects and led directly to the First Industrial Plan (1957), and the First Five-Year General Plan (1960/61 to 1964/65). By the early 1960's industrial investment became almost exclusively a

Government activity. The public sector dominated industry, particularly following the impetus given to nationalization after the 1956 War. The process was marked by: central planning; the public sector accounting for about 70% of industrial output by 1973 and 75% of value added; the private sector relegated to small-scale industry, while public companies became increasingly large (about 135 companies); public sector concentration on heavy and intermediate industries; and a significant decrease in the rate of industrial growth and productivity.

The third, and current, phase of industrial development strategy made its first appearance in 1973 with the so-called "October Paper" outlining a new "open-door" policy. This new strategy calls for economic liberalization involving revitalization of the private sector, encouraging foreign investment, and greater efficiency for the public sector--all in an attempt to restimulate the Egyptian economy.

B. STRUCTURE OF INDUSTRY

For purposes of analysis, the industrial sector can best be characterized in two ways: by subsector and as between private and public ownership. The Government has divided industry into six subsectors which will be used here, despite the fact that the composition of each is often illogical. In order of their contribution to industrial output they are food processing, textiles, chemicals, engineering, metallurgy, and building materials. Table 1 indicates their relative importance in terms of value of production.

The relative importance of private and public sectors can be seen in Tables 2 and 3. The private sector is relatively unimportant in

TABLE 1

CONTRIBUTION BY SUBSECTOR TO INDUSTRIAL OUTPUT¹
(Millions of LE, current prices)

	Value of Output		Share of Total Industrial Output	
	1975	1976	1975 (%)	1976 (%)
Food	700	760	31	28
Textiles	688	756	30	28
Metallurgy	159	447	7	17
Chemicals	272	247	12	9
Engineering	222	N.A.	10	N.A.
Building Materials	94	N.A.	4	N.A.

¹ Does not include firms with less than 10 employees and a small number of public sector companies not under the Ministry of Industry, but these would not significantly change the picture. Figures are sales and not value added.

Source: IBRD, Arab Republic of Egypt, Survey of Small-Scale Industry, September, 1977.

TABLE 2

**PRIVATE AND PUBLIC SECTOR INDUSTRIAL
OUTPUT, INVESTMENT AND EMPLOYMENT: 1976**

	<u>Output</u>		<u>Investment</u> ¹	<u>Employment</u> ²	
	<u>ME Million</u>	<u>Percent</u>	<u>ME Million</u>	<u>Thousand</u>	<u>Percent</u>
Private	735	27.2	94.7	623.2	54.2
Public	1,962	72.8	212.7	526.3	45.8
TOTAL	2,697 ³	100.0	N.A.	1,149.5	100.0

¹ Private investment figures are "approvals" by GOFI. Actual investment figures are not available but have been generally estimated at one-third of the investment level approved. Figures do not include foreign investment. Because of the incongruity of the public and private figures, totals and percents are not tabulated.

² Employment figures are for 1974 because more recent private sector employment statistics are not available. The historical trend indicates that this structure still holds true (see Table 10).

³ Output figures are sales and so include much double counting. Appropriate value-added figures are not available.

Sources: Ministry of Industry, Petroleum and Mining; IBRD, Small-Scale Industry.

TABLE 3**PUBLIC AND PRIVATE INDUSTRIAL OUTPUT BY SUBSECTOR, 1976**

	<u>Public</u>	<u>Private</u>	<u>Total</u>	<u>Share of Private Sector</u>
	<u>(in E Millions)</u>			<u>(Percent)</u>
Textiles	563	193	756	25
Foodstuffs	592	183	775	24
Chemicals	180	72	252	29
Metallurgy ¹	382	65	447	15
Engineering (1975) ¹	180	42	222	19
Building Materials ¹	77	17	94	18
Leather and Woodworking	---	177	177	100

¹From IBRD, Survey of Small-Scale Industry. The Ministry of Industry combines metallurgy and engineering and does not administer building materials. Output estimates of two sources differ slightly.

Source: Ministry of Industry, Petroleum and Mining.

terms of value of output and gross fixed investment with about 30% and 10%, respectively, but is disproportionately important in employment with 54%. The public companies account for more than 75% of value added in industry. Much of this is explained by the very large and increasing size of public sector companies compared to the small size of private sector firms, Government control of investment allocation, and greater capital intensity in public sector companies.

The food processing industry is made up of over 1,000 establishments, although all but 21 of the establishments are small private concerns. The public sector companies account for 88% of the value of sector output and employ over 80,000 people. The most important public company product areas are sugar and sweeteners, edible oil and soap, dairy products, cigarettes and tobacco, and beverages. Animal feeds and textile starches are also included in this sector. The sector has experienced little growth in production output in physical terms in recent years and capacity utilization remains around 70%. There have been almost no exports, while imports, particularly of edible oils and oil seeds, are rising rapidly. The food industry is marked by frequent shortages of raw materials (aggravated by a lack of coordination between ministries and pricing policies), old and badly maintained equipment, and a pricing and priority system that eliminates profit and efficiency incentives.¹

¹Additional performance indicators for all sectors will be summarized below, and a detailed analysis found in Appendix A.

The textile industry has long been one of the most important in terms of value. Its major contribution, however, has been as Egypt's principal industrial exporter, accounting for \$105.5 million out of \$207.1 million in total exports (public and private) in 1976. An additional \$228 million in fiber exports are usually classified as textile exports. The 29 public companies account for 80% of productive capacity, including 100% in cotton and wool yarn, and wool cloth, and 65% in cotton cloth. Small private establishments and workshops produce 35% of cotton cloth, 55% of knitted cloth, and 30% of made-up products. Textiles are also the major industrial employer with 281,900 workers in 1976 in the public sector alone.

A number of problems threaten the export competitiveness of textiles: low quality (already almost all textile exports are directed towards centrally-planned economies with lower product quality standards); low machine efficiency; danger of raw materials shortage; and extremely low labor productivity. Other problems include waste of raw materials, inefficiencies introduced by subsidization, price controls, and lack of skilled management and labor.

The "chemical" industry is a catchall for a wide variety of products, including basic chemicals, pulp and paper, rubber, fertilizers, plastics, leather, wood products, and others. The public sector, representing 73% of the value of production, is made up of 31 companies concentrated in pulp and paper, basic chemicals, and fertilizers. The private sector includes mostly small establishments in leather and wood products. Public sector employment is about 50,000. The limited exports and substantial imports (of equipment and raw materials) have resulted in a

considerable trade deficit in this subsector. The value of production is about ₦200 million where it has hovered for the last several years.

The engineering industries subsector is composed of fabricated metals, non-electrical machinery, electrical machinery, transport equipment, and professional and scientific equipment. Electrical machinery, transport equipment and fabricated metals each account for about 30% of production output, while the insignificance of non-electrical machinery is striking. The ₦222 million in output in 1975 was only 8% of total industrial production, which is too little for an industrializing nation. Twenty-nine public sector companies accounted for over 80% of the production while about 229 private firms and 17,413 workshops accounted for the rest (mostly fabricated metal). Exports are insignificant, while imports are very large and growing rapidly, largely because of transport equipment and non-electrical machinery imports. The principal problems in the public sector are thought to be: a shortage of basic management skills, poor labor performance, lack of an effective marketing function, a technology gap, delays in obtaining supplies, the approval of price increases, and the execution of new projects. The small private sector is particularly creative and dynamic, but suffers from shortages of foreign exchange, equipment, parts and raw materials.

The metallurgical products industry produced output valued at almost ₦500,000 in 1976, up sharply from ₦160,000 the year before. Iron and steel account for almost all of this, with nonferrous metals (especially aluminum, copper, lead, and zinc) filling out the total.

Only about 10% is produced by private establishments, these being mostly small foundries. Some important joint ventures now under consideration could alter this situation. The industry is marked by very low capacity utilization, overmanning, costs greatly exceeding the fixed price, and raw materials of poor quality.

The building materials subsector is made up of cement and cement products, bricks, flat glass, refractories, quarry products, and ceramics. Most are produced by a small number of public companies except in bricks and tiles where private establishments are completely dominant. In all product areas except cement, production satisfies demand. Factors shaping the industry are: inadequate supplies of raw materials, poor maintenance of equipment, and the lack of exports and export potential.

Almost all industry is either directly or indirectly administered by the Government. Most public sector companies are under the Ministry of Industry (over 80% in terms of value of production). Exceptions are pulp and paper (Ministry of Culture), building materials (Ministry of Housing and Reconstruction), and assorted military factories. The Ministry of Industry administers public companies through: (1) its own sector departments responsible for overall performance; (2) the General Organization for Industrialization (GOFI) in charge of studying and approving projects over ₡500,000; and (3) General Assemblies. The Ministries of Planning, Finance, and Economic Affairs have important inputs into all public companies through their control of central planning, production targets, and investment and foreign exchange allocations. A Supreme Council for each sector coordinates all these functions.

Private industry is controlled by the Government insofar as investment and foreign exchange for large projects and imports need to be approved. Previously, the threat of nationalization of large companies was, in effect, a very powerful form of control.

Government policy and control mechanisms will be discussed in greater detail later in this report. Also, see Appendix B.

C. PERFORMANCE OF INDUSTRY

1. Output

Industry and mining have accounted for about 21% of GDP and this share has remained almost constant since 1965. Real GDP growth was moderate from 1965 to 1973 when it was an average 2.6%. Since then, it has been 3.2% in 1974, 9.8% in 1975, and at least that in 1976. Similarly, the value of industrial output has fluctuated between negative growth rates and 4% during the 1965-1973 period, after which a recovery culminated with an estimated 10% growth in 1975 and 1976.

Industries experiencing particularly rapid growth in value in recent years are textiles, foodstuffs, and metallurgical products as shown in Table 4. However, as indicated by Table 5, most of the increases are due to higher prices and not increased output.

2. Consumption, Capacity, Production and Capacity Utilization

Aggregate figures comparing consumption, capacity and production do not exist and may well be impossible to compile. It is only at the sub-sector and product area levels that some information is available and where some general comments can be made.

TABLE 4

GROSS VALUE INDUSTRIAL PRODUCTION--1973-1977; AND PROJECTED PRODUCTION DURING PLAN
(£E Millions)

	1973	1974	1975	1976	1977		Estimated 1982		Average Annual Rate of Growth 1978-1982
					Target	Actual Jan-Sept	Value	Percent	
Food	561.0	608.6	698.0	774.0	861.0	655.7			
Public	445.5	481.6	548.4	591.7	656.6	505.5	759.0	25.3	6.0
Private	115.5	127.0	149.6	183.1	204.5	150.2			
Textiles	546.9	603.3	690.2	755.8	810.9	625.9			
Public	411.1	458.3	503.9	563.1	615.2	471.5	826.0	27.5	9.8
Private	135.8	145.0	186.3	192.7	195.4	154.4			
Chemicals	139.7	195.5	267.4	252.5	300.5	202.3			
Public	101.4	153.4	207.1	180.4	223.9	147.0	400.0	13.4	18.1
Private	38.0	42.1	60.3	72.5	76.6	55.3			
Engineering and Metals	244.1	319.6	385.5	446.2	527.9	391.6			
Public	204.1	271.0	327.9	381.2	458.2	337.6	950.0	31.7	25.9
Private	40.1	48.6	57.6	65.0	69.7	54.0			
Mining	7.2	5.7	7.0	7.7	11.0	6.0	60.0	2.1	27.9
Public									
Woodworking Products	38.6	39.3	39.8	60.4	51.9	39.3			
Leather Products	56.8	60.2	86.6	162.2	125.2	127.2			
TOTAL	1,594.3	1,832.2	2,174.5	2,459.6	2,688.2	2,046.0			
Public	1,169.3	1,370.0	1,594.3	1,742.1	1,964.9	1,465.6	2,994.9		13.0
Private	425.0	462.2	580.2	735.5	723.3	580.4			

¹Includes only industrial subsectors under Ministry of Industry, Petroleum and Mining, accounting for over 85% of the gross value of industrial production. Excluded are building materials, pulp and paper and military factories.

Source: Ministry of Industry, Petroleum and Mining.

TABLE 5

OUTPUT OF SELECTED INDUSTRIAL PRODUCTS
(In Thousand Metric Tons Unless Otherwise Stated)

<u>Subsector</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>Target</u>	<u>Actual Jan-Sept</u>
<u>Textiles</u>						
Cotton Yarn	182	179	181	193	221	155
Cotton Textiles	118	120	122	138	146	97
<u>Foodstuffs</u>						
Sugar	633	577	526	576	650	608
Cheese	135	135	153	147	143	125
Preserved Fruits and Vegetables	24	18	24	48	56	40
Cottonseed Oil	160	170	161	160	162	124
Oilseed Cakes	600	540	720	417	411	363
Soft Drinks (Millions of Bottles)	600	660	784	960	1,278	906
Beer (Millions of Liters)	32	29	29	30	36	29
Cigarettes (Thou- sand Millions)	17	18	21	23	26	19
<u>Chemicals</u>						
Sulphuric Acid	23	30	36	28	36	20
Superphosphate	419	465	520	493	565	373
Ammonium Nitrate 31%	210	320	400	530	665	571
Tires (Thousands)	860	814	923	859	961	715
<u>Engineering Products</u>						
Cars (Units)	5,590	8,169	11,576	9,799	13,170	9,805
Trucks and Tractors (Units)	2,761	2,342	2,825	3,807	4,521	2,203
Buses (Units)	413	360	305	207	500	315
Refrigerators (Thousands Units)	39	55	109	112	120	93
Televisions (Thou- sand Units)	49	68	77	88	130	80
<u>Metallurgical Products</u>						
Reinforcing Steel Bars	226	232	219	202	283	166
Steel Sections	87	81	105	151	181	103
Steel Sheets	167	125	211	156	289	159
Cast Iron Products	57	55	66	63	64	52
<u>Mining Products</u>						
Phosphate	540	499	428	392	690	332

Source: Ministry of Industry, Petroleum and Mining.

Textiles is one of the few areas where both production and productive capacity exceed demand. This is indicated by the net exports from this subsector. Consumption of textile products is 200,000 tons compared to production of 400,000 excluding fiber. It is expected that domestic demand will grow by about 6% a year until 1985 while the industry is expected to continue to be a major source of exports. This may put severe strains on both existing capacity and raw material supplies since physical utilization of plants is already fairly high. However, recent studies have indicated that there is room for an estimated 15-50% improvement in machine efficiency and a 325% increase in labor productivity.

While there is a net deficit of processed food, indicated by imports of over \$E200 million compared to exports of \$E24 million in 1975, this is not an accurate picture. It is impossible to estimate real demand given that any demand above domestic production in most product areas is simply suppressed. Second, almost all imports are edible oils and fats (\$E140 million) and most of the remainder is tobacco and beverages. Hence, it must be assumed that capacity and production in other areas meet "apparent" demand. It is impossible, with existing information, to estimate how much more output would be absorbed by the "suppressed" demand.

Capacity utilization in the food processing industry averages about 70%. This ranges from a low of 20% in dairy products (because plants were too far from the sources of raw materials) to 80% in sugar. The principal causes of the low utilization are shortages of raw materials due to low fixed prices, higher prices for other crops, and a lack of integration between ministries.

No figures or information are available for "chemical" industries, except for pulp and paper which represent only about 25% of the subsector's output value. Consumption of paper and boards was about 300,000 tons in 1976 compared to domestic production of 150,000 tons. The situation is expected to deteriorate further with projected consumption of 570,000 tons and production of 200,000 for 1985. The deficit is mainly due to a lack of domestic pulp and raw materials. Local substitutes, bagasse and rice straw, have not yet been properly developed. Furthermore, not enough foreign exchange has been allocated for importing pulp, even though the cost of pulp and of manufacturing paper combined is less than that of importing paper. No information is available on capacity utilization.

Apparent consumption of iron and steel, by far the most important component of the metallurgical products subsector, was about a million tons in 1975. Only 55% of this was met by domestic production even though there was a blast furnace with a capacity of almost a million tons. The problem lies in a very low capacity utilization ranging from 23% in continuous castings and 40% in rolling mills to 85% in electric arc furnaces. In fact, almost all functions of the industry are below 50% utilization while it has been estimated that it must operate at 70% to make domestic production worthwhile. The principal reasons for low utilization are a lack of integration leading to bottlenecks, poor maintenance and improperly used equipment, inadequate management and planning, poor quality raw materials and low labor productivity. The situation in nonferrous metals is not nearly as bad, with production close to consumption and capacity utilization relatively good.

Apparent consumption of engineering products was estimated to be about \$525 million in 1975 of which 40% was produced domestically. This indicated a deterioration since 1972 when over 63% was produced domestically, although the situation is exaggerated by a differential between local and world prices. The greatest deficits were in machinery (only 5.8% produced domestically), transport (34.2%), and professional and scientific equipment (3.4%). Metal fabrications (80%) and electric machinery (56.1%) showed the best performances.

There is no information comparing actual output to capacity or giving plant utilization levels. However, equipment utilization has been rated moderate and labor utilization low. The problems include a lack of management skills, poor labor performance, shortages of supplies, and the absence of feeder industries.

The most important building material, cement, has historically been an export product. However, Egypt recently became a net importer due to its rapidly-increasing construction needs together with declining domestic production of cement which has dropped at a rate of 2.5% a year since 1970. Consumption in 1976 was over four million tons, while production was just over three million, creating a need to import almost one million tons. Unfortunately, figures for nominal capacity are equated with output and thus are useless. However, it appears that capacity is close to demand. The explanation for the deficit lies in declining capacity utilization, now under 75%, caused by poorly maintained and mistreated equipment leading to frequent shutdowns, machine obsolescence, and lack of spare parts.

The situation for bricks, the other major principal building material, is impossible to analyze clearly because of the large number of small private brickyards. It appears that output satisfies demand partly because brickyards spring up around new construction projects. The crude technology does not warrant comments on capacity utilization.

In sum, it is apparent that current output in many subsectors does not come close to meeting domestic demand and imports are necessary. Although in some subsectors the installed capacity does approach consumption requirements, production deficits are caused by low capacity utilization and other factors. In fact, underutilized capacity is a problem in all subsectors, created principally by poor maintenance and use of equipment, low labor productivity, and various types of supply bottlenecks. The shortage of capital and foreign exchange, while often mentioned as an important problem, does not appear to be the critical constraint it is sometimes thought to be.

3. Investment

The most striking trend revealed by Tables 6 and 7 is the rapid growth of investment in the last few years. Total public investment in Ministry of Industry companies has increased from ₪87.5 million in 1973 to ₪212 million in the first nine months of 1977. Particularly remarkable is the degree to which actual investment has exceeded targets-- a surprise even to usually overoptimistic planners.

The growth has been equally remarkable in the domestic private sector with GOFI investment approvals rising from ₪7 million in 1971/72 to about ₪100 million in 1976 (see Table 15, page 77).

TABLE 6

INVESTMENTS IN THE PUBLIC INDUSTRIAL SECTOR
(**ME Millions, Current Prices**)

<u>Subsector</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	
					<u>Target</u>	<u>Actual</u> <u>Jan-Sept</u>
<u>Textiles</u>	<u>30.4</u>	<u>35.2</u>	<u>47.4</u>	<u>81.4</u>	<u>37.4</u>	<u>43.0</u>
Domestic	16.9	16.5	27.2	37.3	18.8	22.6
Foreign	13.5	18.7	20.2	44.1	18.6	20.4
<u>Foodstuffs</u>	<u>13.8</u>	<u>24.4</u>	<u>38.1</u>	<u>42.7</u>	<u>23.4</u>	<u>19.4</u>
Domestic	11.0	13.0	21.8	26.3	13.2	15.2
Foreign	2.8	11.4	16.3	16.4	10.2	4.2
<u>Chemicals</u>	<u>22.5</u>	<u>28.4</u>	<u>35.4</u>	<u>36.2</u>	<u>31.8</u>	<u>75.0</u>
Domestic	17.3	21.7	20.6	22.0	15.2	21.3
Foreign	5.2	6.7	14.8	14.2	16.6	53.7
<u>Engineering and Metallurgical</u>	<u>20.3</u>	<u>18.0</u>	<u>31.3</u>	<u>49.5</u>	<u>59.7</u>	<u>68.2</u>
Domestic	16.0	13.4	23.5	37.4	39.5	37.0
Foreign	4.3	4.6	7.8	12.1	20.2	31.2
<u>Mining</u>	<u>0.5</u>	<u>1.0</u>	<u>2.6</u>	<u>2.9</u>	<u>8.3</u>	<u>6.5</u>
Domestic	0.5	0.5	1.7	2.4	6.1	5.3
Foreign	—	0.5	0.9	0.5	2.2	1.2
TOTAL	87.5	107.0	154.8	212.7	160.6	212.1
Domestic	61.7	65.1	94.8	125.4	92.8	101.4
Foreign	25.8	41.9	60.0	87.3	67.8	110.7

Source: Ministry of Industry, Petroleum and Mining.

TABLE 7**INDUSTRIAL EXPORTS**
(In £E Millions)

	<u>Public Sector</u>		<u>Private Sector</u>		<u>Convertible</u> <u>Currency</u>	<u>Bilateral</u> <u>Accounts</u>
	<u>Convertible</u> <u>Currency</u>	<u>Bilateral</u> <u>Accounts</u>	<u>Convertible</u> <u>Currency</u>	<u>Bilateral</u> <u>Accounts</u>		
1973	44.4	73.8	2.5	27.6	46.9	101.4
1974	60.1	111.8	4.9	49.4	65.0	161.2
1975	60.8	111.0	3.6	55.4	64.4	166.4
1976	90.5	72.3	12.9	31.4	103.4	103.7
1977 (Target)	83.4	103.6	14.7	38.3	98.1	141.9
1977 Actual, Jan.-Sept..	93.6	59.2	11.5	17.9	105.1	77.1

Source: Ministry of Industry, Petroleum and Mining.

Actual investment has generally been equal to one-third of the investment approvals. It is only now that the policy is taking its final shape and the subsequent investor confidence is expected to create an even greater spurt of investment--particularly in the private sector.

The most troublesome aspect of the investment picture is the high foreign exchange component brought about by the need to import raw materials, equipment, and spare parts. This represents a great burden to a country with a significant balance-of-payments problem.

Another aspect of the liberalization policy is the encouragement of foreign investment. The results have been somewhat slow in coming, although the number of approved projects is large enough to have a significant impact if implemented. By the middle of 1977, 233 projects has been approved for free zones with a total planned capital investment of almost £1,000 million. About 360 industrial inland projects with foreign capital participation have been approved which plan to invest almost a billion pounds. Almost all of this capital is in foreign currency.

4. Foreign Trade

Total industrial exports in 1976 were about £200 million while foreign exchange requirements for industrial imports were £400 million. The Ministry of Planning estimates that 1977 industrial imports will be £551.4 million compared to exports of £279.4 million. The problem has already been touched on: industry manufacturing inputs must be imported (see Table 8) as well as final products to fill production deficits caused by insufficient capacity or low utilization. As

TABLE 8
FOREIGN EXCHANGE REQUIREMENTS FOR IMPORTS¹
(In ~~LE~~ Millions)

Subsector	1975			1976			Import Output (%)
	Free	Agreement	Total	Free	Agreement	Total	
Textiles	46	8	54	49	3	52	13
Food	52	19	71	60	16	76	13
Chemical	46	30	76	57	25	82	33
Engineering	42	21	63	55	12	67	27
Metallurgical	37	33	70	34	25	59	29
Building Materials	13	2	15	13	4	17	20
TOTAL Public Sector	236	113	349	268	85	353	19
TOTAL Private Sector	14	13	27	20	13	33	5
GRAND TOTAL	<u>250</u>	<u>126</u>	<u>376</u>	<u>288</u>	<u>98</u>	<u>386</u>	15
Armed Forces Needs	---	---	---	8	---	8	---
TOTAL Requirements	<u>250</u>	<u>126</u>	<u>376</u>	<u>296</u>	<u>98</u>	<u>394</u>	---

¹Figures are for imports of manufacturing inputs, while detailed statistics on imports of finished products are unavailable.

Sources: Ministries of Industry, Petroleum and Mining, and Finance; IBRD, Egypt, Informal Working Papers on Industry.

consumption increases rapidly, requiring both new equipment and raw materials and finished products, industry's external gap is increasing.

Exports have, however, been growing slowly from \$E101 million in 1973 to \$E104 million in 1976 (after reaching \$E166 million in 1975). Export potential is limited because of low labor productivity (which seriously reduces the advantage of low wages), poor machine efficiency, a high import component, and high material costs, all of which leads to high production costs. Furthermore, quality tends to be inadequate and quality and cost control nonexistent. Unless these problems are dealt with, the outlook for exports will remain poor and much greater deficits may be expected (see Table 9).

Another important aspect of the export picture is that considerably more than half of the exports are made through bilateral agreements, while relatively little is exported for convertible currency. This aggravates the severe shortage of foreign exchange and balance-of-payments problem. Although the "open-door" policy is expected to result in increased exports to convertible currency countries, there is a limit to how far this trend can go without a reduction in product costs and an improvement in quality.

By far, the best performer in terms of exports is the textile sector, with about 50% of total industrial exports and over 30% of free currency exports in 1976 (and much more if fiber exports are included). Textiles is the only industry with a positive trade balance.

The private sector accounts for 21% of total exports, but only 12.5% of free currency exports.

TABLE 9
SECTORAL DISTRIBUTION AND DIRECTION OF MANUFACTURED EXPORTS: 1973-1976¹
 (Current Prices: ₦E Thousands)

	1973			1974			1975			Free Currency	Public	TOTAL
	Free Currency	Clearing Account	Total	Free Currency	Clearing Account	Total	Free Currency	Clearing Account	Total			
Textile												
Public	23,557	49,704	73,261	24,410	80,116	104,526	17,528	78,673	96,201	34,900	62,000	96,900
Public and Private	N.A.	N.A.	N.A.	25,138	91,965	117,103	18,531	89,924	108,455	39,600	65,900	105,500
Food												
Public	9,875	11,572	21,447	18,474	12,864	31,338	23,611	14,493	38,105	18,600	3,900	22,500
Public and Private	N.A.	N.A.	N.A.	18,583	12,874	31,457	23,639	14,495	38,135	19,800	4,000	23,800
Chemicals												
Public	975	2,208	3,183	2,140	4,072	6,212	2,057	3,650	5,707	1,500	1,400	2,900
Public and Private	N.A.	N.A.	N.A.	4,483	12,638	17,121	2,945	22,650	25,595	4,200	12,600	16,800
Engineering												
Public	4,500	4,293	8,883	8,127	4,972	12,099	13,787	5,037	18,824	37,900		39,100 ²
Minerals												
Public	597	4,615	5,212	3,704	6,095	9,799	2,176	8,107	10,283	---	---	---
Metallurgical												
Private	N.A.	N.A.	N.A.	396	71	467	359	22	381	N.A.	N.A.	N.A.
Building Materials												
Public	4,703	1,384	6,087	2,865	643	3,508	1,609	1,101	2,710	---	---	---
Public and Private	N.A.	N.A.	N.A.	3,197	643	3,840	1,786	1,101	2,776	100	---	100
Leather Goods												
Private	N.A.	N.A.	N.A.	55	21,606	21,661	97	17,166	17,263	1,100	9,900	11,000
Woodworking												
Private	N.A.	N.A.	N.A.	467	4,982	5,449	499	5,184	5,683	1,100	3,800	4,900
Handicrafts												
Private	N.A.	N.A.	N.A.	436	2,361	2,797	516	2,755	3,271	700	2,400	3,100
TOTAL Public Sector	44,297	73,776	118,073	59,720	100,767	168,482	60,769	111,061	171,830	90,500	72,300	162,800 ³
TOTAL Private Sector	2,585	27,617	30,202	4,866	49,445	54,311	3,567	55,380	58,947	12,900	31,400	44,300
TOTAL Industrial Sector	49,882	101,393	148,275	64,586	158,207	222,793	64,336	166,441	230,777	103,400	103,700	207,100
Share of Private Sector in Total Exports	5.1%	27.2%	20.3%	7.5%	31.2%	24.4%	5.5%	33.3%	25.5%	12.5%	30.2%	21.4%

¹ Free currency converted at the official exchange rate.

² Includes public and private.

³ Includes ₦2.6 million of mining products.

Source: Ministry of Industry, Petroleum and Mining.

5. Employment

Employment in industry accounts for about 15% of the civilian work force. Between 1966 and 1974, employment grew at an annual rate of 4.5%. Private sector employment grew at an impressive 6.7% per year to claim a 54% share of the total by 1974 despite adverse conditions and even before the advent of the open-door policy. Total employment in industry is summarized in Table 10. Of course, much of this large share is due to the importance of workshops and artisanal establishments in the private sector. About 32% of private employment is in establishments of from 10 to 24 workers while an additional 25% work in establishments with 25 to 49 workers. Most public companies have more than 50 workers.

Labor productivity is uniformly low throughout industry, but particularly in public sector companies. Labor productivity in the public sector suffers from serious overmanning (estimates range up to a 6/1 labor redundancy ratio), poor labor utilization, inadequate training, top-heavy personnel (management and skilled technicians sometimes reach a high proportion of the work force), and lack of incentives.

D. GOVERNMENT MECHANISMS AND POLICIES

1. Organization of Decision Making

An unnecessarily large number of diverse ministries, authorities, agencies and departments participate in the planning, decision making, project implementation and operation of Egypt's industry. Of these only the Ministry of Planning is concerned with all industrial investment plans and programs whether in the public, private or mixed sectors of the economy. Since, however, it lacks any capacity for project

TABLE 10

EMPLOYMENT IN INDUSTRY
(In Thousands)

Year	Public Sector		Private Sector		Total		Share of Private Sector (%)
	Number	Index	Number	Index	Number	Index	
1966/77	445.0	100.0	401.7	100.0	846.0	100.0	47.4
1972	505.3	113.0	589.0	146.6	1,094.3	129.2	53.8
1973	514.9	115.7	597.5	149.0	1,112.4	131.4	53.7
1974	526.3	118.2	623.2	155.0	1,149.5	135.7	54.2
1976	565.0	126.9	N.A.	N.A.	N.A.	N.A.	N.A.

Source: Ministry of Industry; IBRD, Small-Scale Industry.

GOVERNMENT MECHANISM AND POLICIES

Organization of Public Sector

An increasingly larger number of diverse ministries, departments, agencies and departments participate in the planning, development and execution of the public sector. Of these, the Ministry of Planning is concerned with all industrial investment plans and programs within the public sector of mixed economy. However, it lacks any capacity for production.

analysis it does little more than solicit lists of on-going and proposed new projects from other agencies and adjust them by negotiation, persuasion and exclusion, to fit a sectoral investment budget determined from a macroeconomic model. The sanction of exclusion is seldom resorted to, since it frequently results in an appeal to the Council of Ministers by the aggrieved agency and further rounds of negotiation designed to lead to a face-saving compromise. There is little further to be said about this ministry except to state that until it acquires a capacity for project analysis (in all sectors of the economy) the Ministry of Planning's function will remain vague and comparatively unimportant.

By far, the most important center of investment decision making in Egyptian industry is the Ministry of Industry and its satellite body The General Organization for Industrialization (GOFI) which must approve all investments in excess of $\text{E}500,000$. GOFI is also responsible for investment feasibility studies (both in-house and by outside consultants) and evaluates and supervises the implementation of all public sector industrial investment projects that are not subject to the control of other ministries. GOFI's authority and responsibilities also cover all private sector projects, including those subject to the approval of the General Authority for Foreign Investment except that in these cases GOFI does not have the power of veto. GOFI is a semi-autonomous body with a board of directors that includes representatives of scientific and academic institutions and private sector interests but final authority in all matters rests with the Minister of Industry who is its Chairman. Day-to-day operations are under the direction of a

Deputy Chairman who is equivalent in rank to a Deputy Minister (of industry).

An important industrial investment planning and implementing body outside the framework of GOMI but subject to at least the policy control of the Ministry of Industry and Petroleum is the Iron and Steel Complex which is directed by an executive president. The Complex should not be confused with the operating enterprise, the Iron and Steel Company, although it is supervising an iron ore concentration project at an investment cost of \$E50 million (\$E23 million in the 1978-82 Plan period) to provide an improved raw material for this company. Its other projects are the Abu-Thartur phosphorite project with an estimated cost of \$E361.8 million (\$E248 million in Plan period), and a second integrated steel plant to be constructed on Egypt's northern coast and estimated to cost \$E150 million (\$E100 million in the Plan period). The Iron and Steel Complex appears to be used as a planning and executing agency for unusually large investment projects involving substantial additions to the country's infrastructure in addition to industrial or mining equipment.

Despite the existence of a Ministry of Industry, Petroleum and Mining and its 1,300-man planning and project execution arm, other government agencies are scheduled to assume responsibility for detailed planning and implementation of 32% of the total public sector industrial investment projected in the 1978-82 Economic Development Plan. This figure somewhat underrates the importance of the Ministry of Industry since it has a strong voice in determining the nature and extent of private and joint venture investment estimated to amount to

\$E709 million (21% of total investment) during the Plan period. The logic and operational advantages of subjecting a significant segment of industrial activity to three ministers whose principal activities are non-industrial--in terms of planned 1978-82 total industrial investment, Housing and Reconstruction (principally cement) 14.6%, Military Production 6.2% and Supply 3.4%, and the remaining 7.4% to a multiplicity of ministries and agencies--is difficult to appreciate. Government officials are able to explain it only in historical and political terms.

Prior to January 1, 1976, industrial enterprises in Egypt were subject to a fairly high degree of control in their planning and operating policies and procedures by General Organizations for industrial sub-sectors. These bodies exercised varying degrees of control over the companies and operated in many ways as holding companies. They were generally unpopular with enterprise managers who tended to resent their insulation from the top levels of Government represented by a cabinet minister and ministry secretaries. The Supreme Councils that replaced the General Organizations on January 1, 1976, appear to have a much less active role to play. Their large Boards meet only once a year for a short period and their research staffs appear to do little more than collect statistics. Plant managers now have day-to-day contact with their relevant ministries but find that the rules, regulations and policies to which they were subjected by their General Organization have not changed, and that they must now take their turn with many other public sector company managements in securing the attention and action of ministry officials.

There is no evidence that bureaucratic delays and frustrations have been greatly reduced by the new arrangement and it is possible that at least the smaller companies have no fewer difficulties in their direct relations with ministries than they had with their General Organizations.

2. Flow of Decisions

The decision making process in Egyptian industry differs according to the size and scope of the investment project and the scale and national importance of the production operations. New investment projects requiring less than £E500,000 may be initiated and implemented at the enterprise level without formal permission from higher authority if surplus funds are available within the enterprise. An enterprise may also introduce new products for uncontrolled domestic and export markets if this can be done without interfering with the attainment of planned output targets and, again, if the necessary funds and materials are available or can be secured. Major investment decisions and the determination of production output targets are, however, made at Ministerial, Cabinet or even Presidential level. Enterprise managers do participate in developing major plant extensions and even new ventures. When the necessary approvals have been secured, the enterprises normally implement the projects themselves, subject to GOPI's supervision in the case of Ministry of Industry projects. At the present time major renewal and rehabilitation projects are being implemented by two of the country's largest textile plants with loans of £E52 million from IBRD and \$96 million from USAID.

All investment projects are reported to the Ministry of Planning by the sponsoring Ministry but this appears to be little more than a formality particularly if investment funds are available from foreign loans through the Ministry of Economy, foreign investment through the Investment Authority, or from private sector sources. Major expansions of productive capacity to be financed from domestic funds such as the \$60 million of planned new investment in the cane sugar industry, may meet some resistance from the Ministry of Planning on budgetary considerations but these do not appear to be particularly difficult to overcome.

The completion of the many steps in the planning and implementation of investment projects may, of course, take many years. It is not unusual for a major project to be brought into operation seven or eight years after its initiation. Presumably, modest extensions and modernizations can be completed more quickly, but even in these cases, serious delays must be expected.

Decisions relating to the pricing and production of strategic commodities such as cloth, bread, sugar, edible oil and soap are made primarily by the Ministry of Supply with little regard to their effects on the profitability of the industrial enterprises concerned. These are essentially political decisions and if subsidies are necessary they are provided by the Ministry of Finance. There is a formal procedure under which the Ministry of Industry's Pricing Committee evaluates the implications of proposed price changes and submits its findings to the Central Organization for Price Planning (an agency of the Ministry of Planning) and the Central Auditing Organization (affiliated

to the People's Assembly) but major changes are unlikely to be suggested and the process usually ends by the promulgation of a Ministerial decree fixing the price under examination.

3. Assessment of Mechanism for Allocating Investment Funds and Foreign Exchange

a. General

The allocation of investment and foreign exchange funds in Egypt is achieved by an administrative and quasi-bargaining process that is more concerned with materials balances and consumption levels of certain strategic commodities than the efficient use of economic resources in the light of available current and anticipated future needs and Egypt's economic development objectives and prospects.

There is little evidence that either the Ministry of Planning or the other agencies concerned with investment planning in the industrial sector subject project proposals to an analysis and appraisal procedure designed to rank them in the light of social and economic criteria. To the extent that projects are evaluated, this is done on the basis of administered prices of domestic and imported raw materials and controlled or subsidized product-market prices with a resultant distortion in the efficiency of resource allocation.

Egyptian industry has been called upon to provide a basic ration of consumption goods for the country's growing population and this it has, for the most part, succeeded in doing. Since consumer prices and basic ration entitlements have remained

comparatively stable in the face of unusually large increases in the world prices of raw materials and food stuffs, industry has absorbed substantial resources to finance current production and the construction of additional capacity. Egypt's failure to adapt to upward external price changes by reducing domestic consumption has led to a serious decline in the level of domestic savings and greatly increased foreign borrowing. The Ministry of Planning estimates that import price inflation amounted to E£2,807 million during the period 1974-76 alone and claims that this has been a major cause of Egypt's need for foreign financial assistance. An alternative view is that politically determined levels of private and public consumption and public investment have been maintained despite a seriously deteriorating external financial condition.

b. Priorities

There is evidence of the absence of a carefully considered hierarchy of priorities for the evaluation and selection of investment projects in the industrial sector. Consumer needs and the utilization of domestic raw materials are the two priorities most frequently mentioned by Government officials. The Five-Year Plan (August, 1977) speaks of a reordering of priorities and states that the priorities for industry are as follows:

1. Projects for replacement and maintenance;
2. Projects underway--particularly those for the satisfaction of the people's needs such as sugar, edible oils, canned foods, clothing and shoes. It is admitted

that current projects are lagging: only 13% are nearing completion and a further 14% are more than 50% complete.

3. New projects with special attention to the promotion of increased exports and the reduction of imports.

It is interesting to see that industry's contribution to the balance of payments is regarded as important but it should be noted that it is preceded in importance by the satisfaction of the people's needs. Although it is difficult to dispute the general approach to investment priorities stated in the Plan, a much more sophisticated procedure of project analysis and evaluation than is currently applied, i.e., one that takes into account the present and probable future economic and financial condition of the Egyptian economy, is urgently needed.

c. Impact on Employment and Income Distribution

Since there appear to be no real selection criteria for the evaluation of projects by the ministries responsible for planning industrial projects or by the Ministry of Planning itself, it seems unlikely that job creation is consistently kept in mind. In fact, there is evidence of the use of technology that would be more appropriate in a high-wage, labor-scarce economy than in Egypt with its relatively low-wage rates and plentiful supply of most types of labor.

The new Five-Year Plan and other official documents speak of providing employment on a substantial scale but there is no evidence that employment creation is a specific project selection

criterion or that a policy decision has been taken at a high level to use intermediate and other labor-intensive methods of production whenever possible.

Industry--particularly public sector industry--does, of course, provide a substantial amount of employment by carrying out Government instructions to employ more workers than it needs, and because of the difficulty of terminating workers even for unsatisfactory performance. The improvement of enterprise efficiency and the reduction of production costs in Egyptian industry would undoubtedly involve a significant reduction in the industrial labor force at least until new plants and extensions lead to a genuine need for additional workers. There is evidence of confused thinking on this issue in the new Plan document and elsewhere.

Since investment allocation decisions do not, in fact, favor labor-intensive methods of operation and have favored certain highly capital-intensive projects such as the Halwan steel mill and the aluminum plant, they do not contribute to the more equal distribution of income to the extent that might have been possible. In fact, the tendency to overman public sector industrial enterprise compensates for the failure of the investment allocation process to favor labor-intensive projects with their positive effect on income distribution.

d. Impact on Use of Savings

The allocation of investment funds to industry during the period of nationalization led to the heavy use of domestic and foreign savings. Savings use was, however, very unevenly distributed throughout the industrial sector. For example, massive investments were made in heavy industry, and the employment-providing and foreign-exchange-saving textile industry was allowed to deteriorate for want of domestic and foreign exchange funds for repairs, maintenance, and at certain times, to maintain operations.

There is evidence of a somewhat different approach in the new Five-Year Plan. Although there are a number of large, highly capital-intensive projects, they are scheduled for development on the basis of foreign investment. Whether the financial support necessary for these investments will be secured is, of course, as yet unknown. Loan commitments have, however, been secured for a chemical fertilizer plant at Talka (Arab Fund \$80 million; World Bank Group \$20 million), a second fertilizer plant at Abu Kir and a spiral welded steel pipe plant (West Germany DM546 million), two synthetic fiber plants (France FF42 million, U.S. \$15 million), and certain other major projects. Whether the terms under which they will operate will result in the generation or additional use of domestic savings is a matter that will need serious attention at a high level of Government.

e. Impact on Balance of Payments

The patterns of industrial development that have evolved in Egypt have resulted in a fairly heavy use of foreign exchange on current account. For example, 1977 estimated foreign exchange receipts of industrial exports amount to \$1,244 million in comparison with estimated payments for intermediate goods of \$2,205 million. This is not, of course, unreasonable since Egyptian industry is strongly oriented towards import substitution and, apart from cotton, is not well endowed with domestic industrial raw materials. It does, however, suggest that the balance-of-payments implications of new investment projects in the industrial sector should be more carefully evaluated than in the past. The present structure of Egyptian industry appears to have a heavy foreign-exchange-using bias. Administrative decision making in the allocation of foreign exchange to industrial enterprises for raw materials and spare parts may have aggravated this situation in the past. Improved procedures for the use of IBRD and other lenders' foreign exchange funds have recently been instituted with apparent substantial improvement in production and export levels.

4. Assessment of Pricing Policy

Price control is a dominant feature of the Egyptian economy in all sectors and for most raw materials and consumer products. Controlled prices for agricultural raw materials, such as cotton, sugar and wheat, are paid to farmers, and market prices of the principal consumer goods, including some unrationed goods, are determined by the Government.

Private sector industry is subject to a certain degree of price control but this is not strongly enforced in all areas. Utility prices are determined by the Government at generally low levels and many dwelling units are subject to rent controls but these are, in many cases, evaded by arrangement between the parties to make additional payments.

Under these conditions, administered prices often interfere with efficient allocation of resources and with adequate responsiveness to the demand for output. Farmers and industrial enterprise managers can dispose of minor crops, by-products and supplementary products at free market prices if this does not prevent them from meeting their production targets for which they are assured of a market. Public sector industrial companies are in most cases little more than processing agents for Government departments that provide them with materials and receive their output. Some items (certain metal and textile industry products) go to export markets but these are frequently to bilateral countries at agreed prices. Some textile fabrics are sold in hard-currency markets and the major textile companies are planning to develop these markets aggressively in future years.

Many public enterprise managers appear to lack the incentive to strive for the achievement of increased productive efficiency and higher profits since these might be taken by the Government or eliminated by a change in the margin between their input and output prices. Their own salaries are, of course, also controlled by Government and, although as public sector employees they are not subject to the same restrictions as civil servants, their ability to

share in any profits they succeed in making is severely limited. In some cases, fringe benefits such as highly-subsidized housing, the provision of servants, and the use of an automobile ensure a reasonable standard of living for certain managers in public sector industrial enterprises, but their rewards do not appear to be comparable to those offered in private industry.

There seems to be a wide measure of agreement that with certain notable exceptions public sector industrial enterprises are inefficiently managed and that their subjection to controlled input and output prices with the consequent difficulty in making or keeping profits is a primary cause of this unsatisfactory situation.

A further serious disadvantage of the Egyptian pricing system is that it prevents efficient companies from accumulating funds to apply to expansion projects and new ventures. Funds for expansion and new ventures are provided by the Government so that the efficient enterprises do not themselves generate the savings that are needed for growth, improved efficiency and reduced costs. In most economically developed countries the generation and reinvestment of capital funds by successful enterprises makes a major contribution to the level and direction of economic growth. If the "open-door" policy is to play a major role in Egypt's future economic development, industrial enterprises must be permitted by realistic pricing and taxation procedures to accumulate and reinvest substantial funds from their business operations.

Present pricing policy also has a negative effect on the balance of payments. The secured domestic demand and possible loss to the

enterprise of foreign exchange earnings unless attractive proposals for their immediate use can be developed reduces the incentive to produce for export.

Since the Government's pricing policy is an integral part of its policy to ensure a reasonable level of income equality in Egypt, it is unlikely and undesirable that it should be immediately and rapidly dismantled. It is, however, desirable that a degree of economic purpose should be restored to the price mechanism so that it can influence the flow of domestic and imported economic resources into their most productive uses.

E. RESOURCE BASE

1. Introduction

Egypt is not particularly well endowed in terms of natural resources. Although there is sufficient petroleum for exports and some mineral resources, the size of the deposits are not at the level needed for considering them as leading sectors in the development program. Land resources are also limited.

Egypt's industrialization must, therefore, draw on the country's human resources which, fortunately, are relatively good for an LDC. The technology base, i.e., institutions and technically-trained manpower, is also quite good and represents a real asset with which to build up the industrial sector. The capital needed for mobilizing the manpower, technology and material inputs for industrialization is also now available, by virtue of the keen interest being shown by industrialized and Arab nations in Egypt's development. These resources, which represent the ingredients for the industrial program, are briefly discussed below.

2. Manpower

a. Labor Force Characteristics

Manpower is an abundantly available resource in Egypt. However, the manpower resources will have to be more productively and efficiently utilized to ensure Egypt's successful industrialization.

The total labor force includes roughly ten million people, of which approximately two-fifths (four million) work in urban areas. Manufacturing activity accounts for about one-quarter (over one million) of the urban labor force.¹

Open unemployment in the urban labor force is in the order of only 4%. Underemployment and hidden unemployment (i.e., lower-than-average productivity employment), however, are substantial and are accentuated by the drift of unskilled rural labor into urban sectors. Urban areas are, therefore, under pressure to absorb their own naturally expanding labor force as well as the overflow from rural areas.

The occupational structure of the industrial sector in Egypt is somewhat similar to post-World War II European countries. In 1974, in the public sector, 5.4% of those employees were professional and technical workers, 2.4% were administrative and managerial workers, and 82.7% were manual workers. This

¹For international comparison purposes, or as a basis to draw judgments for industrialization, only the urban labor force should be used. In 1974, Egypt's urban labor force consisted of 3.9 million people, including 120,000 under age 12 and over age 64. The large rural labor force (dominated by the agricultural sector) distorts aggregate national quantitative measures.

occupational structure reflects a low proportion of managerial workers and high proportion of manual workers. As Egypt progresses with industrialization, it would be expected that its occupational structure will approach that of other industrialized countries.¹

Average productivity in terms of output per worker is significantly lower than in industrialized countries and has not been growing in the last five years.² In the public sector low productivity is generally attributed to (1) the employment policy forcing overstaffing, (2) the labor policy precluding elimination of unproductive workers, (3) low wages, (4) lack of incentives, and (5) poor overall management.

In the private sector, productivity is low in small-scale industry, i.e., undercapitalized activities such as manufacture of shoes, furniture and arts and crafts; productivity is high and comparable with international standards in modern joint venture activities.

¹It is conventionally assumed that there exists a relationship between an occupational structure and technology level. That is, a certain level of technology in a country has associated with it a specific combination of capital and labor which has a given administrative organization and group of production workers having a certain occupational composition. The higher the technology level, the greater the proportion of professional, technical and administrative workers. In France and England, for example, in the manufacturing sector, manual workers accounted for about 72% of the work force while professional, technical and managerial workers were about 10%. In the United States in 1970, the proportions were 68% and 15%, respectively.

²Productivity in Egypt is roughly estimated at 10-80% of international levels. Formal productivity measures for Egypt are meaningless since the forced redundancy of workers dictated by the employment policy render the statistical base useless.

The aggregate low productivity levels do not imply that workers are inherently incapable of higher levels. The individual worker capability and productivity potential has never been challenged. Indeed, there are workers with skills and capabilities comparable with any international standard. Furthermore, it is generally acknowledged that under appropriate training and management conditions, the average productivity could be raised to international standards.

The educational background of the labor force is generally poor. The illiteracy rate in the urban labor force is 35%. Only 11% of the urban labor force has received education above secondary school (12th grade) level. In public sector industry, about 5% of the work force has reached a level of less than preparatory school, 18% less than secondary school, 1.5% post-secondary school and less than university, and over 4% has reached university level.

There are more university graduates in the labor force than workers with only preparatory school education. Again, this is partly due to the employment policy guaranteeing jobs for university graduates and to the cultural trait of Egyptian society which accords high status to education.

b. Employment Policy

The employment policy guaranteeing jobs in the public sector to all university and technical school graduates unable to find employment elsewhere has been pursued since 1961-62 and has led to excessive overstaffing. Estimates of excess manning in many public sector enterprises range from three to six times the requirements.

The employment policy is based on the social objectives of employment maximization and provision of human dignity rather than the industrial objective of production efficiency maximization. Thus, the public sector has served dual roles as a productive sector as well as a welfare system.

c. Labor Policy

Egypt's labor policy of virtually guaranteeing employment security to all workers, has been pursued since 1961. Dismissals by management are almost impossible, except in cases of criminal offenses. Resorting to court action, however, in most instances, is only favorable to labor as court proceedings take a long time.

The principal labor legislation is Law 91 of 1959. It deals with working conditions, fringe benefits, employment security, leaves of absence, minimum wages, social insurance, collective bargaining and other aspects of labor considerations. Law 61 of 1971 includes regulations on employment in the public sector. Law 26 of 1954 regulates the operation of joint stock companies. Provisions of interest in these Laws are summarized in Appendix C.

d. Education and Training

The Ministries of Education and Higher Education have responsibility for formal public and private non-university education. The university system is autonomous. The Ministries of Agriculture, Health, Housing and Reconstruction, Industry, Petroleum and Mining, Tourism, Communications, Planning, and Manpower and Vocational Training have some responsibilities in formal

vocational and management training. In addition, large public sector companies provide formal on-the-job training.

Six years of compulsory primary education (grades 1-6) are followed by three years of preparatory level (grades 7-9), and three years of secondary level (grades 10-12) education. Technician training occurs at both secondary level technical schools (agricultural, commercial, industrial) and post-secondary technical institutes (e.g., drafting, electronics, etc.). Degree programs are offered in higher technical institutes and universities with four to six year programs. For a summary of the various education programs in Egypt, see Appendix D.

Government expenditures on education was slightly over E300 million in 1976, more than double the expenditures in 1970.

Education expenditures represent about 6% of the GDP in 1976 (4.4% in 1970). Operating education expenditures represent about 26% of central Government total operating expenditures; education capital expenditures represent about 2% of central Government capital budget.

3. Technology

It is widely accepted that capacity to utilize technology (and in the long run, to produce new technology) is a requisite for national industrial success. In this respect Egypt is in a favored position among developing countries, since the nation is endowed with an unusually rich human resource base in science and technology and an elaborate technology organization structure. It is estimated that there are some 6,000 well-educated scientists and engineers at work

in research and development in the universities, the National Research Centre, in research centers supervised by ministries, and in autonomous technical organizations and laboratories. Service units are available for setting standards and quality control testing, providing technical information and documentation, instrument maintenance and repair, carrying out natural resource inventories, and studying management and productivity. There exists also a high-level science policy-making and research-financing organization--the National Academy of Scientific Research and Technology.

In this setting, the relationship between technological strength and industrial efficiency and growth is recognized in various ways. The National Academy's current financial support of about 125 research projects includes 29 in industry-related fields at the level of \$E1.4 million. The National Research Centre estimates that perhaps 30% of its in-house effort supports the productive sectors of the economy (including industry) directly or indirectly. The industrially-oriented programs are monitored by an Industrial Research Council whose 32 members include 19 from the research institutes and universities and 13 from industry. There are specialized committees of this Council concerned with the research needs of the chemical, metal, food, textile, and engineering industries broadly as well as with more specialized problems such as those of wrapping and packaging, industrial waste disposal and the behavior of Egyptian cotton under chemical treatment. Other specialized Councils, including the Petroleum and Mineral Resources Council, the Energy Research Council, and the Building Research and Technology Council, also deal with research in industry-related areas.

The National Research Centre operates technical training programs in support of Egyptian industrial development. In 1977, there were 19 such programs, carried out in metallurgy, glass and ceramics, dyeing and finishing, chemistry and technology, detergents, paints, and food and dairy technology. Some 219 persons attended these training programs during the year.

Applied research support for manufacturing companies is available from the following specialized research institutes, financed through the budget of the Ministry of Industry and Petroleum (and the National Academy in some instances).

1. Central Metallurgical Research Institute

This Institute maintains a staff of 100 and was budgeted in the 1976-1980 Five-Year Plan for an expenditure of £E2,390,000 of which £E800,000 represents foreign exchange. New facilities are under construction in Tebbin, the center of the Egyptian metallurgical industry complex. Support for the program comes half from the metallurgical industries and half from the Academy. UNIDO is also active in support of the Institute at the level of \$2.4 million. The Institute has research contracts with industry involving evaluation of iron, phosphate, bentonite, and magnesium and bromine domestic raw materials, alloying of chromium steel, development of steel wire production, and other metallurgical process studies. It also promotes training for engineers working in local metallurgical industries.

2. Engineering and Industrial Design Development Centre

The principal facilities of the Centre are located in Giza, near Cairo, and house the majority of some 300 employees, six full-time U.N. experts, and short-term specialists. The program emphasizes industrial product design and development, capital goods equipment design, production technology and tool design, and process development; support facilities include a mechanical and a heat treatment workshop and mechanical laboratories. In 1977, there were 22 training courses in a variety of subjects offered at the Centre, each for about 25-35 participants over a one- or two-week period. In addition, the Centre provides on-the-job training for engineers and designers in various specialized fields over periods ranging from two months to a year.

3. Electronics Industries Research and Development Centre

This Centre operates on the premises of the public sector Nasr Television Company. New facilities are under construction. With employment of 48 and a budget in the 1976-1980 Five-Year Plan of £E800,000 of which £E300,000 were to be in foreign exchange, the Centre concentrates on developing electronic instrumentation for use in Egyptian industries. There is support from UNIDO.

4. Textile Development Centre

This Centre is still largely on paper, with a personnel complement of only four. Facilities are said to be under construction.

Planning for a plastics industry center and a fertilizer industry center, to be managed along lines similar to those described, is also under way. Somewhat outside the conventional definition of industry centers is a Petroleum Research Institute, administered by a 12-man board of which the Chairman, ex officio, is the Chairman of the Egyptian General Petroleum Authority; five members are supplied from the petroleum industry, five form the Institute's own staff, and one from university staff.

Despite these encouraging features, technological support for industrial development in Egypt is limited in a number of ways, many of them well-recognized by the nation's technology policy makers. Most significant is the long-standing orientation of scientists and engineers to academic measures of professional achievement--the publication of technical papers rather than solution of practical operating problems. Thus, in stating the science policy objectives of the country the President of the Academy of Scientific Research and Technology in December, 1976, wrote:

"The ultimate goal to be achieved is to effect a drastic change from a 'self-oriented' research into a multi-disciplinary customer-oriented research through the mobilization of the scientific capabilities to the heart of the national problems."

Changing the prevailing orientation, so far as industrial research is concerned, is made difficult in part because Egypt has historically relied on the import of industrial technology in the form of turn-key plants, based on foreign research and development work on such

technology, or even for trouble-shooting, tend to remain abroad. Even the ambitious plans now in the minds of Egyptian technology policy makers do not encompass a radical change in this condition in the near term, although such is clearly a long-range goal. Some evidence that much time and effort will be necessary is the absence, even from current plans, of investment in pilot plant facilities suitable for indigenous industrial process development beyond laboratory scale.

The wealth of trained technological talent produced in Egypt's universities has tended to flow to other countries through emigration in the face of limited economic and career opportunities for Egyptian technologists at home and the high pay offered in Arab petroleum exporting countries abroad (e.g., two to ten times the domestic salary). These conditions have been made more constraining over the last 20 years by shortages in Egypt of foreign exchange needed to maintain or acquire equipment, to finance international travel and education, and to secure specialized technical assistance from abroad (except through United Nations channels).

Significant efforts to overcome some of these constraints are under way. The fundamental shift in technology policy goals away from purely academic achievement, as enunciated by the President of the Academy, is referred to above. Two major new science and technology initiatives which will support the new policy are also under way, with USAID financing. One is a project involving assistance from the U.S. National Academies of Science, Engineering, and Medicine, in organizing and directing the Egyptian scientific community toward

dealing with the practical problems which inhibit economic development and social improvement in Egypt. The other is a cooperative effort between the Massachusetts Institute of Technology and Cairo University ("M.I.T./Cairo University Technological Planning Program") aimed at expanding expertise in technical planning and project analysis within Government ministries. Both of these projects, just now getting started, will directly impact on Egyptian capabilities for effective use of technology in support of industrial development (as well as in other sectors) in the medium and longer-term, that is, five to ten years from today. In the shorter term, it is clear, Egyptian industrial development will be heavily dependent for modern technology upon the resources of foreign firms, marshalled through the "open-door" policy. This can be made available not only through the establishment of turn-key manufacturing plants as in the past, but also through expanded programs of technical assistance in Egypt from U.S. and other foreign sources and training abroad for Egyptian technologists and managers of technologically-based enterprises.

4. Capital

Since the socialization of the Egyptian economy in the early sixties, the national budget has been the principal source of capital for new investment in industry and most other sectors of the economy. To the extent that the profits of industrial enterprises are paid into the central budget, there has been a certain amount of self-financing, but there is no evidence that any attempt has been made to ensure an equality between industrial earnings and the flow of

domestic and foreign resources into industrial development. In fact, there has been an aggressive policy of expanding traditional industries and broadening the industrial structure by establishing new ones. It is probable that the agricultural sector has provided most of the domestic resources that have been absorbed in Egypt's industrial expansion since the prices of major crops have been controlled (frequently at levels substantially below world prices) and industry, as a processor of agricultural crops, has benefited from this as have industrial workers and other urban dwellers whose food, basic clothing and utility prices have also been controlled at low levels.

With the availability of domestic investment funds from the national budget and of financial resources from Eastern Bloc countries amounting to an estimated \$800 million during the period 1968-1973, it does not seem to have been particularly difficult to arrange for the financing of major industrial projects at that time.

Since 1973, a number of other sources of external financial support for the Egyptian economy, in general, and industry, in particular, have been found. Of these, the Arab Governments have been by far the most important. Grants from these sources amounted to \$1,264 million, \$988 million and \$635 million in 1974, 1975, and 1976, respectively. In April, 1977, the Gulf Organization for the Development of Egypt (GODE) made a loan of \$1,475 million to the Central Bank of Egypt.

Arab Governments, through the agency of the Arab Fund for Development and the Kuwait and Abu Dhabi Funds for Development,

have joined with the World Bank Group to provide loans on concessional terms to a urea fertilizer project (IDA, \$20 million, Arab Fund \$22.8 million, Kuwait Fund \$35 million and the Abu Dhabi Fund \$14.4 million). The Arab Fund joined the World Bank in a major textile mill modernization project to which the former has agreed to lend \$35 million and the latter \$52 million. Projects evaluated by the World Bank and financed jointly by the Bank and Arab lending organizations may offer a useful tool of industrial development in Egypt. The Bank Group is also assisting Egypt's industrial development by providing loans for industrial sector raw materials, intermediate goods, spare parts, replacement equipment and technical assistance (two loans each of \$70 million signed in 1974 and 1977).

USAID has made loans on highly concessionary terms to the Ministry of Industry for a wide range of individual projects--particularly in food, cement and textile production. A substantial proportion of these funds remain to be disbursed. Additional loan assistance for Egyptian industrial development has been secured from West Germany, France, Denmark and, in small amounts, from certain other countries. For further details of foreign loan assistance to Egyptian industry see Appendix E.

F. ROLE OF THE PRIVATE SECTOR

1. The Private Sector in Perspective

The private industrial sector in Egypt was essentially limited to small-scale manufacturing following the nationalization of industry in the early 1960's. Although statistical information on the private

sector is fragmentary, an analysis by an IBRD Mission¹ in March-April, 1977, suggests that 85% of industrial establishments employing 500 persons or more were in the public sector; the public sector share was 65% in the range of 100-499 employees; 49% in the 50-99 employee range; and finally, only 8% of companies with 10-49 employees. Establishments employing less than 10 employees are considered in the artisanal sector and are almost entirely privately-owned. The number of public enterprises employing less than 100 employees has declined in the last decade following regrouping and amalgamation of the public enterprises which were reduced in number from 822 in 1966 to about 200 in 1977.

Nevertheless, the IBRD Mission estimates that small-scale industry accounts for about one-third of total value added in industry and for 54% of total industrial employment (in 1974). At present, there are estimated to be almost 4,000 privately-owned establishments in Egypt employing 10 or more workers representing a total work force of about 122,000. Companies employing 10-50 employees (the IBRD-defined small-scale sector) account for approximately 90% of all these private establishments and account for an estimated 57% of total private employment (excluding the artisanal sector).

¹IBRD, Survey of Small-Scale Industry.

To date, the private sector has been virtually excluded from capital goods industries and tends to be in consumer goods and those industries where economies of scale are not very important. Thus, the private sector has been a residual sector owing and operating relatively small companies in such industries as furniture and woodworking, wearing apparel, leather (shoes), food processing (bakeries), and printing. Table 11 shows estimates of the private sector share in gross value added in manufacturing by the private sector.

The most recent available data showing the size distribution of private sector establishments in terms of number of companies and number of workers covers 1970/71. The size distribution at that time is shown in Table 12.

2. Nationalization of Industry and Its Consequences

Until 1952, when Gamal Abdel Nasser came to power, the state's role in the economy was limited to infrastructural investment, mainly in the agricultural irrigation system, and social services. Early in the Nasser regime it was recognized that there was a need to encourage the Egyptian private sector in industry and banking to play a more dynamic role in investment and industrial expansion. Foreign private investment was welcomed and, in 1953, a fairly liberal foreign investment code was developed.

With the invasion of Egypt by Israel, France and Britain in November, 1956, however, all French and British assets in Egypt were seized and placed under state control. The core of the interests taken over consisted in seven major banks and five insurance companies.

TABLE 11
PUBLIC AND PRIVATE INDUSTRIAL OUTPUT BY SUBSECTOR, 1976

	<u>Public</u>	<u>Private</u>	<u>Total</u>	<u>Share of</u> <u>Private Sector</u>
	(₹E Millions)			(Percent)
Textiles	563	193	756	25
Foodstuffs	592	183	775	24
Chemicals	180	72	252	29
Metallurgy ¹	382	65	447	15
Engineering (1975) ¹	180	42	222	19
Building Materials ¹	77	17	94	18
Leather and Woodworking	---	177	177	100

¹ From IBRD, Survey of Small-Scale Industry. The Ministry of Industry combines metallurgy and engineering and does not administer building materials. Output estimates of two sources differ slightly.

Source: Ministry of Industry, Petroleum and Mining.

TABLE 12

SIZE DISTRIBUTION OF PRIVATE SECTOR INDUSTRY

<u>Size of Establishment by Employment</u>	<u>Number of Establishments</u>	<u>Percent</u>	<u>Number of Workers¹</u>	<u>Percent</u>	<u>Average Employment per Establishment</u>
10 - 24	2,572	66.6	39,213	32.1	15
25 - 49	923	23.9	30,343	24.8	33
50 - 99	214	5.5	14,468	11.9	68
100 - 499	142	3.7	26,902	22.0	190
500+	<u>10</u>	<u>0.3</u>	<u>11,184</u>	<u>9.2</u>	<u>1,118</u>
TOTAL	3,861	100.0	122,110	100.0	31

¹ Including employers.

Source: Central Agency for General Mobilization and Statistics, December, 1975, as reported by IBRD Mission.

At about the same time, the Minister of Industry (the Ministry was formed for the first time in 1956) began to move in the direction of starting up new state-owned heavy industries and establishing a national plan covering both the private and public sector. The view was advanced that if the national goal was industrialization, then the public sector must play the leading role in capital formation. A major step toward the consolidation of the public sector was the nationalization of the Misr Bank and the National Bank in 1960. This gave the state control not only over Egypt's largest commercial bank and another that fulfilled the functions of a central bank, but over a considerable range of industries (shipping, publishing, hotels, insurance, chemicals, pharmaceuticals, cement, edible oils, and roughly 50% of Egypt's total spinning and weaving output).

In 1961, sweeping nationalizations took place which resulted in the state control of all private sector firms engaged in foreign trade, all banks, insurance and shipping companies, and most large companies in commerce and light manufacturing. In the following years, politically-motivated dequestration followed and the state began to move into wholesale and retail trade by opening cooperatives to sell basic foods at fixed prices. Only relatively small-scale enterprises, mostly employing less than 50 workers, remained in private hands. By 1965, however, the public sector reached its peak and has not grown substantially since.

After the nationalization of private industry, very few managers raised in a competitive business environment were left in

Egypt. Many of the businesses had been run by foreigners who left; top-level Egyptians also left the country to pursue new careers in the Middle East or Europe. The companies most depleted of management talent were the large family companies (an estimated 80 or more) because family members dominated most management positions. Banking and insurance companies were much better off for, although they lost foreign top executives, a trained second level of management remained. The Misr Bank companies were perhaps the best prepared for they had training systems in place and capable Egyptian managers; the foreign oil companies were in a similar situation. Nationalized companies depleted of management were generally taken over by military or university personnel who often learned management by trial and error.

In addition to the initial large-scale loss of trained management, the lack of a competitive environment in Egypt after nationalization led to a virtual lost generation trained in management decision making under uncertainty, a shortage of industrial entrepreneurship, the disappearance of salesmen, and neglect of financial management as a profession.

3. Recent Changes in the Private Sector Environment

The Sadat Government has gone to great lengths to welcome foreign businesses to Egypt after almost two decades of hostility toward foreign capital. The aim appears to be the use of Western entrepreneurial instinct to stimulate more initiative in Egyptian industry and introduce Western technology and management to rejuvenate industry. While the new policy began as early as 1971 and the "open-door" policy was enunciated in 1973, it was not until July, 1974, that the Egyptian

Parliament approved an historic new investment law (Law 43 of 1974 on the Investment of Arab and Foreign Capital and Free Zones) that legally reopened Egypt to large-scale foreign investment. Among the Law's provisions were guarantees against nationalization or expropriation, guarantees concerning the repatriation of profits and the original investment, and tax incentives (including a tax holiday of from five to eight years); even greater freedoms were allowed to foreign investors operating under special privileges given to free zone operations.

Importantly, Law 43 provided a framework for joint ventures between Egyptian public sector enterprises and foreign investors. Any project approved within the terms of Law 43 is considered to be a private sector company no matter what proportion of its capital is held by the public sector. Such projects benefit from various tax and duty benefits and are not bound by existing laws on compulsory purchase of state bonds, worker representation on management boards, or formulas for profit-sharing. Thus, if public sector firms put up their share of equity in a joint venture in the form of land or existing building, the whole enterprise will, in a de facto sense, become a private sector enterprise.

In recent months there have been a number of legislative, policy and personnel changes that have furthered the open-door policy including:

Further liberalization of the investment climate by revision of Law 43 of 1974 by enactment of Law 32 of 1977 affecting the revaluation of foreign currencies, tax provisions, the permissible

range of project activities (including the allowability of import substitution projects).

- Expansion of the parallel market and "free" exchange thus increasing the availability of foreign exchange to the private sector.
- Reopening of the Cairo Stock Exchange which, with other measures, may increase the availability of capital to the private sector.
- Simplification of the administrative procedures required of projects applying for approval under Law 43 (1974).
- Appointment of a new Minister of Industry together with an expanded portfolio to include Industry, Petroleum and Mining.
- Appointment of a new Deputy Chairman of the Foreign Investment Authority and a general strengthening of coordination of financial and economic affairs and of planning within the Government.

4. Investor Attitudes and Response to the Open-Door Policy

There appears to be universal agreement¹ that the present private investment climate in Egypt is the most attractive that has existed for 25 years. The result has been that a large number of foreign investors are now seeking to set up new or expanded private businesses

¹The private investor attitudes summarized here are largely derived from in-depth interviews carried out by the contractor mission in Egypt during December, 1977. They ranged from entrepreneurs and managers now actually in manufacturing production in the first factories built after the open-door policy legislation to investors now actively considering investments in Egypt. The sample included both U.S. and other foreign investors, Egyptian investors and members of the domestic and foreign banking communities.

in the country. Further, the output of the private manufacturing sectors which has stagnated during 1972-1974 increased by an annual average of 15% in real terms between 1974 and 1976. In 1975, private investment in Egypt is estimated to have increased seven-fold to \$E108 million.

Factors bringing about this change in investment climate include (1) new investment legislation (Law 43 of 1974, recently amended by Law 32 of 1977 and 86 of 1974), (2) clarifying decisions regarding the interpretation of these laws, (3) recent changes in key economic, financial, and industry-oriented Governmental posts, and (4) active attempts to improve the administrative effectiveness of the Government bureaucracy.

As of June 30, 1977, 641 private foreign capital participation projects had been approved (see Table 13) by the General Authority for Investment and Free Zones (Investment Authority) under Law 43 (1974). This is a substantial number despite the fact that many uncertainties were inherent in that old law and many would-be investors are said to have been waiting for the clarifications in that law which have recently been made under amending Law 32 (1977). Analysis of the approvals made by the Investment Authority, however, suggest that only half the inland projects listed in Table 13 can be considered as investments in industry (groups numbered 9-16).

Although information on the rate of project approvals was not available, it is known that this rate has increased markedly with the change in top management of the Investment Authority in the last year-- 150 projects were reported approved in the three-month period prior to June 30, 1977.

TABLE 13
INLAND, PUBLIC AND PRIVATE FREE
ZONES APPROVED PROJECTS AS OF JUNE 30, 1977
(Investment Values in \$E Millions)

	<u>Number</u>	<u>Capital</u>		<u>Tot</u>	
		<u>Local</u> <u>Currency</u>	<u>Foreign</u> <u>Currency</u>		
A. INLAND PROJECTS					
1. Investment Companies	20	27.8	139.7	167.5	167.5
2. Banks and Banking Institutions	30	16.1	57.9	74.0	74.2
3. Tourist Projects	75	69.6	183.7	253.3	378.6
4. Housing Projects	24	60.5	84.4	144.9	155.4
5. Transport Projects	12	2.6	137.0	139.6	142.2
6. Health Projects	8	4.6	17.3	21.9	36.0
7. Agricultural Projects	15	8.4	8.6	17.0	27.6
8. Construction Projects	20	3.3	4.2	7.5	9.6
9. Textile Projects	26	58.0	35.2	94.0	568.3
10. Food and Beverage Projects	22	24.2	32.5	56.7	179.2
11. Chemical Projects	94	35.4	81.6	117.0	172.0
12. Engineering Projects	20	8.4	24.6	33.0	83.3
13. Building Materials Projects	14	22.0	11.5	33.5	81.6
14. Metallurgical Projects	19	7.5	8.9	16.4	21.6
15. Pharmaceutical Projects	5	0.9	2.0	2.9	5.4
16. Mining Projects	<u>4</u>	<u>0.6</u>	<u>2.2</u>	<u>2.8</u>	<u>3.2</u>
TOTAL	408	350.7	831.3	1,182.0	2,105.7
B. PUBLIC FREE ZONE PROJECTS					
1. Cairo Public Free Zone	16	0.6	8.0	8.6	10.2
2. Alexandria Public Free Zone	26	9.6	48.5	58.1	58.1
3. Suez Public Free Zone	16	0.7	8.5	9.2	9.5
4. Port Said Public Free Zone	116	5.6	58.5	64.1	64.1
TOTAL	174	16.5	123.5	140.0	141.9
C. PRIVATE FREE ZONE PROJECTS					
1. Cairo Private Free Zone	23	1.8	23.8	25.6	30.1
2. Alexandria Private Free Zone	31	1.1	715.8	716.9	825.9
3. Suez Private Free Zone	<u>5</u>	<u>---</u>	<u>19.4</u>	<u>19.4</u>	<u>19.7</u>
TOTAL	59	2.9	759.0	761.9	875.7
GRAND TOTAL	641	70.1	1,713.8	2,083.9	3,123.3

Approval, however, means only that a license has been granted and the next phase is "Execution" which indicates that the investor has begun legal and administrative actions for setting up the actual company. The final phase of the investment process that the Investment Authority tracks is "Production" which means the actual construction of the factory, the importation of equipment and all the other operational steps up to and including the actual manufacture of products.

Once a project is "Approved," the license is granted for a six-month period with provision for renewal. An initial six-month renewal is routinely given if the investors are proceeding in a timely fashion; subsequent six-month extensions require the approval of the Investment Board. To date, only 25 originally approved projects have been denied requested renewals of their licenses.

Table 14 provides an overview of the movement of the approval projects from the execution stage to production as of June 30, 1977. Of the 204 inland "Approved" industrial projects, 60 (30%) are in the "Execution" phase and 56 (28%) are in the "Production" phase. In terms of invested capital, that has reached the "Production" phase, banking institutions and investment companies are the dominant projects (almost 80% of total investment). These were, of course, among the earliest institutions to be attracted to Egypt by the greatly improved investment climate.

TABLE 14

ANALYSIS OF INVESTMENT AUTHORITY APPROVED INLAND PROJECTS AS OF JUNE 30, 1977
 (Capital Valued in \$E Millions)

	Approved		In Execution		In Production	
	Number	Total Capital	Number	Total Capital	Number	Total Capital
1. Investment Companies	20	167.5	4	44.0	5	98.6
2. Banking Institutions	20	74.0	6	10.8	17	40.2
3. Tourism	75	253.3	18	77.7	11	13.7
4. Housing	24	144.9	7	75.0	1	.05
5. Transportation	12	139.6	2	10.7	3	3.2
6. Health	8	36.0	2	2.4	—	—
7. Agricultural	15	27.6	3	1.3	—	—
8. Construction	20	7.5	1	0.1	7	3.5
9. Textile	26	94.0	7	16.1	10	4.0
10. Food and Beverage	22	56.7	9	5.3	—	—
11. Chemical	94	117.0	21	23.2	34	14.3
12. Engineering	20	33.0	5	5.8	5	0.8
13. Building Materials	14	33.5	7	25.5	2	0.9
14. Metallurgical	19	16.4	8	11.0	3	0.8
15. Pharmaceutical	5	2.9	2	0.9	—	—
16. Mining	4	2.8	1	0.6	2	0.7
TOTAL	408	1,182.0	103	310.4	100	180.8

Source: General Authority for Investment and Free Zones.

Investment licenses granted by GOFI¹ to the private sector provide another measure of investor response to the new changes in the private sector environment. Between 1974 and 1976, the number of projects approved more than doubled, while planned investment increased four-fold (see Table 15). If the investment approvals reflect the intentions of the private businessman,² then it indicates a marked change in investment attitude as a result of the change in Government policy with respect to private enterprise and the accompanying easing up of foreign exchange and import restrictions. Of the total of 693 projects approved by GOFI, 521 were reported to represent new investments and 172 "enlargements."

5. Free Zones

The industrial free zone concept, oriented principally to attracting foreign investors to Egypt to manufacture for export, is an important feature of Egypt's "open door" policy. The industrial free zone, while potentially the most significant form of free zone presently planned for Egypt, is only one of five types of free zones. Briefly, the free zones being established include the following:

- Transit Free Zones, set up to facilitate storage and transit of goods by eliminating customs. Such zones are located at the Ports of Alexandria, Suez, and Port Said.

¹For private investments greater than \$E8,000.

²The IBRD Mission in its analysis cautions that since GOFI does not follow up on the rate of implementation of the licenses granted, it is not possible to know the exact investment level in any one year. Past experience suggests that implementation can roughly be estimated at one-third of the investment level approved.

TABLE 15

GOFI INVESTMENT APPROVALS IN THE PRIVATE SECTOR: 1970-1976
(Current Prices; \$E Thousands)

<u>Year</u>	<u>Number of Projects</u>	<u>Investment (Planned)</u>	<u>Value of Production</u>	<u>Value Added</u>	<u>Employment</u>	<u>Wages</u>	<u>Average Investment Per Project</u>	<u>Average Value of Production Per Project</u>
1970	314	5,000	10,800	2,300	5,635	775	15,9	34,6
1971	280	6,900	12,500	2,500	4,944	855	24,6	44,6
1972	350	8,600	16,500	2,600	6,308	1,035	24,6	47,1
1973	332	16,700	19,700	4,600	10,546	1,693	50,3	59,3
1974	358	19,100	28,700	4,300	8,589	1,732	53,6	80,2
1975	740	67,100	132,300	40,000	17,231	5,100	90,7	178,8
1976	693	94,773	213,297	53,811	20,655	6,805	136,8	307,8

Source: GOFI.

- Free Cities, established primarily for commercial activity. Port Said is the only Free City at this time; it mainly sells luxury consumer goods to Egyptian nationals.
- Duty-Free Shops, established at airports.
- Industrial Free Zones, designed to encourage manufacturing for export, in a customs and tax-free zone, using imported raw materials or parts and Egyptian labor. Such zones are planned in or near Alexandria, Cairo Airport (El Nasr City), Port Said and Suez.
- Private Free Zones, designed for industrial or trading purposes and offering the same customs and tax benefits as the Industrial Free Zone, but not restricted to specific public sites. There are numerous examples of such zones in Egypt at present.

Investment in the free zones is guided by the policies established under Law 43 (1974) and therefore falls under jurisdiction of the General Authority for Foreign Investment and Free Zones. Law 43 provides foreign investors in free zones with a wide range of favorable incentives including freedom from customs duties and almost total relief from Egyptian corporate taxes on profits for an unlimited time. Investors may retain all foreign currency brought into the zone for investment needs and all incoming currency from export sales and services.

Industrial free zones can be a highly effective means by which developing nations can expedite industrialization and achieve targets for export, employment, foreign exchange, income, technological

development and regional development faster than they may otherwise. However, free zones should not be viewed as an end in themselves. The plans, policies and programs designed to develop free zones must, therefore, reflect the role assigned to free zones in the broader industrialization strategy. Aside from the fact that little foreign investment can be seen to have, as yet, resulted from Egypt's efforts to establish free zones, there is little evidence that well thought-out objectives and targets have been assigned to Egypt's free zones in general.

Physical development of the industrial free zones has been proceeding at a slower-than-planned pace. None could be considered fully operational. The free zone outside of Cairo at El Nasr City is currently making factory sites available and is proceeding towards completion of the first advance factory buildings during 1978 or early 1979. Problems relating to funding the development of the free zone were said to have been responsible for delays in the past, but these problems seem to have been solved.

Investor response, to date, has been disappointing. Most of the free zone projects largely relate to warehousing, redistribution functions and shipping services including ship repair. The same reasons cited above for delays in private sector response, in general, apply to free zones as well. As of June, 1977, the Authority had approved 233 projects for the free zone, totaling an investment of over \$1 billion (see Table 16). Of these, in only about half the cases have actions been taken to proceed with the projects; only a small number have reached the operating stage.

Most investors and investment interests interviewed in the course of this study believe that a manufacturing operation in Egypt should serve the large domestic market in addition to potential exports. To do so from a free zone would not be advantageous since all products would be subject to duties identical as from a foreign procurement source. Since no preferential access to Arab markets is now available from an Egyptian free trade zone, such exports would be similarly penalized. Exporting from Egypt would be more advantageous under present preferential duty arrangements and individual bilateral agreements.

TABLE 16**FREE ZONE PROJECTS APPROVED
(June 30, 1977)**

	<u>Number</u>	<u>Capital (\$E Million)</u>			<u>Total Investment (\$E Million)</u>
		<u>Local</u>	<u>Foreign</u>	<u>Total</u>	
<u>Public Free Zone Projects</u>					
Cairo	16	0.6	8.0	8.6	10.2
Alexandria	26	9.6	48.5	58.1	58.1
Suez	16	0.7	8.5	9.2	9.5
Port Said	116	5.6	58.5	64.1	64.1
<u>Private Free Zone Projects</u>					
Cairo	23	1.8	23.8	25.6	30.1
Alexandria	31	1.1	715.8	716.0	825.9
Suez	5	---	19.4	19.4	19.7
<u>TOTAL Free Zone Projects</u>	<u>233</u>	<u>19.4</u>	<u>882.5</u>	<u>901.9</u>	<u>1,017.6</u>

Source: General Authority for Investment and Free Zones.

III. PROSPECTS AND CONSTRAINTS

A. THE FIVE-YEAR PLAN: 1978-1982

1. Goals and Objectives

The Five-Year Plan (1978-1982) is an important indicator of how Egypt's economic leaders view their future and the course of action they plan to take in reaching their goals. It is therefore of potential value as information on possible future trends.¹

The Plan is basically designed to reorder national priorities, hence to:

- Change the investment pattern to strengthen development efforts;
- Reconstruct price and income policies;
- Correct the balance of payments; and
- Provide rational decision making at both the national and enterprise level.

An important target of the Plan is to increase the rate of economic growth of the Egyptian economy to an annual average rate of between 9 and 10%, reaching 11.9% by 1982. This compares with a rate of growth of 6.7% during the period 1956-1965 and 7.4% in 1976. Additional output will be used to raise the living standards of the people, to provide

¹Our understanding of the Five-Year Plan is principally based on a perusal, The Five-Year Plan, 1978-1982, Volume 1, The General Strategy for Economic and Social Development, prepared by the Ministry of Planning in August, 1977, and discussions with Egyptian Government officials. It should be kept in mind that the Plan has not yet been submitted to The People's Assembly and that the Minister responsible for its final drafting who signed the Foreword is no longer in the Cabinet. This is significant because Chapter Two calls for a replacement of the present system of consumer subsidies by extensive wage increases and a broad range of policy changes and administrative reforms which we believe are unlikely to be fully accepted. It seems probable that a somewhat modified version of the Plan will be submitted to the Assembly that will include a slightly increased appropriation for the industrial sector and less explicit proposals for economic reform.

them with productive employment and improved social, scientific, cultural and medical services and to substantially reduce the country's external financial dependence by increasing exports at a faster rate than imports.

According to the Plan, the public sector will continue to be the principal instrument of development but the domestic and foreign private sector is invited to play an increasingly important role in adding to the production of goods and services. Only public utilities, defense production and heavy industry are intended to be reserved strictly for the public sector and it appears that a genuine effort will be made to stimulate and facilitate domestic and foreign private investment, particularly in the industrial sector. To achieve this end, it will be necessary to reduce the constraints on economic activity imposed by the labor legislation, administered pricing and other bureaucratic procedures. This will pose serious political and social problems that may not be possible to resolve for many years.

The Plan's objective of improving the balance of payments may also be faced with serious difficulties. Although it is hoped that the industrial sector will help to alleviate some of the problems, it is unlikely to make a major contribution since it presently has a strong orientation to the production of consumer goods for the price-controlled domestic market. Fortunately, a certain degree of relief may be expected from future petroleum exports and Suez Canal and tourist earnings.

An important feature of the Plan is its flexibility. The Ministry of Planning intends to re-examine the Plan each year in the light of changing circumstances and to propose a series of annual and rolling

plans for the following five-year periods. The process of continuous planning will reduce the danger that the current and future economic plans will not be overtaken by the course of economic and political events and discreetly shelved--a fate that has overtaken many economic development plans, including Egyptian plans, in the past.

2. Investment Allocation

Total public and private investment for the Plan period is projected to amount to $\text{E}13$ billion. Of this, $\text{E}10.2$ billion is to be in the public sector. Industry and minerals are projected to account for 23.7%¹ of total public investment (together with petroleum, electricity and construction, 40.4%) in comparison with 22.6% for transportation and communications and only 8.6% for agriculture and irrigation.

The ambitious nature of the projected investment level in industry during the period 1978-1982 is clearly revealed by Tables 17, 18, and 19. Table 17 shows that annual average investment is to rise from $\text{E}292$ million during 1975-1977 to $\text{E}682$ million, an increase of 135%. Substantial investment increases are planned in Military Production, Ministry of Supply activity (for domestic consumption) and Housing and Reconstruction materials (principally cement for housing and public building projects). It is anticipated that substantial amounts of foreign investment will be attracted to participate in this industrial development program.

¹This figure ($\text{E}2,412.6$ million) is taken from Table 9 of Volume 1 of the Plan. Table 1, Volume VI, the General Strategy for Industrialization (in Arabic), states that public sector/industrial sector investment will amount to $\text{E}2,702.6$ million and that private sector industrial investment will amount to $\text{E}709$ million making a total industrial sector investment of $\text{E}3,411.6$ million. These latter figures were quoted by the Ministry of Planning at a meeting in Cairo early in December, 1977.

TABLE 17

DISTRIBUTION OF INDUSTRIAL INVESTMENT—1975, 1976 AND 1977¹ AND 1978-1982²
(£E Millions, 1975 Prices)

<u>Ministry</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978-1982</u>	<u>Percent Share (1978-1982)</u>	
					<u>Public Sector</u>	<u>Total</u>
Industry	202	229	171	1,872	68.3	55
Military Production	25	29	19	168	6.2	5
Supply	5	12	10	92	3.4	2.7
Housing and Recon- struction	9	34	46	394	14.6	11.5
Miscellaneous						
Public Sector	256	317	277	2,702	100.0	79.2
Private Sector	—	13	13	709	—	20.8
TOTAL	256	330	290	3,411 (Annual average £E682)	100.0	100.0

¹ Estimated.

² Planned.

Source: 1978-1982 Development Plan, Volume VI.

TABLE 18

TOTAL INVESTMENT IN INDUSTRY UP TO 12/31/77
AND PROJECTED 1978-1982: BY PRINCIPAL SECTORS
 (Ministry of Industry Projects Only: ME Millions, 1975 Prices)

<u>Ministry</u>	<u>Total</u>		<u>During Plan</u>	<u>After Plan</u>
	<u>By 1982</u>	<u>Up to 12/31/77</u>		
Food	337.4	85.2	252.2	---
Textiles	369.1	132.6	236.6	---
Chemicals	399.1	168.0	231.1	---
Metals	391.8	37.1	241.0	113.7
Iron and Steel Complex ¹	1,099.5	359.8	529.8 ²	209.9
Engineering and Electrical	361.3	48.2	247.7	65.4
Mining	127.5	37.4	90.1	
Miscellaneous				
TOTAL	3,142.4	881.7	1,872.2	389.0

¹Includes Abu Thartur phosphate project.

²Abu Thartur, not yet demonstrated to be economically feasible, account for 28% of total projected investment in industry. The project has a high infrastructure and mining content.

Source: 1978-1982 Development Plan, Volume VI.

TABLE 19

DISTRIBUTION OF INVESTMENT PROJECTS DURING PLAN PERIOD
(Ministry of Industry Projects Only: LE Millions, 1975 Prices)

	<u>Total Investment Up to 1982</u>	<u>Total Investment During Plan</u>	<u>Foreign Exchange Component</u>
Preservation and Replacement	279.9	198.4	142.5
On-Going	1,726.1	824.3	422.1
New Projects	691.2	476.7	362.8
Joint Ventures	416.9	348.8	245.0
Reconstruction Projects	28.8	24.0	12.5
TOTAL .	3,142.9	1,872.0	1,184.9

As revealed by Tables 18 and 19, massive new investment projects are being planned by the Ministry of Industry alone. During the next five years, their plans call for new investments of close to \$E1.9 billion. Although anticipated price changes undoubtedly account for a substantial amount of estimated cost of the new investment, it is clearly being planned on an unprecedentedly large scale.

It is important to note that implementation of most major projects included in the Plan is contingent on participation of foreign investment. In the food industry, for example, three projects account for more than half of the projected investment--a new (and final) cane sugar mill (\$E50 million), a pulp mill expansion (\$E34 million) classified under food industry because of its relationship with sugar production, and a beet sugar mill (\$E60 million).

Investments in textiles and chemicals will also be heavily dependent on foreign technology and finance, a substantial portion of which has already been secured. Textile investment will be in extensions and renovations at three existing mills (\$E110 million), a polyester fiber plant (\$E32.3 million) and a new cotton mill at Suez (\$E26 million). Chemical industry expansion will be in the form of two major fertilizer plants, a smaller fertilizer plant and two plants for the production of rubber tires.

Metallurgical industries will account for \$E771 million, or 42% of the total investment planned by the Ministry of Industry for the Plan period.¹ Major investments planned in the metallurgical industries include an integrated steel mill (\$E100 million), a sponge iron plant

¹ These totals include, however, \$E248 million for the proposed Abu Thartur phosphate mining project which is under study by the Iron and Steel Complex, but should perhaps be classified under mining or chemicals and, in part, under infrastructure.

(£E70 million), expansion of the aluminum plant (£E46 million), and an iron ore concentration and cleaning plant for the ore used by the Helwan Steel Company (£E25 million). These projects will be undertaken only if a substantial element of foreign financing can be secured.

From Table 19 it can be seen that 44% of the projected industrial investment will be needed to complete on-going projects. If these projects are brought into production during the early years of the Plan, the output and employment level in Egyptian industry may record a significant increase before 1982. There can be little doubt, therefore, that priority should be given to the completion of on-going projects even at the cost of delaying the initiation of new projects. The authors of the Development Plan appear to share this view.

3. Production and Employment

Total industrial output, according to the Plan and summarized in Tables 20 and 21, is expected to increase by £E2,370 million (63.2%) between 1977 and 1982, but the public sector contribution of Ministry of Industry projects is estimated to increase by only about £E1,000 million.¹ This leaves non-Ministry of Industry enterprises and the private sector to generate the remaining £E1,370 million of output. In the light of

¹ Statistics on industrial production and output in Egypt are difficult to obtain on a consistent and reasonably up-to-date basis, due to a number of reasons including the division of responsibility for public sector industry, the fact that some industries produce both for defense and consumer markets, and the difficulty of collecting data from small-scale operations. In Table 20, however, we present the Ministry of Planning estimates of production, value added, employment and wages for Egyptian industry as a whole for 1977, and projections of what these will be for 1982, as seen by the Ministry of Planning. Table 21, constructed from a Ministry of Planning table, presented in Volume VI of the Development Plan, and information provided by the Ministry of Industry in December, 1977, offers a breakdown by industry subsector of performance in 1977 for Ministry of Industry and private sector enterprises. It also presents projected production during the Plan period for Ministry of Industry enterprises only.

TABLE 20

**TOTAL INDUSTRIAL TARGETS: FOR PRODUCTION,
VALUE-ADDED, EMPLOYMENT AND WAGES**
(In \$E Millions at Current Prices)

	<u>Production</u>	<u>Value-Added</u>	<u>Employment</u>	
			<u>Number</u>	<u>Wages</u>
1982	6,120	1,683.1	1,439,000	673.3
1977	3,750	93.8	1,217,000	463.4
Increase: 1982/1977	2,370			
Percent Increase	63.2%			
Average Annual Increase	12.6%			

Source: Ministry of Planning, 1978-1982 Development Plan, Volume VI.

TABLE 21
PROJECTED GROSS VALUE OF
INDUSTRIAL PRODUCTION DURING PLAN
(in Millions)

	<u>1977</u>		<u>Estimated 1982</u>		<u>Average Annual Rate of Growth 1978-1982</u>
	<u>Target</u>	<u>Actual Jan-Sept</u>	<u>Value</u>	<u>%</u>	
Food	861.0	653.7			
Public	656.6	505.5	759.0	25.3	6.0
Private	204.5	150.2			
Textiles	810.9	625.9			
Public	615.2	471.5	826.0	27.5	9.8
Private	195.4	154.4			
Chemicals	300.5	202.3			
Public	223.9	147.0	400.0	13.4	18.1
Private	76.6	55.3			
Engineering and Metals	527.9	391.6			
Public	458.2	337.6	950.0	31.7	25.9
Private	69.7	54.0			
Mining					
Public	11.0	6.0	60.0	2.1	27.9
Woodworking Products	51.9	39.3			
Leather Products	125.2	127.2			
TOTAL	2,688.2	2,046.0			
Public	1,964.9	1,465.6	2,994.9		13.0
Private	723.3	580.4			

Source: Ministry of Planning, 1978-82 Development Plan, Volume VI.

other ministry public sector industrial investment projects, underway or about to be implemented, and the lack of prepared bankable projects in the private sector, it is highly improbable that these targets will be attained. It also appears that unless the Ministry of Industry enterprises perform substantially better than projected during the next five years, the Plan's total production target and the related employment and export targets are not likely to be achieved.

Projected rates of output growth vary widely between industrial sub-sectors. The food industry, which is scheduled to triple its current level of total investment during the Plan period, is targeted to increase output at an annual rate of 6% between 1975 and 1982. Comparable rates of growth in textiles, chemicals, metals and mining are 9.8%, 18.1%, 25.9%, and 27.9%, respectively. These targeted rates of growth are without any apparent relationship to projected levels of new investment. Since output lags may continue into and several years beyond 1982, these output rates may, in the long run, be reasonable.¹

4. Balance of Payments

Egyptian industrial development has, in the past, been primarily based on domestic raw materials--cotton, sugar cane, phosphates, and iron ore--and, more recently, domestically-generated electricity for the production of nitrogenous fertilizer and aluminum. Although it has also been oriented towards import substitution, it remains a net user of foreign exchange on current account (neglecting imports of machinery and equipment). The Ministry of Planning estimates that in 1977 total industry imports amounted to E550 million, in comparison with industrial exports of

¹It would be interesting to know the basis of these estimates.

LE280 million and that, by the year 1982, imports will have increased to LE820 million and exports to LE640 million.

Tables 22 and 23 suggest a recent upward trend in the use of imported inputs by Ministry of Industry public sector enterprises and a recent leveling off in industrial exports of these same companies as well as private sector companies. These statistics should, however, be used with caution because of exchange rate anomalies and the use of administered non-market prices for the valuation of exports to the bilateral countries.

It is clear from Table 23 that Egypt's planned increase in exports will depend heavily on three industrial subsectors--chemicals, metals, and mining which, in 1975, made only a modest contribution. Annual rates of growth during the period 1975-1982 of 139.5%, 54.6%, and 87.6%, respectively, will be required to attain planned targets. The more modest annual rate of growth of 9.4% in the textile industry is being relied on to account for 30% of the increase in total Ministry of Industry exports. Major plans for expansion and modernization are already underway in the textile industry.

B. ATTITUDES TOWARDS INDUSTRY, DEVELOPMENT AND GROWTH: PUBLIC SECTOR

The exercise of assessing attitudes might be described as a second order of subjectivity; it may, however, be useful to attempt it in the context of the past and present planning of industrial development in Egypt. In discussion with Government officials at various levels and from official documents, a dominant theme seems to emerge. Namely, it appears that the purpose of industry is to use Egypt's natural resources for the benefit of the Egyptian people--at least to ensure basic rations

TABLE 22

LOCAL AND IMPORTED CONTENT: PUBLIC INDUSTRIAL SECTOR
 (Ministry of Industry Enterprises Only: LE Millions in Current Prices)

<u>Year</u>	<u>Local Content</u>	<u>Import Content</u>	<u>Total</u>	<u>Production</u>	<u>Ratio to Production (%)</u>		
					<u>Local</u>	<u>Imports</u>	<u>Total</u>
1973	301.7	133.2	434.9	1,169.3	25.8	11.4	37.2
1974	334.1	193.6	527.7	1,370.0	24.4	14.1	38.5
1975	514.2	233.7	747.9	1,594.4	32.3	14.6	46.9
1976	543.1	229.0	772.1	1,724.1	31.5	13.3	44.8

Import content counted on the base of official rates of exchange.

Source: Ministry of Industry, Petroleum and Mining.

TABLE 23

INDUSTRIAL EXPORTS--1975 TO 1982
(Ministry of Industry Enterprises
Only: ₪E Millions, 1975 Prices)

	<u>Actual: 1975</u>		<u>Estimated: 1982</u>		<u>Average Annual Growth Rate (%)</u>
	<u>Value</u>	<u>Percent</u>	<u>Value</u>	<u>Percent</u>	
Food	32.0	19	45.5	12	5.2
Textiles	96.2	58	160.0	42.1	7.5
Chemicals	3.9	2.4	42.0	11.1	40.4
Metals	29.2	17.6	100.0	26.3	19.2
Mining	4.5	2.7	32	8.4	32.3
TOTAL	165.8	100.0	379.6	100.0	12.6

Source: 1978-1982 Development Plan, Volume VI.

of food and clothing at affordable prices for everyone. That this may introduce serious distortions into the economy is appreciated but accepted.

The agricultural sector may have to accept prices for its output that are only a fraction of world prices but it can to some extent be compensated by artificially low prices for fertilizer and other agricultural inputs and for bread, cooking oil, sugar and cloth. It is also true that since increasing quantities of food and industrial raw materials and equipment must be imported from abroad, exports must be encouraged--but not at the cost of domestic consumption.

It is difficult to resist the conclusion that Egyptian Government officials regard exports as a residual that is not critically important. The recent rejection of an IBRD export promotion project is perhaps an explicit manifestation of this attitude. In planning major resource development and foreign investment projects in aluminum and iron and steel, a similar unwillingness to aggressively promote exports also seems to be present. Foreign interests seem to have been relied on not only to provide the necessary capital to finance the ventures but to take their reward in a share of the production. Egyptian export promotion does not seem to have been seriously considered.

The attitudes described above influence industrial investment and output planning. Domestic raw materials, even long-staple cotton, which is inappropriate as a raw material for the production of the low-grade fabrics supplied to the Egyptian people, must be utilized in Egypt for Egyptian consumption. The consequent need for capital and intermediate goods seems not to be seriously considered with the result that more

projects are planned and initiated than can be supplied with imported inputs. The high proportion of total investment funds required to finance the completion of on-going investment projects reported elsewhere is a consequence of this attitude.

C. CONSTRAINTS ON INDUSTRIAL DEVELOPMENT

1. Introduction

A number of fundamental constraints on the industrial development process must be overcome before more rapid growth can be experienced in Egypt. These constraints and problem areas are well known to the leaders in the economy and efforts are underway to correct them. Some of the constraints discussed below are not as serious as generally believed; others, as we have indicated are more serious. Some can be corrected with short-term solutions; other may take a generation to correct.

2. Industrial Capacity Underutilization

Industrial capacity underutilization does not appear to be a serious constraint on development at the present time. It is, however, a long-term characteristic of Egyptian industry due, in part, to the fact that much of its input is of an agricultural and, therefore, seasonal nature. This is aggravated by poor plant and inventory management, shortage of storage capacity and inefficient Government decision making in the allocation of funds for maintenance and of foreign exchange funds for spare parts and raw materials. The problem seems to have been substantially reduced since 1973 and 1974, in part, as the result of foreign exchange assistance for this specific purpose.

Underutilization seems to be a fairly serious problem in the public sector engineering industry, but the heterogenous nature of the equipment needed in this industry frequently results in nominal excess capacity in many other countries. It is understood that UNIDO has studied this problem in Egypt and has developed proposals to put some of this capacity to work to supply export markets.

A recent detailed study reveals comparatively least underutilization in the private sector (although it probably continues to exist in the food industry) and certain major plants in the public sector (several large textile mills and the automotive plant¹) are operating at full capacity. Utilization in the Helwan steel mill appears to be improving steadily, and fertilizer and aluminum production are also increasing.

3. Replacement and Modernization of Capacity

There is evidence that much of the equipment used in both the private and public sectors is out of date and badly maintained. Several recent reports refer to the waste of raw materials--cotton, oil seeds, leather and wood in particular--caused by ill-functioning machines. These problems should clearly be the subject of serious attention by the technical assistance facilities for small industry that are in existence or being planned and in the loan agreements for the expansion and modernization of public sector enterprises that are negotiated with foreign lenders.

Despite Egypt's low wage costs and comparatively plentiful supply of labor, there appears to be a propensity to install modern equipment rather than machines of older and less capital-intensive design. Indeed, the import of industrial machinery more than three years old is not permitted.

¹ Heavily underutilized at certain times in the past.

Recent observers report that rudely sophisticated imported equipment is being used for simple operations with a very low degree of productivity. This is difficult to reconcile with the high level of ingenuity shown in some small-scale enterprises in creating and keeping in operation special purpose machines for numerous industrial processes.

4. Import Requirements

Shortages of imported raw materials and spare parts have undoubtedly led to serious problems of industrial plant underutilization in the past. It seems probable, however, with the possible exception of the chronic underutilization of the automotive plant¹, that the problem was essentially one of foreign exchange and enterprise management. There is evidence that the ratio of the level of imported component inventories to output has generally been fairly high suggesting that at least one aspect of the problem has been inventory management rather than absolute shortage. To the extent that total foreign exchange allocations fall below industry needs, there was a clear Governmental decision to reduce industrial output in favor of some other foreign exchange use.

5. Infrastructure

On developing country standards Egypt has an unusually good basic infrastructure. Transport is provided by river, canal, road, rail and to a small extent, sea. River and canal transport is available from Aswan to the Mediterranean and the Suez Canal area. Service is not rapid by Western standards but it is low-cost for heavy and bulky items. Water transport is duplicated by both rail and road on which Government enterprises provide highly subsidized services which, in some areas, are

¹At full capacity, this plant would have used excessive quantities of foreign exchange in relation to other uses. It is now operating at full capacity.

high-speed and reliable. In fact, it has recently been stated by a senior Government official that investment in Egyptian rail facilities has, in the past, been excessive in light of other national needs.

Electric power supply is also well developed. Several barrages on the Nile River and the Aswan and High Dams provide substantial amounts of electric power that are supplemented by thermal power plants in Cairo, Alexandria, and Ismailia and several captive industrial enterprise facilities. Highly energy-intensive industrial operations--nitrogenous fertilizer at Aswan, aluminum refining at Nag el Hamadi and steelmaking at Helwan consume a substantial proportion of the country's total production of electric power and consumer and industrial demand continues to increase.

Most other infrastructure sectors suffer from serious deterioration and overloading due, in large measure, to population growth. This is particularly the case in urban housing where the situation can only be described as critical; it is aggravated by mounting problems of water supply and sewage disposal. It is doubtful, however, whether these deficiencies impose serious constraints on industrial growth, but they may have serious social and political consequences.

Domestic and foreign telecommunications are in serious need of repair and extension, but it seems probable that improved maintenance of existing equipment and higher user charges would result in substantial improvement. They are, of course, of great importance to potential foreign investors whose attitude toward investment in Egypt may be adversely influenced by the apparent intractability of the telecommunications problem.

6. Domestic and Foreign Capital Funds

As noted elsewhere it does not appear to have been difficult for public sector industrial enterprises to secure the necessary capital funds to expand the initiate new projects in the past. It is possible that in some cases Ministry of Industry authority to undertake a new project may have been given in cases in which it could not, in fact, secure the necessary investment funds or provide the foreign exchange for needed raw materials and spare parts, since so many projects are currently under execution and widespread complaints of industrial capacity underutilization due to raw material shortage have been made in recent years. Nevertheless, it is doubtful whether many attractive industrial development projects are being held up by an inability to secure the necessary financing. A more probable constraint is the lack of well-developed candidate projects for financing. Evidence supporting this view can be found in the recently-completed industrial sector studies and in recent Bank Group and AID studies that have developed promising projects in which they have been willing to participate and in the case of the Bank to which they have been able to attract substantial loan funds from other lenders.

There is, however, an important sense in which shortage of capital may prove to be a serious constraint on industrial development in the immediate future. Although it is possible to secure foreign exchange commitments in loan form to Egyptian industrial projects, the Government's ability to finance its foreign exchange gap and, hence, finance the necessary imports of raw materials and intermediate goods to maintain existing industry in operation remains to be demonstrated.

At the first meeting of the Egyptian Consultative Group in May, 1977, Egypt presented its development plans and its strategy to carry them out. IBRD estimates that Egypt would require disbursements of \$3.6 billion in 1977 and external assistance of about \$2.8 billion annually in 1978, 1979, and 1980. The estimated 1977 gap of \$1.65 billion was filled by a loan from GODE of \$1.475 billion to the Central Bank of Egypt and an increase in U.S. commodity aid. The estimated \$1.0-1.2 billion annual gaps for the period 1978-1980 remain uncommitted. The IBRD estimates that because of the lag between commitment and disbursements (particularly in project aid), new commitments of \$2.715 billion, \$2.515 billion and \$2.275 billion for 1978, 1979, and 1980, respectively, will be required to close the projected gaps.

Although these levels of commitment and disbursements are well within the financial capacity of the GODE countries, it should be noted that they are unlikely to be financed to any substantial degree by other lenders without a major and highly improbable change in past lending and aid-giving policies towards Egypt. For example, total USSR aid (non-military) amounts to only \$521.5 million over a period of many years, USAID is at an annual rate of less than \$1 billion, while World Bank Group outstanding loans amount to only \$686.9 million of which as of April 30, 1977, \$480 million had not yet been disbursed.

It is difficult to avoid the conclusion that Egypt's development plans, including its ambitious proposals for industrial development, can be implemented only if it is possible to secure greatly-increased grants and loans from GODE governments. Other aid-giving and lending agencies

are unlikely to increase their commitments to Egypt sufficiently to enable her to meet her needs of foreign assistance for at least the next several years, after which petroleum exports and Suez Canal receipts may substantially ameliorate the financial situation.

7. Bureaucracy

The problem of bureaucracy, possibly one of the most complained-about constraints on development in Egypt, does not seem to be more limiting than in other developing countries--particularly those in transition.

A new venturer dealing with the Egyptian bureaucracy is confronted by two types of problems: (1) the inertia of some parts of the bureaucracy to change rapidly from its pre-"open-door" attitudes and procedures, and (2) the multiplicity of Ministries and agencies with which a new investor must deal.

It is encouraging to note that some progress is being made to deal with each of these problems. There has been some pruning of the Government bureaucracy. Much of the overcentralized administrative system that dampened ministries throughout the Egyptian industrial sector has been dismantled. There has also been a restructuring of the banking sector and an elimination of the monopoly of state-owned companies in foreign trade. Although leadership in the Ministries is positive and forthright in its desire to increase private participation in industry, there are often leadership gaps in the second and third tier of management and a slow-to-change bureaucratic apparatus. Nevertheless, it is possible that as older vested interests are retired and replaced by officials who rigorously support liberalization, this process will tend to feed on itself and result in more rapid change.

With respect to the second point, the Investment Authority is moving in the direction of "one-stop" assistance and decision making for the private investor. For example, project approvals given by the Investment Authority Board are binding on all its members which represent all the concerned Government ministries and agencies. In the Investment Authority headquarters building there are now a labor office, a taxation office, a legal office and a passport office to serve new investor needs. This is a definite step forward.

Thus far, however, acquiring land, construction and provision of utilities involve a number of ministries, boards and agencies and can result in protracted administrative delay for a new project. Setting up a new manufacturing plant is a management time-consuming and lengthy process involving several years. Land acquisition and title clearance are involved. Zoning, building codes, design approvals, construction permits and timely completion of construction once contracted for, all can present problems.

8. Manpower and Management

Egypt does not lack manpower; it lacks management capability and an efficient management process. These are considered to be among the most formidable constraints on industrial development in Egypt.

Egypt has a trainable labor force--some of it is already well trained. Unskilled workers are abundantly available and are well motivated. Skilled workers are currently in short supply due primarily to the recent availability of more lucrative jobs in other Arab countries. Training programs are under way to provide anticipated skilled worker requirements.

However, with the elimination of the market mechanism and centralization of resource allocation and administrative decision making, the country has been deprived of the development of both management talent and a proper management environment. Although middle management talent is available--there is an oversupply of technically-trained higher education graduates who need opportunity and time to develop--top level management is generally lacking. This, too, requires time to develop and undoubtedly over time it will.

Industrialization implies mastery of the management process which, in turn, relies on such traits as commitment, persistence, perfectionism, discipline and productivity. The management of Egyptian resources does not appear to reflect adherence to these principles, i.e., productivity is low, quality is low, and the concept of maintenance receives low priority. Yet, by all accounts the natural capability of the human resources (both labor and managers) is judged to be excellent.

In the Government sector, bureaucracy is perceived to be stifling. There is a great deal of paper shuffling and a lack of decision making. Advancement is largely based on seniority; financial incentives are very small, rewards for good decision making are inadequate; and penalties for poor decision making are high.

In public sector industry, management is perceived to be rigid, anachronistic and uncaring. There is little delegation of authority; decision making is centralized in the Chairman and the Higher Council. In general, there is little risk taking. Public sector companies are managed as production units responsible to meet certain production quotas. Marketing and quality aspects are lacking.

Decision making in the private sector is generally perceived to be mercantile. Entrepreneurs seek maximum returns on their investment in the shortest possible period. Thus, investments have tended to be in real estate and import-export activities. There are few entrepreneurs familiar with the production-investment process and patient with an orderly investment growth process.

Egyptian management tends to lack the skills of production scheduling, operating under constraints and being innovative.

There are exceptions to the generalizations presented above. Talented leaders do exist in the Government bureaucracy and the public and private sectors. However, those who would be considered to manage operations fully compatible with Western standards are in a small minority.

Adherence to the principles of the open-door policy is the best medium for manpower development. A maximum number of Egyptians should be exposed to Western society, technology and management processes. Eventually, the concepts of maintenance, discipline, productivity, punctuality will be ingrained in the Egyptian character.

Operation of joint venture firms is an excellent means of Egyptian manpower development. Egyptians will not only acquire the technical skills from the temporary foreign managements but will adapt and evolve a special Egyptian management process consistent with the industrialization goals of the country.

9. Education and Training

The lack of a comprehensive strategy for the development of Egyptian human resources could become a constraint on industrial development.

Egypt. The decentralized education and training systems are not coordinated with manpower goals, with needs of the labor market or with training organizations. As a result, there is an imbalance of skills in the labor force.

There are many parties engaged in manpower development but there is no well thought-out integrated manpower policy or a manpower program. The National Institute of Planning recommends but does not set policy; the Ministry of Planning and the Ministries of Education and Higher Education have a role in manpower policy; the Ministry of Manpower and Vocational Training is charged with assessing training requirements and acting as an intermediary between vocational training and the labor market; assorted ministries have training programs.

The Egyptian Government is cognizant of the overall manpower problems. Presidential Decree 795 of 1976 created an interministerial Higher Council in Manpower and Vocational Training charged with preparing a national policy for manpower and vocational training, determining training requirements and developing a wage policy.

The Decree also created a Joint Committee for Planning, Manpower and Training charged with:

- Planning and implementing projects;
- Preparing studies for consideration by the Higher Council; and
- Following up the actions of the Higher Council.

In short, the Higher Council appears to be charged with formulating manpower policy, and the Joint Committee with carrying out manpower planning and implementing programs. This, however, adds further to the number of

parties with a role in the formulation of manpower policy and implementation of programs. Speeding up the process and developing a coordinated manpower development program consistent with industrialization objectives should be given a high priority.

The educational process in Egypt is scholastically good but practically poor. Schools, universities, and training institutes generally offer academic instruction but lack in practical applications--facilities are poorly equipped and are understaffed. All levels of education should attempt to emphasize the practical in some manner.

Vocational education is not popular, it lacks prestige. Training requirements do not meet skill requirements. Given a choice, the more talented students opt against vocational education. The natural tendency of preferring academic training coupled with the employment policy of guaranteeing jobs for university graduates have caused a distortion in skills availability. There appears to be an excess supply of high-level technicians and a scarcity of skilled workers. In time, market forces are expected to correct this imbalance. University graduates are already accepting higher-paying skilled jobs.

Vocational training programs should be modernized, shortened in duration and become more "on-the-job" and less requiring formal class instruction. Industrialization in Egypt need not be delayed due to lack of skilled manpower. Skill upgrading can be performed on the job. Private joint venture companies prefer this process. They find their own job training to be more beneficial than the long theoretical institutional training.

Industrialization depends on some connection to and general adeptness with technology. Basic literacy is an underlying requirement. The key to industrialization progress in Egypt therefore is a massive literacy program particularly with the help of television. This literacy program should be instituted in addition to the drive to insure that all youngsters age 6-15 receive at least a primary school education.

10. Employment and Labor Policies

The employment policy forcing public sector (and, in theory, private sector) companies to absorb workers in excess of their production requirements has proved to be a burden on industry by reducing productivity, causing inefficiency and weakening competitiveness.

If the public sector has aspirations to compete internationally, then its organizational units should reflect international standards. Establishments should be allowed to reach their efficient size over time. This may be accomplished gradually without radical measures by allowing vacancies to remain unfilled.

As more private sector jobs become attractive the pressure on the public sector to provide jobs will subside. The lure of jobs abroad and the new joint venture companies are already attracting many public sector employees--some on a leave of absence basis and others on a permanent basis.

In the public sector the legally guaranteed job security, coupled with lack of incentives, do not promote high performance. In the private sector, management's inability to regulate its work force weakens a firm's ability to compete internationally.

The labor law's rigid provisions on job security are written in the spirit of protecting workers against arbitrary and unfair dismissal and from the catastrophic consequences in view of a lack of a reasonable unemployment compensation scheme. Creation of an unemployment insurance system should be considered.¹

The Government is aware of the constraints some of the provisions of employment and labor laws impose on industrial growth. To facilitate free joint venture operation, two constraints have been removed under Law 43 of 1974 concerning the investment of Arab and foreign funds:

- Provisions applicable to employers (compelling of employers to employ those specified by the Ministry of Manpower) under Article 21 of Law 91 of 1959 do not apply;
- Provisions applicable to employees and members of Boards of Directors (limiting remuneration to £E5,000) under Law 113 of 1961 do not apply).

11. Brain Drain

While the concept of a "brain drain" suggests a possible constraint on development, this does not appear to be the case in Egypt (except, perhaps, in certain skill categories), which is abundantly rich in human talent.

A significant number of Egyptians have left Egypt and many continue to emigrate especially to neighboring Arab countries. The estimates

¹Robert Mabro and Samir Radwan suggested such a scheme in their book, The Industrialization of Egypt, 1939-1973, Clarendon Press, Oxford, 1976: ". . . the implications of industrial discipline and labor performance of such laws (restrictive labor law, sic) may be adverse. Greater flexibility in hiring and firing, coupled with an unemployment compensation scheme, may not absorb more public funds than the permanent subsidization of redundant or unsuitable workers in their place of work, but could benefit the economy."

vary from 200-500,000 with most of them emigrating to Libya, Kuwait and Saudi Arabia.

Two types of people emigrate: highly-educated professionals (engineers, doctors, technicians) of which there is excess supply; and skilled workers (plumbers, tile-setters, construction workers) who are in great demand.¹ The attraction of emigration is wages in the range of two to ten times that which a worker can earn in Egypt.

Emigration, in fact, may be associated with a number of favorable aspects including relief to urban unemployment, expansion of the horizons of the workers, home remittances in the form of foreign exchange (on the order to \$500 million per year), and establishment of contacts in the host countries. Egyptians presently hold high positions in Arab establishments and such contacts may enhance the Egyptian position in future commercial dealings.

The negative aspects associated with emigration include inflation caused at home (vis-a-vis construction costs) and the depletion of certain limited skilled workers pool.

¹As noted earlier, there was a loss of managerial and entrepreneurial personnel which has been a brain drain. Thus, management--especially top decision-making managers, marketing management and financial managers--present real problems to new business ventures. Most of these key posts in new ventures are filled by expatriates who have as an important part of their responsibility the "on-the-job" training of their successors.

D. THE OUTLOOK FOR PRIVATE SECTOR DEVELOPMENT

1. General Prospects

Egypt presents the investor with a number of attractive advantages:

- A large and relatively untapped local market for consumer goods. Quality goods, for the most part, have not been readily available locally and there has been little effective marketing of consumer products for almost 25 years.
- Access to Arab markets under advantageous terms—preferential tariffs and lower transportation costs.
- A ready availability of labor which is trainable, with low wage rates and as productive as that competitively available elsewhere. Keys to realizing these potentials, however, are training and industrial discipline (management).
- An improving investment climate.

This does not mean that investment in Egypt is without risk. The Middle East, as a whole, remains an unstable area. The economy of Egypt is not self-sufficient and there is serious concern about the long-term availability of foreign exchange for the private sector in the companies that are not foreign exchange self-sufficient; that is, earning enough foreign exchange from exports to cover import requirements of raw materials, spare parts and future technological upgrading of capital equipment. And, as noted previously, in the past there have been marked changes in Government attitude and policy with respect to the role of the private sector and its freedom to operate independently.

On balance, however, for some types of investments the advantages of investing in Egypt outweigh the potential risks as reflected in the number of investors becoming interested in the country and the number of projects approved to date by the Investment Authority. The current acceptable time horizon for recovery of industrial investment through profits (pay-out) ranges from three to four years on the short side to four to seven years on the long side. Egyptian investors tend to have shorter-term pay-out requirements than foreign investors (especially U.S. investors who have been able to cover many risks of expropriation and foreign currency convertibility under insurance programs of the Overseas Private Investment Corporation).

As a consequence of the foregoing, investments to date have tended to be in light manufacturing, geared to the most profitable sectors in the consumer goods market and with minimal capital investment. Furthermore, most projects tend to be staged with ample provision for review and checkpoints to assess results to date and the prospects for a continued attractive investment climate before incremental investments are made.

Nevertheless, all indications suggest that capital--both domestic and foreign--is interested in investment in industry provided projects are soundly conceived with fairly rapid pay-out and have able, experienced project management. The attractiveness of quick trader profits and real estate speculation in Egypt is beginning to decrease and investors are showing a willingness to consider more modest rates of returns.

2. Government Policy

The Government appears to be embarking on a new strategy that will essentially limit expansion in the public sector with public funds. However, there are conflicting statements regarding this intention. For example, as indicated earlier, the Five-Year Plan calls for large investments in new projects by the Ministry of Industry.

Nevertheless, it is understood that existing capital budget allocations for the Ministry of Industry are now set aside to complete those projects now under construction (roughly 50% of the budget), to purchase spare parts and permit some rehabilitation and existing plants (40%), and to break production bottlenecks (10%) such as exist in sugar refining

As a result of its new strategy, the Government is now encouraging public sector companies to expand through joint ventures with Egyptian, Arab or foreign investors. Thus, except for certain basic and strategic industries (such as defense, steel and petroleum¹), future expansion in the industrial sector is seen to be through private business investment and through joint ventures with public sector companies.

This proposed transformation of state control of industry by means of private enterprise growth and joint venturing is a remarkable development.

There is a strong desire on the part of the government to bring supply/demand balance back to the marketplace and cover more of the country's needs by producing locally so as to end the black market of

¹Foreign participation, however, has been encouraged in exploration activities on a production share basis (with 51% Egyptian control) whereas export/import of petroleum products and refining are clearly to be public sector activities.

supply-short goods and reduce the levels of importation. The rate of private sector growth has not been as rapid as a number of new appointees to policy-making posts as the Government would like and, hence, the recent impetus to improve the investment legislation and simplify the administrative procedures. At present, industrial production is roughly 70% in the public sector and 30% in the private sector. Although the Government has not set any definite targets, they would clearly like to greatly increase private participation in industry.

Consumer products is an area where the Government looks to large-scale private initiative, except for those items where the Government subsidizes raw materials (such as soap) and those products which are under price control. The Government intends to reduce the number of items under price control, however, from roughly 80, at present, to 15-20.

Investment projects bringing new and updated technology to Egypt are especially favored by the Government. Management skills and training are another desired project contribution. Finally, there is a preference for projects with export or foreign exchange earnings potential.

3. Transfer of Public Enterprises into Mixed or Private Ownership

The Government policy of encouraging nonstrategic public sector companies to expand through joint ventures with Egyptian, Arab or foreign investors is a move toward changing public enterprises to mixed ownership. A number of moves in this direction are already underway.

For example, it is the intention of management of the Nasr Automotive Company to restructure its present operations and form joint ventures or participate in new ventures in four fields of endeavor:

- Engine manufacture;
- Tractor production;
- Small car assembly; and
- Truck production.

Partners for the first three operations are reported to be: Ford, Massey Ferguson, and Fiat; truck production is still in negotiation. The net result would appear to leave Nasr Automotive more as a holding company than a production company, with interests in four manufacturing ventures.

Four other public sector companies are reported to be in negotiation with European companies for joint venture operation. The manufacturing areas involved include:

- Lead-acid battery manufacture;
- "White Goods" consumer products;
- Boiler and pressure vessel manufacture; and
- Electrical products.

4. Potential Investment Opportunities

The General Organization for Industrialization (GOFI) has had six major industry sectoral studies completed recently which have identified a number of opportunities for new investment. According to the newly-enunciated strategy of the Government with regard to private participation in industry and expansion of public sector companies, this means that the opportunities identified are all potential private investment projects

or joint ventures. A brief summary of these opportunities by sector follows.

Building Materials

- A substantial amount of new capacity is needed for cement production.
- New capacity in asbestos pipes, asbestos sheets, and concrete pipes and poles.
- New capacity in non-clay bricks and somewhat less in clay bricks.
- Expansion of existing clay pipe and floor tile manufacture.
- A major new flat glass plant and one for glass wool and fiber glass.

Engineering Industries

- New facilities for the manufacture of railway coaches and tramcars.
- Television manufacture.
- Manufacture of medium and large diesel engines.
- Manufacture of handling equipment.
- Manufacture of a new range of machine tools.
- Expansion of the production of trucks and buses.
- Enlargement of the product range of Nasr Boiler Co.
- Manufacture of electric motors and generators.
- Expansion of wet and dry battery facilities.

Food

- Wet milling facility for producing a full range of corn syrups.
- Three edible oil plants for solvent extraction, hydrogenated oil and new refinery capacity.
- Two animal feed plants for low and high protein pelletized concentrates and by-product feeds, respectively.
- Highly-automated yeast plant.

Metallurgical Industry¹

- A new copper rod casting plant.

Pulp and Paper

- A one-machine bagasse newsprint facility attached to a sugar mill.
- Three small wood-free printing and writing plants, also attached to sugar mills.
- A wood content printing and writing facility.
- A market pulp mill.
- A writing and printing paper facility.
- A corrugating medium and linerboard plant.
- A duplex and multiple boards plant.
- A tissue mill.
- A small cigarette paper producer.
- A wastepaper mill.

¹ Excluding a number of projects designated for the public sector: iron and steel plant and the public sector aluminum smelter.

Textiles

- Renovation of a jute mill to reduce the foreign exchange spent on jute bags.
- A new polyester/cotton spinning mill.
- Two new cotton weaving mills to utilize the output of the proposed spinning mill and of other mills recently constructed.

5. Other Areas of Investment Promise

Chemical projects top the list in terms of projects approved, in execution and in production (both in terms of number and capital invested). Textile projects are clearly the second most attractive area. Projects in food and beverages, engineering industries and building materials follow, in that order.¹

In terms of specific projects, three are directed toward the production of extruded aluminum shapes for doors, windows and other construction uses. One--Arab Aluminum Co.--was one of the first plants under Law 43 to actually begin manufacturing operations; the other two plants are in the execution phase. Arab Aluminum is an interesting case example of the multiplier effect from new investments. It is actively helping set up a network of small businesses to fabricate such products as doors and windows, using its extruded shapes for the construction industry and consumer markets.

¹Lacking a specific identification of actual project approvals by activity and principals involved, requested but not provided to us, a review of Table 13 permits only some generalizations about the areas of greatest current investment interest in industry.

There appears to be a need for local availability of export-quality packaging materials. One proposed project produces corrugated medium, based on imported kraft, and a project now in execution to greatly expand the production of glass containers in Egypt.

Under the recently-enacted revisions to Law 43 (Law 32 of 1977), the full benefits of the original law extended to new foreign investors were extended to Egyptian investors. It is too early to judge the nature and extent of the response to that law in terms of projects submitted by Egyptian investors to the Investment Authority for approval.

As noted earlier, however, investment approvals (representing planned investment of approximately \$E95 million in 1976) granted by GOFI may give some indication of areas of current investment interest by Egyptian industry. Major investment approvals in 1976 ranked in terms of capital investment and production value were:

	<u>Percentage of Total Value</u>		
	<u>Capital</u>	<u>Production</u>	<u>Net Value</u>
Textiles	28.3%	23.9%	23.7%
Food Industries	24.7	36.6	51.6
Chemicals and Building Materials	24.3	18.6	12.5
Engineering Industries	16.2	14.9	8.3

In terms of types of projects by industry group, these GOFI investment approvals for 1976 included:

Textiles: 250 projects principally in weaving (136), tricot manufacture (60), dyeing and processing (20), and ready-made clothes (9).

Food Industries: 175 projects principally in macaroni production (55), ice plants and cold storage (33), sesame halava production (30), perfumes and cosmetics (17), poultry feed (4), and dairy products (4).

Chemicals and Building Materials: 118 projects, principally in plastics (65), paper and cardboard (7), chemicals (13), glass (3), and ceramic tiles (10).

Engineering Industries: 100 projects principally in household appliances (3), printing (13), tools and instruments (10), furniture (22), and metal wire (15).

6. The Need for On-Going Opportunity Identification

There appears to be a pressing need for more preliminary identification of investment opportunities to further the development of specific projects. The GOFI sectoral studies were a partial step in that direction at one point in time. The Investment Authority is not actively searching out new projects for development and, on the Governmental side, it appears that it is "no one's job." There was talk of a new National Investment

Bank to serve this function, but that proposed institution has not come into being. Other countries in their initial programs for attracting foreign investment have found an on-going program of opportunity analysis-- a significant factor in attracting new investment.

One effort in this field which has been successful is the prefeasibility analysis group of the Misr-Iran Development Group. This Group has developed projects to a sufficient level of opportunity analysis that it has proven effective in bringing partners together for the active feasibility study of a number of the Bank's projects.

7. Special Needs of Small-Scale Industry

As noted earlier, most private sector industry in Egypt is relatively small-scale and found to have special needs.¹ The major problems constraining the growth of small-scale industry identified by a recent

IBRD survey team include:

- Out of date machinery;
- Deficient methods of production and management;²
- Poor working conditions;

¹ Egyptian small-scale industry and business was the prime focus of a team of American businessmen selected by the Egypt-United States Business Council. This team was in the country during the time of our field work and will submit an independent report on the requirements, constraints and opportunities of small businesses. We did not devote any attention to the artisanal sector (less than 10 workers) which is oriented toward the production of household goods for local markets.

² Deficient production and management methods include such factors as product design and development, production planning and work methods, material selection, quality control and preventive maintenance.

- Lack of access to institutional finance; and
- Deficiencies in telecommunications and transport.

The solution of many of these problems requires technical assistance in the form of basic business management training (including project evaluation for support of capital loans), extensive technical advice and skill upgrading. Inasmuch as administrative responsibility over small-scale industry is divided among a half dozen ministries, focusing on common problems and taking proper remedial action is difficult and, thus, problems are compounded.

The IBRD Mission recommended centralizing responsibility for small-scale industry (excluding the handicraft segment) in a reorganized and revitalized Small Industries Department in the Ministry of Industry.

Among the functions proposed for the Department would be to:

- Streamline and improve upon the efficiency of administrative procedures; and
- Eliminate existing biases against small-scale industry with respect to incentives, procurement and taxation.

We are aware of two institutions which are now at least partially attempting to respond to some of the special needs of small-scale industry in Egypt: (1) the Development Industrial Bank; and (2) the Engineering and Industrial Design Development Centre.

The Development Industrial Bank (DIB) is the latest (1976) reincarnation of the long-dormant Industrial Development Bank originally organized in the 1940's. Its primary function is to promote and finance productive industrial enterprises--mainly in the private sector, including small-scale

industries¹ --cooperative and artisanal. Public sector lending is a restricted part of its total portfolio (roughly 35%) depending upon its fund sources. The Bank is one of few that makes medium- to long-term loans (12 years is the longest it has made to date); in size, its loan portfolio ranges from £3 million (its largest loan) to a few hundred pounds to artisans or for hire-purchase equipment arrangements. Its charter also allows provision of working capital facilities and guarantees, mainly for support activities for its long-term financing. In its promotion function, the DIB can also take an equity position (maximum of 25% of the capital) if the securities of the enterprise are traded on an exchange in Egypt.

The Bank aims to achieve a spread between its funds and loans of 2-3% (as contrasted to spreads of 7-8% with commercial banks); it is not expected to make a profit. Loans to small-scale industry, however, inherently cost more to evaluate, process and service in proportion to the size of the loan than larger loans. With such a thin spread, the DIB must balance its portfolio with larger, more profitable, loans in order to at least achieve breakeven on its operations. (An estimated 50% of its recent medium- and long-term loan funds are in loans greater than £500,000 in size.) Thus, only a portion of its capital can be lent to small-scale industry. In addition to its financing function, DIB is also expected to provide technical assistance to small-scale industry, small workshop owners and artisans. To date, this has been limited

¹The DIB defines small-scale industry as representing an equity of less than £20,000 (excluding land and buildings); the International Development Association defines small industry as having an equity of less than £100,000 (excluding land and buildings).

to providing some help with financing and engineering problems by Bank staff when they are spotted in the course of a loan appraisal.

Extension of loans to small-scale industry will be facilitated by a recently-approved \$8 million OPEC loan to the DIB at 3/4% interest. The DIB is restricted to lending these funds to small-scale industry (less than \$20,000), but will charge 8% to the borrower. Six percent of the spread will be allocated to a special fund to provide for training and technical assistance to small-scale lenders.

The most important constraint on the Bank's operation is the availability of qualified personnel.¹ Government civil service salaries limit access by the DIB to many qualified personnel who have more remunerative career opportunities both in the private sector and abroad.

Capital availability was not considered a constraint. In fact, in the banking community, as a whole, there appeared to be a shortage of projects defined as "bankable" in relation to funds available. In the small-scale industry sectors, however, potential borrowers need help in formulating a "bankable" project in order to get money. Here, the constraint appears more one of technical assistance than capital availability.

Project appraisal is an area requiring strengthening within the Bank. The management of DIB recognizes the need for staff training and technical assistance; funds for these purposes are being made available to DIB by USAID and IDA.

Another institution at least partially responding to some of the special needs of small-scale industry is the Engineering and Industrial Design Development Centre. The Development Centre has evolved into a

¹Permanent staff numbers about 250 of whom 180 are graduates; of this number, 69 are considered "professionals."

training institution as well as a provider of special technical assistance which was its initial base. The evolution took place because the Centre found its clients unable to implement much of its work for them without such training. Twenty-two courses are now offered with some 600-800 people taking the courses each year.

At present, the institution serves a wide range of clients in both the public and private sectors, only a small fraction of which are likely to meet the small-scale industry definition. Many of its existing services for clients--production scheduling, plant layout, maintenance management--however, respond to problem areas already identified. The Development Centre, as now constituted, is not staffed or sufficiently supported externally to support the types of technical extension services often required of it by clients.

The Development Industrial Bank is now encouraging the Development Centre to expand its fields of activity to include export product upgrading to meet new competitive conditions. DIB, for some time, has financed companies which have exported consumer goods to indiscriminating markets in Eastern Bloc countries under bilateral trade agreements. Many of these trade agreements are coming to an end and the DIB would like the Development Centre to help manufacturers to upgrade the design and quality of their products so that they can survive in the competitive consumer goods markets in the West.

E. INDUSTRIAL FREE ZONES

Industrial free zones can be expected to play an important role in Egypt's industrialization efforts. However, we do not anticipate any significant foreign investments in the zones in the near future. Several key constraints on the development of the zones--conceptual, organizational, and physical--lead us to believe that the potential of industrial free zones will not begin to be realized for at least five to seven years and then only if major steps are taken in planning, promotion and implementation.

Earlier, we mentioned the need for more comprehensive planning for the development of the free zones. This includes a well thought-out statement of objectives, goals and targets and identification of industries and regions in which developments are sought. A truly significant free zone program cannot begin to materialize until this initial step is taken.

In order to assure maximum net national benefit, the appropriate policy makers should also give careful thought to the entire incentive program. A limitless tax holiday for any export industry is excessive considering the advantages Egypt offers to investors seeking abundant low-cost labor. Although we have not studied the Egyptian free zone question to any great depth, it would appear that incentives should be directly related to the extent to which an industry can contribute to the national objectives outlined for the free zones and that foremost among these should be foreign exchange earnings for Egypt (not just the free zone which may be considered as being "outside" Egypt), employment of unemployed Egyptians, technology transfers to Egypt, and other benefits to the economy outside the zone. Merely attracting manufacturers

who will export more consumer goods to Egypt may, in fact, yield negative returns when the economic costs the country incurs in supporting them are taken into account.

The second area which needs to be strengthened before more rapid development of the free zone can be expected is promotion. Once the Authority has produced a clear statement of objectives and identified target industries, a vigorous promotional campaign must be undertaken to "sell" the concept and to attract desirable investors. We saw little evidence of the kind of promotional material or strategy needed to ensure rapid development. The kinds of promotional programs Egypt's competitors in free zones undertake include a variety of attractive and informative brochures; overseas promotional offices; promotional presentations which can be made to large overseas audiences of prospective investors; and high-level staff who can meet with prospective investors and provide them with the kinds of information they require for making investment decisions. We find few of these elements of a promotion program in Egypt at this time.

Finally, according to a report of June, 1977, by the Shannon Free Airport Development Company, Ltd., which has undertaken an extensive study of Egypt's industrial free zone, a major constraint on the near-term development of the free zones lies in the inadequacy of infrastructural facilities within the zones. These inadequacies have been due, according to the Shannon report, to inadequate funding but they claim that 1977 saw some progress in financing of the free zones. Nevertheless, until the infrastructure and advance factory buildings are completed, no significant development can take place.

APPENDIX A

SECTOR STUDY SUMMARIES

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APPENDIX A

SECTOR STUDY SUMMARIES

The following reviews of six industrial sectors are drawn from extensive sectoral analyses financed by the IBRD for the General Organization for Industrialization (GOFI). Each study includes a general overview of the sector, a detailed analysis of the public companies included in it, recommendations, and prefeasibility studies for a select number of high-priority projects.

The reviews are based directly on the studies and on papers prepared by a GOFI counterpart team which had also worked on the sectoral studies. In a few cases, other sources were utilized to fill serious gaps.

Four of the studies--textiles, metallurgy, engineering, and building materials--are comprehensive and cover the entire sector. The final two are not. The food processing study covers only a limited number of product areas; the rest of the information was acquired from the GOFI counterparts. In the chemical sector study, only paper and pulp were analyzed; information on other components is limited.

We express our great appreciation to Eng. Ibrahim M. Sharkas, Deputy Chairman of GOFI, for having made the reports and his staff available to us for this invaluable review. Major contributions in helping to compile the material from which we prepared these brief summaries were made by the following GOFI staff:

Eng. Nadya Abdel Azim	Pulp and Paper
Eng. Emam Abd Elmonem	Metallurgy
Eng. Samir Elselouky	Engineering Products
Eng. Salwa Hammad	Food Processing

Eng. Ashraf Anwer Khalaf . . . Food Processing
Eng. Medhat Maurice . . . Building Materials
Eng. Taher el Shereif . . . Food Processing

The GOFI team was led in this effort by Eng. Munir Nasseer.

I. TEXTILES

A. STRUCTURE OF SECTOR

1. Public Sector Structure

The public sector accounts for about 80% of the productive capacity of the industry. It is made up of 30 companies, 29 of which are concerned with textile manufacturing, and all of which are larger than any private sector company. The public sector produces 100% of the cotton yarn, wool yarn and wool cloth output; 65% of cotton cloth; 45% of knitting production; and 30% of making-up production.

2. Private Sector Structure

Because of the large number of small private workshops, it is difficult to measure this sector with any precision. The private sector in textiles is limited to fabric manufacturing and garment-making. Since the public sector controls yarn production completely, the private sector must depend on unreliable allocations which creates important bottlenecks and depresses output severely.

3. Organizations and Institutions

Until 1975, the industry was under a General Organization of Spinning and Weaving. Since 1976, the public sector companies have been administered directly by the Ministry of Industry through the Textile Secretariat. In addition, a High Council has been formed, with representatives from the Ministries of Industry, Economy, and Finance, as well as the public company chairmen. The Council is responsible for general policy direction. Other institutions include the Textile Chamber of the Federation of

Egyptian Industries (an important lobbying group), the Consolidation Fund (an export promotion organization), and the Pan-Arab Textile Federation.

B. PERFORMANCE OF SECTOR

1. Overview

The textile industry has long been one of the most important contributors to Egyptian industrial performance. In addition to being the second most important in terms of output value (just behind food), it is by far the major industrial exporter, accounting for \$E105.5 million out of \$E207.1 million in total exports in 1976. The sector is also the major industrial employer, with 281,900 employees in the public sector alone in 1976.

2. Production

The value of textile output in 1976 was \$E760 million, or 28% of total industrial production. The private sector accounted for about 25%. Output growth has been steady, if not spectacular, with approximately \$E550 million and 575,000 tons produced in 1973, versus \$E760 million and 650,000 tons in 1976 (includes textiles and fibers).

3. Consumption, Capacity, Production and Capacity Utilization

Textiles is one of the few industrial sectors where both production and productive capacity exceed domestic consumption. This is apparent from the net exports (Tables A-1, A-2, and A-3).

Domestic consumption of all textile products is now about 200,000 tons and total production is more than 400,000 tons--the excess being exported. About one-fourth of the total production, and one-half of

TABLE A-1

PRODUCTION, EXPORTS, IMPORTS,
AND CONSUMPTION OF TEXTILES, 1974
(000 tons, unless otherwise noted)

	<u>Production</u>	<u>Exports</u>	<u>Imports</u>	<u>Consumption</u>
Cotton (1974-75)	440.6	198.0	1.9	244.0
Yarn	223.3	36.6	1.3	188.0
Fabric (Sq. meter x million)	637.3	97.0	10.0	550.3
Garments	19.2	2.9	7.5	23.8
Blankets (000 pieces)	2,203.0	---	10.0	2,173.0
Sewing Threads	1.5	.04	---	1.5
Cotton Wool	1.7	.3	---	1.4
Sacks	22.5	---	13.0	35.5
Jute/Linen	30.0	---	5.0	35.0

Source: Sector Study, Werner International.

TABLE A-2
PRINCIPAL TEXTILE EXPORTS, 1975

	<u>Total</u>	<u>Tons</u> <u>Trade</u> <u>Agreement</u>	<u>Percent</u>	<u>Total</u>	<u>hE000</u> <u>Trade</u> <u>Agreement</u>	<u>Percent</u>
Cotton (1974-75)	198,000			227,700	296,040	87.9
Yarns	32,503	24,917	76	62,138	54,963	88.5
Fabric	10,958	3,562	32.5	18,310	8,520	46.5
Garments (Woven)	1,472	1,438	97.7	9,280	9,181	98.9
Garments (Knitted)	1,943	1,786	91.9	12,631	12,261	97.1
Towels	982	805	82	2,549	2,284	89.6
Other Made-Up	1,058	694	65.6	2,575	1,996	77.5
TOTAL, excluding cotton	48,916	33,202	67.9	107,483	89,205	83
<u>TOTAL</u>	246,000	203,000	82.5	335,680	296,176	88.1

Source: Sector Study.

TABLE A-3
EXPORTS OF COTTON TEXTILES, 1970-1974
(000 Tons)

<u>Year</u>	<u>Cotton</u>	<u>Yarns</u>	<u>Fabric</u>	<u>Garments</u>	<u>Knitted</u>	<u>Other</u>	<u>Total</u>
1970	304.8	41.4	20.9	.7	1.2	0.7	369.7
1971	298.1	42.3	23.2	.7	1.4	0.9	364.6
1972	302.7	44.7	19.0	1.0	1.4	14.3	383.1
1973	239.7	44.7	19.0	1.0	1.7	12.3	318.4
1974	166.8	35.7	13.3	1.2	1.7	9.4	228.1

Source: Sector Study.

domestic consumption is ration cloth which is sold at a highly-subsidized price to the public. Consumption of textile fibers is 250,000 tons, production 390,000 tons.

There is no information on how actual production compares to nominal capacity, in part, because so much of the cloth and garments are manufactured in small workshops. Even though capacity utilization is thought to be fairly high, the IBRD sector analysis suggests that machine efficiency could be improved 15-50%, and that labor productivity could be raised by 325%.

4. Investment

Public sector investment in spinning and weaving was ₪E30.4 million in 1973, ₪E35.2 million in 1974, ₪E47.4 million in 1975, and ₪E81.4 million in 1976. Investment in 1977 appears to have been at the 1976 pace. The local/foreign shares of investment have consistently been divided about equally. Private sector investment approvals by GOFI rose from ₪E3.0 million in 1971/72, to ₪E5.0 million in 1974, and to ₪E12.0 million in the first six months of 1975. (Actual investments are impossible to measure but are somewhat lower.) The return on capital employed is about 8.5%.

5. Trade Balance

As indicated earlier, the textile industry is the only one with a positive trade balance. According to official figures, imports of textile goods represent about 1,000 tons of yarn, 35 million meters of fabric, and one million garments. Additional private sector imports are valued at about ₪E8-9 million. Imports have increased sharply over the last few years as the stringent protectionist policy has been

liberalized somewhat. Imports of raw materials have appeared only in the last years, reaching 4,200 tons in 1976. Equipment is the most significant import category. The total cost of imports in foreign exchange is about \$E50 million.

Statistics on export performance vary greatly. Ministry of Industry figures show total textile exports of \$E105 million for 1976 of which \$E40 million, or 40%, is for hard currency. The Werner International Sector Study financed by IBRD shows 1975 exports totaling \$E336 million, of which \$E40 million, or 12%, is hard currency. The greatest difference lies in the amount of exports through bilateral trade agreements or to COMECON countries, but their relative significance is striking in both estimates. The sector study indicates that 246,000 tons of textile fibers and goods were exported in 1975, of which only 43,000 tons were for hard currency. The figures for 1974 were 316,000 and 107,000 tons, respectively. The trend in exports has not been very good in recent years as domestic consumption has increased more rapidly than production. The only bright spot has been a slow increase in the percentage of exports to convertible currency countries.

By far, the most important export is cotton fiber with almost 200,000 of the 246,000 tons in 1975. Yarn accounts for 32,000 tons of the remainder, although it is interesting that the per-kilo value of yarn is considerably less than that for the highly-prized Egyptian long-staple cotton. Garments, fabrics, and other made-up goods fill out the total. The large percentage of exports through bilateral and barter agreements indicates the weakness of textile exports. Not only is the quality of manufactured textiles judged to be very poor, but the price is not

competitive in most hard currency nations. Only the parallel exchange rate makes them at all competitive. Imported equipment, the high cost of expensive local cotton (although subsidized by the Government), and labor redundancy and inefficiency that negate low wages have led to a price structure which allows Egypt no competitive edge. Hence, the poor quality and high cost have limited textile exports to COMECON countries. The only exception is the long-staple fiber which demands a premium in hard currency trade. However, the market is limited and any small transfer of exports from nonconvertible to convertible currency trade would lead to a very sharp drop in the price of the latter. As a result, Egypt must become competitive in manufactured textiles by lowering costs (largely through increased efficiency) and raising quality standards.

6. Employment

The textile sector is the major industrial employer with about 282,000 workers in the public sector alone in 1976, up from 262,300 in 1973. Extremely low labor productivity is thought to be the most significant problem affecting the industry. Overmanning, inadequate training, poor management, or lack of incentives and overall poor labor performance have made labor costs higher than those in Europe, despite much lower wages. It has been estimated that labor productivity could be increased 325%.

7. Financial Performance

Gross margins are good except where the Government restricts sales pricing. The total capital employed in 1973 was \$E11.8 million with a return of 8.5%. Sales were \$E12.4 million and earnings as a percentage of sales were 8.3%. Financial management was generally inept.

8. Strengths of Sector

- High quality raw materials.
- Long history as well as established industry.
- Export incentives and other forms of Government support.
- Rapidly-growing domestic market.

9. Weaknesses of Sector

As indicated above, the most important problem is low labor productivity resulting from the following:

- Inadequate training at all levels;
- Overmanning;
- Poor management and absence of need to meet financial and productivity goals, only physical output targets; and
- Lack of incentives.

In addition, machine efficiency is low, despite relatively new machinery, because of:

- Poor maintenance;
- Lack of spare parts (now being relieved);
- Poor organization and management
- Generally poor labor performance--particularly lack of trained maintenance personnel; and
- Lack of boiler capacity which creates bottlenecks in finishing plants.

Moreover, export performance is weak, despite large volume, because of:

- Noncompetitive pricing even with Government protection and subsidies;

- Inadequate quality;
- Price-elastic demand for high-quality fiber; and
- Few exports and limited potential in convertible currency countries.

Finally, Government policy contributes to problems because:

- Controlled price and rationed cloth limit incentives to companies;
- Physical quotas rather than financial performance are stressed; and
- Employment goals harm international competitiveness.

C. OUTLOOK FOR SECTOR

1. General Development Strategy

The recommendations made in the sector study are based on a general conclusion that efficiency and quality are now extremely low and must be increased significantly. In order to be competitive, increase exports and reduce the high level of waste, the following steps are called for: a rationalization of production; an increase in machine productivity through better maintenance, organization, and purchase of new machinery; an increase in labor productivity (potential increase of 325%) with incentives and top-down training programs; and an improvement in rationed cloth to eliminate a 25% waste in raw material.

2. Projects

The principal projects called for are a top-down training program and major efforts to improve labor and machine productivity. Also:

- Renovation of a jute mill to reduce the foreign exchange spent on jute bags; this project could be rapidly amortized;
- A new polyester/cotton spinning mill; and
- Two new cotton weaving mills to utilize the output of the proposed spinning mill and of other mills recently constructed.

3. Forecasted Capacity, Production and Consumption

There are three sets of consumption projections. For the years 1975-1980, the World Bank forecasted consumption would rise by 26.5%, Werner International estimated 30.7%, and the Ministry of Planning, 56%. For 1980-1985, projected increases were 30.8% (Werner International) and 26.5% (World Bank). All three used a base of 200,000 tons for 1975.

Output projections are as follows: both Werner and IBRD expect it to be 250,000 tons by 1980 but Werner anticipates 350,000 tons by 1985 and IBRD, 300,000 tons.

The rapidly-growing consumption and output require an additional 146,000 tons of fiber, almost all of which would be cotton. However, the Government is not willing to convert that much more land to cotton production. Hence, either cotton must be imported or synthetic fibers produced. A combination of the two, with greater emphasis on the latter,

4. Investment:

To fulfill the development program set forth by the IBRD sector study, reach international standards, and meet expected consumption, calls for an ambitious investment program. Investment (in 1976 dollars) would have to total \$1,174 million by 1985, of which about \$500 million would have to be in place by 1982. This sum would be for new equipment and facilities and does not include the cost of the training program called for. Almost all the new projects are in the cotton industry (\$850 million) and most of the remainder in synthetic fibers. About one-half of the investment would have to be in foreign currencies. Finally, the burden to the Government represented by this program is slightly less than that incurred by continued subsidies, higher imports and fewer exports.

5. Anticipated Trade Balance

Imports of raw materials are expected to increase somewhat if present export levels are maintained. Similarly, the development program would involve massive imports of equipment. However, these imports are less burdensome than the final product imports that would be required if present capacity were not expanded. Although the program involves a large foreign exchange requirement, it also allows the industry to remain a net foreign exchange earner.

Fiber exports to hard currency countries are expected to remain stable at 85,000 tons (possibly rising 5% by 1985). The COMECON and Special Trade Agreement exports will drop from the 160,000-ton level of 1975 to 99,000 in 1980, and 46,000 in 1985. Exports of all other products are expected to remain relatively low. Overall, exports to hard

currency nations will rise from 107,000 tons in 1974 and 34,000 in 1975 to 103,000 in 1980 and 121,000 in 1985. On the other hand, COMECON exports will fall from 203,000 tons in 1975 to 116,000 in 1980 and 63,000 in 1985. The net result will be a steady fall in exports from 316,000 in 1974 to 202,000 in 1980.

The export potential is not likely to be any brighter than this. Few potential new markets would purchase Egyptian textile with convertible currency. If high efficiency and productivity were achieved, and result in higher quality and lower costs, some additional exports to Europe and Canada might be possible.

II. FOOD PROCESSING INDUSTRY

A. STRUCTURE OF SECTOR

1. Composition

The food processing industry is made up of the following product areas (listed in declining order of gross value of sales): tobacco and cigarettes, sugar, oil and soap, beverages, canned products, starch and yeast, biscuit and confectionery, dairy products, flavors, etc. The industry is made up of over 1,000 establishments, although all but 21 of them are small private concerns which together account for only 22% of gross sales. The most important public companies produce sugar and sweeteners, edible oil and soap, cigarettes and tobacco, and beverages.

2. Official Administration and Institutions

Until the end of 1975, a General Organization was charged with all strategic planning for the key decisions by the food industry. Since then, some of these functions have been taken over by a Supreme Council.

Different aspects of the food industry fall under various ministries, creating a serious lack of integration and coordination. The Ministry of Agriculture is responsible for supplying agricultural raw materials to the various companies, the Ministry of Industry supervises the processing function, and the Ministry of Supply is in charge of pricing and marketing. This complexity and lack of integration has resulted in serious shortages of raw materials and other bottlenecks.

B. PERFORMANCE OF SECTOR

1. Output

Food processing industries represent almost 30% of total industrial output. The ₦775 million in gross sales in 1976 is 50% above the 1969/70 level (see Table A-4). Sales increased 8% a year between 1973 and 1976. Although much of this increase is the result of higher prices, physical output has also risen substantially. About 80% of the output value comes from public companies, and this share has remained constant over the last several years. The gross value added as a percentage of total sales is only about 15%.

2. Consumption, Production and Capacity

It is very difficult to estimate demand for processed foods because any demand above domestic production levels can be suppressed by not preventing additional imports. In almost all areas, apparent consumption is simply domestic production. Imports are significant only in edible oils and tobacco (and total ₦200 million) while exports are insignificant (₦24 million). There is no way of knowing what the potential consumption of food would be if demand were not "suppressed."

Capacity utilization in the food processing industry averages about 70%. However, this utilization ranges from a low of 20% in dairy products (resulting from plants located too far from sources of raw materials), to 46% in oilseed crushing, to 80% in sugar refining. Shortages of raw materials are the major reason for the low utilization. The shortages, in turn, result from low fixed prices for raw materials, higher prices for other crops, and a lack of coordination among ministries. Other reasons for the low utilization include lack of equipment, poor maintenance and low productivity.

TABLE A-4
PUBLIC COMPANIES: GROSS VALUE OF SALES
(in Millions)

	<u>1973</u>	<u>1975</u> <u>(Estimated)</u>
Sugar and Products	99.0	93.6
Oil and Soap	70.0	85.7
Tobacco and Cigarettes	208.0	231.9
Dairy Products	5.8	8.1
Canned Products	12.1	15.1
Biscuit and Confectionary	9.5	12.9
Beverages	26.6	32.2
Flavors, etc.	N.A.	3.6
Dehydrated Products	1.5	3.6
Starch, Glucose, Yeast	9.9	13.4
Salt	1.3	1.2
<u>Total Public</u>	<u>443.6</u>	<u>501.3</u>
<u>Private Sector (estimated)</u>	<u>120.0</u>	<u>152.0</u>
TOTAL INDUSTRY	563.6	653.6

Sources: GOFI; Ministry of Industry.

3. Investment

Tables A-5 and A-6 outline, respectively, the trend of allocated and actual investment in the food processing industry.

4. Imports and Exports

Imports of raw materials totaled about \$58 million in 1974 (excluding oil products and tobacco). The most important were caustic soda, tallow, and tin plate. Imports of processed foods totaled over \$210 million, but \$137 million were for edible oils and fats, and \$73 million for tobacco and cigarettes.

Exports of food products have always been insignificant: preserved foods, \$11.3 million in 1974; while sugar and confectionery products, \$11 million, alcoholic beverages, \$4.4 million, and oils, \$1 million.

One of the Government's principal goals is to achieve self-sufficiency in processed foods and to eliminate the current trade deficit through import substitution (rather than export promotion).

5. Employment

In the public sector, the food processing industries employ about 80,000 workers, compared to 68,700 in 1967. Labor productivity is thought to be among the highest in the entire industrial sector, although available measures are crude and vary greatly among sources. Output per worker is the highest in industry by a considerable margin.

The wage scale is somewhat low for industry. Unskilled workers are paid about \$240 a year, skilled workers earn an average of \$600, supervisors \$840, and managers \$2,640.

TABLE A-5

INVESTMENT IN FOOD INDUSTRY UNDER VARIOUS PLANS, 1960-1974

<u>Plan</u>	<u>Allocated Investment</u> (000 ₪E)	<u>Executed Investment</u> (000 ₪E)	<u>Percent Executed</u>
1960/61 to 1964/65 Plan	61,516	35,412	57.6
1965/66 to 1969/70 Plan	62,427	65,446	104.8
<u>Third Five-Year Plan</u>			
1970/71 Plan Year	10,460	11,180	113.0
1971/72 Plan Year	93,479	14,649	156.7
1973 Plan Year	9,778	13,560	133.5

Source: GOFI Counterpart Team.

TABLE A-6

ACTUAL INVESTMENT BY PRODUCT AREA, 1960-1974

<u>Product Area</u>	<u>Millions ₪E</u>	<u>Percent</u>
Sugar	112.6	60.7
Oil and Soap	26.5	14.3
Tobacco and Cigarettes	11.6	6.3
Dairy Products	5.5	3.0
Canning	5.6	3.0
Confectionery and Biscuits	3.0	1.6
Bottling and Beverage	12.9	7.0
Flavors, etc.	1.5	0.8
Dehydrated Foods	0.9	0.5
Starch, Glucose	4.1	2.2
Salt	1.2	1.0
TOTAL	185.4	35.0

Source: GOFI Counterpart Team.

6. Financial Performance

The estimated 1974 profit in the public companies was £E15.4 million, which represents a 3% profit on gross sales and 5% of fixed investment (estimated at £E300 million). If these figures included the various forms of Government subsidies, the public companies would show significant losses.

7. Strengths of Sector

It is difficult to generalize about the strengths and weaknesses in the food processing industry because of the wide diversity of products.

The following are some of the positive attributes:

- Large and captive market;
- Strong Government support and protection;
- Good top management; and
- Existing technology.

8. Weaknesses of Sector

- Dependence on raw materials, often in short supply.
- Lack of integration of Government administration.
- Fixed pricing system.
- Conflict between profit encouragement and low prices.
- Lack of adequate transportation.
- Lack of quality standards.
- Capital shortage, particularly working capital.

C. OUTLOOK FOR SECTOR

1. General Development Strategy

The criteria used in the sector study for selecting high-priority projects were, in decreasing order of importance, as follows:

- Increase the supply of basic foods;
- Increase direct value added;
- Reduce food imports and keep import content minimal;
- Increase exports;
- Enhance productivity;
- Minimize capital requirements;
- Begin reducing subsidy;
- Increase indirect value added;
- Increase employment of unskilled workers;
- Improve regional income distribution;
- Achieve a high rate of return on investment.

2. High-Priority Projects Recommended

- Improve existing facilities.
- Build wet milling facility for producing full range of corn syrups.
- Build three edible oil plants for solvent extraction, hydrogenated oil and new refinery capacity.
- Build two animal feed plants for low and high protein pelletized concentrates and by-product feeds, respectively.
- Build highly-automated yeast plant.

3. Forecasted Capacity Production

As in the current situation, no projections of consumption are available since demand is not seen as a constraint and it is apparently assumed that any increased production will be absorbed. The production targets are as follows (in tons unless otherwise indicated).

<u>Product</u>	<u>Target 1980</u>
Sugar and Products	,419,000
Edible Oil	616,600
Soaps	580,000
Tobacco	2,200
Cigarettes (millions)	42,500
Starch, Glucose, Yeast	135,460
Milk Products	60,000
Canned and Frozen Foods	95,835

4. Investment

A total investment of \$337,020,000 is planned for the food processing industry between 1976 and 1980. (The new Plan has updated this figure to \$250 million between 1977 and 1982.) It would be evenly divided between local and foreign sources. The largest share, about \$207 million, would go toward new projects, followed by \$70 million for renewal and replacement, \$23 million to complete projects and \$20 million for construction. By product area, sugar would be allocated \$167 million, followed by edible oils and soap (\$46 million), tobacco

and cigarettes (₺E31 million), starch and glucose (₺E16.5 million), beverages (₺E28 million), and canned products (₺E15 million).

5. Trade Balance

The emphasis in the food sector has been and will continue to be on import substitution. It is expected that if the proposed investment is executed and production targets are met, the trade picture will remain much as it is today. Imports will continue to be concentrated in edible oils, although construction of new facilities will shift some of the imports from processed oils to soybeans. Exports will remain insignificant.

6. Employment

The proposed investment is expected to raise public sector employment to 128,448 by 1980 from the current 80,000.

III. METALLURGY INDUSTRY

A. STRUCTURE OF SECTOR

1. Composition of Sector

The metallurgical industry is divided into ferrous and nonferrous metals. One company--the Iron and Steel Co. (Hadisolb)--accounts for 50% of ferrous metal production. Six other public companies are now operating. Important nonferrous metals are aluminum, copper, brass, lead and zinc. These are processed by three public companies. The private sector has no holdings in this sector with the exception of some very small foundries.

B. PERFORMANCE OF SECTOR

1. Production by Major Subsector

	Thousand Tons						1977 (Target)
	1971	1972	1973	1974	1975	1976	
Rolled Steel	405	496	493	443	553	577	744
Non-Flat	288	311	328	320	334	335	455
Flat	118	185	165	123	219	242	289
Liquid Aluminum	---	---	---	---	3	55	85
Finished Product	7.4	7.6	7.0	8.4	9.2	---	---
Copper	6.0	6.4	5.7	6.2	7.4	---	---
Brass	2.7	2.8	2.6	2.3	2.3	2.5	2.9
Lead	1.0	1.5	2.5	2.5	2.5	3.5	2.9
Zinc	2.0	1.4	1.8	1.9	1.6	---	---

2. Consumption

	<u>Apparent Consumption by Major Subsectors</u>			
	<u>Sales from Local Production</u> (tons)	<u>Imports</u> (tons)	<u>Apparent Consumption</u>	<u>Self- Sufficiency</u> (percent)
Iron and Steel (1975)	570,000	495,000	1,065,000	55
Rolled Steel (1975)	493,800	474,700	968,500	51
Aluminum (1974)	15,724	1,940	17,664	90
Copper and Alloys (1974)	13,492	384	13,876	3
Lead (1974)	3,990	2,735	6,725	42
Zinc (1974)	1,732	1,083	2,815	39

Apparent consumption of steel has been growing at an average 7.4% a year. Aluminum demand has increased at 5% a year, compared to 15% for copper (all average growth rates for 1966-1974).

3. Capacity Utilization

Levels of capacity utilization are extremely poor throughout the sector. In the iron and steel segment these range from 17% for Hadisob's oxygen converters to 44% for hot rolling mills and 67% average for foundries. The picture is similar in nonferrous metals, the level is under 30% for almost all functions. However, it has been improving slowly in the last few years.

4. Investment

Capital expenditures on new projects and replacements totaled \$E41 million in 1973, \$E81 million in 1974, \$E75 million in 1975, and \$E71

million from January through September, 1976. The total 1971-1976 figure is £E390 million.

5. Imports

The principal imports of raw materials in 1975 were: alumina, 105,000 tons; steel scrap, 42,000 tons; unwrought lead, 2,500 tons. The most important finished product import in 1976 was steel (almost 500,000 tons, of which 222,000 tons were C.R. bars). Over half of the imports came from the EEC, particularly the United Kingdom and Italy. Imported steel has risen from being one-third of consumption in 1973 to almost one-half in 1976.

Other imports include 2,000 tons of aluminum, 383 tons of copper and alloys and 1,084 tons of zinc.

6. Exports

Sector exports have been very limited and have gone mostly to the Soviet Union. Most important is pig iron (71,000 tons), followed by C.R. sheets (36,000), and aluminum (33,000). Only aluminum and some pig iron have been exported to hard currency nations.

7. Employment

The metallurgical industries employ 52,140 people, of which 23,960 are at Hadisob. The average wage ranges between £E500 and £E600. The basic annual wage scale is as follows:

Chairman	£E1,990-2,400
Managers	1,200-1,800
Supervisors	540-1,400
Skilled	240- 780
Semi-Skilled	160- 360
Unskilled	140- 360

Between 50 and 70% are managers, engineers and skilled workers; only 5-15% are totally unskilled. There is little problem with emigration and turnover is only 1-5%.

Labor productivity in steel is 16 tons per man-year, compared to 100-250 tons in Europe and 50-100 tons in other LDC's.

8. Costs, Prices and Finances

Costs are well in excess of the selling price set by the Government, even though the price is supposed to be costs plus a margin. The result is that the sector showed a loss of ₪21 million after taxes, to which Hadisob contributed ₪20 million. Most fixed prices are lower than European export prices.

9. Strengths of Sector

Only two strengths can be identified: a large market and skilled labor.

10. Weaknesses of Sector

Weaknesses can be summarized as follows:

In steel--

- Inadequacy of raw materials, especially a high sodium chloride content and poor quality control of ores;
- Difficulties transporting ores; and
- Poor sinter and furnace practice.

In general--

- Inadequate maintenance;
- Poor training and management; and
- Overall very low capacity utilization.

C. OUTLOOK FOR SECTOR

1. General Development Strategy

The sector study argues that further development of the metallurgical sector is justified by extensive opportunities for background and forward linkages and import substitution; significant local demand; the need for independence from a fluctuating world market; and important savings of foreign exchange if the industry is run properly and at a high level of utilization. These arguments are reiterated for the steel industry although it is stressed that capacity should be for domestic needs only. A 70% utilization level is required for domestic production to make sense and all plants need to be brought up to it.

2. Projects

The following projects were recommended strictly where consumption exceeds capacity and where domestic production would be cheaper than imports:

- A major new integrated steel works to cost \$1 billion for each of two stages based on a projected deficit of liquid steel of 1.3 million tons.
- A move by Hadisob towards specialization in flat products as the new project comes on-stream, as well as concentration on improving utilization and solving current problems. Capital costs are to be \$200 million for rolling facilities, \$35 million for a tinning facility, and \$73 million for foundry developments.
- Other projects and modifications to existing iron and steel plants to cost \$250 million.

- Smelter expansion (\$95 million) based on an expected capacity deficit in aluminum by 1982, and its cessation as a net foreign exchange earner by 1980 at a time of an expected world shortage.
- A new copper rod casting plant.

The projects recommended would have capital costs of \$2,693 million.

3. Projected Consumption, Production and Capacity

Consumption of liquid steel--on the basis of historical trends, comparisons with other countries and correlation with expected GDP growth--is projected to be 1.8 million tons by 1982 and 2.2 million tons by 1987. This represents a 10% growth per annum. Liquid-steel-making capacity is expected to be sufficient in 1980, but a deficit of 169,000 tons will develop by 1982 and grow to 801,000 by 1985. Deficits of non-flat products, flat products, cold strip, and tinning plate will also develop. This forecast assumes that existing facilities will continue to produce at current rates, which is unlikely. It also assumes at least a 70% capacity utilization, which is considerably above present levels.

The market demand for nonferrous metals breaks down as follows: aluminum, 40,000 tons in 1982 and 52,000 in 1985; copper, 27,000 and 34,000 tons, respectively; and lead, 16,000 and 22,000 tons. New capacity is needed in lead, lead oxides, and zinc.

4. Investment

The total cost of all suggested investments in metals is US\$2,693 million, of which \$2 billion is for a new integrated steel complex and \$250 million would go for modifications of existing facilities. This compares to \$770 million provided in the Five-Year Plan, 1978-1982.

5. Employment

The manning requirement of the new integrated steel works would be about 14,000 people.

6. Imports and Exports

It is assumed the deficits will have to be covered by imports. In 1982, these would amount to 311,000 tons of non-flat metals, 80,000 tons of flat products and 53,000 tons of tinplate.

Export opportunities in steel are limited. Not only are costs now too high, but the Middle East and North Africa regions are expected to be net exporters by the 1980's. Only small countries such as Iraq, Kuwait, Tunisia, and Yemen will continue to import steel.

IV. ENGINEERING INDUSTRIES

A. STRUCTURE OF SECTOR

Engineering manufacturing industries cover five major product areas: fabricated metal products, non-electrical machinery, electrical machinery and appliances, transport equipment, and professional and scientific equipment. Metal fabrication, electrical and transport equipment each account for about 30% of the sector's output, machinery production for 7%, and professional/scientific equipment for 1%.

The engineering sector's share of gross manufacturing output is about 8% (11% of value added). The output of engineering industries as a proportion of total industrial output has remained constant for the past seven years, whereas it should be increasing in an industrializing nation.

About 70% of the total sector output of ₦287 million in 1975 was produced by 29 public sector companies under the Ministries of Industry and Industry Engineering Sector. About 12 military factories produce about 7% of the civilian engineering output and are particularly important in the small non-electrical machinery subsector. The private sector accounts for approximately 14% of all engineering production, manufactured by 229 private companies licensed by the Industrial Central Authority, and 12,413 workshops. (Of the workshops, 202 had more than ₦5,000 capital and/or 25 or more employees.) The private sector is particularly important in the fabrication of metal products (32% of the value of total production) and non-electrical machinery (21%).

Professional and scientific equipment (11%), electrical machinery (10%), and transport equipment (5%) are less important.

The balance of engineering products came from 15 public sector companies not affiliated to the Ministry of Industry.

B. PERFORMANCE OF SECTOR

1. Output and Growth

The total value of engineering industry output was ₪287 million in 1975. This represents a 57% growth (1970-1975) in current prices, slightly greater than the growth of all manufacturing output. The output in terms of weight was 9.8 million tons in 1976, compared to 11.6 million in 1975, 8.2 million in 1974, and 5.6 million in 1973. The 1977 target is 13.2 million and the actual January-September production was 9.8 million tons.

Public sector companies accounted for ₪180 million of this in 1975, compared to ₪118 million in 1973. Growth in real terms was -6.5% in 1973, 1% in 1974, and 31% in 1975. The private sector output of ₪23 million in 1975 was the result of a real 7% growth in 1973, 14% in 1974, and 37% in 1975.

The electrical machinery subsector showed the best growth performance with a 54% real increase in the value of production between 1972 and 1975. Transport equipment also showed impressive growth, 18% in real terms between 1972 and 1975. The other subsectors, particularly non-electrical machinery, showed poor results in terms of output growth.

2. Consumption

Apparent consumption, figured as domestic production minus exports, added to imports, is summarized in Table A-7.

A number of very important trends can be noted from the table:

- Demand is growing much more rapidly than production, implying an increasing reliance on imports. However, since domestic prices are fixed, and rise much more slowly than import prices, this figure is somewhat distorted.
- This trend holds true for all subsectors including those that show the best performances, most notably electrical machinery.
- Consumption of non-electrical machinery is very important and the lack of domestic production is striking.

3. Capacity and Capacity Utilization

Exact figures for total capacity and capacity utilization are lacking. It is evident that there is some surplus capacity in metal fabrications and significant underutilized capacity in television production, while most electrical manufacturers are producing to capacity. Overall, underutilized capacity is an important problem in most public sector companies.

4. Investment

The historical trend has been for public engineering companies to receive only 5% of the investment capital allocated to industry. This amount is considered inadequate for the necessary expansion of the sector. A total of \$E32 million has been invested between 1970/71-1975 of which 54% went for overall renewals and replacements, 15% to metal

TABLE A-7

APPARENT CONSUMPTION, ENGINEERING INDUSTRIES

	Value of	Growth	Domestic Production	
	Consumption 1975 (ME Millions)	1972-75 (%)	Percent of Consumption 1972	1975
Metal Fabrications	77.9	86	96.2	80.0
Non-Electrical Machinery	101.8	168	10.0	5.8
Electrical Machinery	127.9	114	76.0	56.1
Transport Equipment	208.1	51	64.3	34.2
Professional Equipment	<u>11.8</u>	<u>353</u>	<u>7.7</u>	<u>3.4</u>
TOTAL	527.5	136	63.6	40.1

Source: Engineering Sectoral Study.

fabrication projects, none to non-electrical machinery, 14% to electrical machinery, 14% to transport, and 2% to other. Centrally-planned investment has been lower than the investment intentions of the individual companies.

Private investment must be officially approved but is becoming increasingly important. It represented 69% of total project investment in 1975 despite the small size of each investment (€55,000 average). The foreign exchange component of investment in engineering projects has been 50% and is holding steady at that level.

5. Imports

The value of total engineering imports rose from €93 million in 1970 to €322 million in 1975, which represents 27.2% of total industrial imports in 1970 and 21.9% in 1975. However, much of the increase is represented by price inflation. Table A-8 outlines the import situation by subsector.

6. Exports

The percentage of engineering output exported was only 2.4% in 1975 compared to 1.9% in 1971. In value terms this translates to €5.4 million and €2.8 million, respectively. Metal fabrication exports have risen steadily, reaching €1.3 million in 1975 or 24% of total engineering exports. No non-electrical machinery has been exported. Electrical machinery exports have declined slowly to €200,000 or 4%. The best export performance is in transport equipment at €3.3 million, or 60% of exports. Professional and scientific equipment represented 12% at €650,000 in 1975. All exports went to COMECON and Middle Eastern countries.

TABLE A-8

IMPORTS, ENGINEERING INDUSTRY

	<u>Relative Importance (%)</u>		<u>Growth of Imports (%)</u>	<u>Value of Imports</u>
	<u>1970</u>	<u>1975</u>	<u>1970-1975</u>	<u>in Millions (1975)</u>
Metal Fabrications	4	5.4	434	16.9
Non-Electric Machinery	42	29.8	145	95.9
Electric Machinery	16	17.5	280	56.4
Transport	35	43.6	329	140.3
Scientific Equipment	3	3.7	322	12.0
TOTAL	100.0	100.0	247.0	321.6

Source: Engineering Sectoral Study.

7. Employment

Total employment figures are available only for engineering and metallurgy combined. These were 117,400 in 1976 and 92,700 in 1973. Public sector companies are responsible for about 70% of employment (compared to an 82% share of output). However, production per employee is lower on the average in public companies (£E2,800 per employee in 1975 versus £E3,700 in private companies). Labor performance is thought to be better in the private sector because of less excess labor, piecework incentives, and closer supervision. Public companies are usually hampered by excess labor, lack of financial incentives, poor utilization of time, slow work tempo, and inadequate effectiveness of work.

8. Major Strengths

Perhaps the strongest factor favoring the engineering sector is the significant opportunities for import substitution in all subsectors with the possible exception of metal fabrication. This appraisal is based on the fairly low domestic component of apparent consumption for engineering products.

The private sector should be considered an area of strength. Many companies have shown remarkable ingenuity in designing and building their own equipment to overcome the exchange restrictions and limitations on equipment imports which they have faced. Furthermore, labor productivity here is quite high.

9. Major Weaknesses and Problems

These can be summarized as follows:

- A shortage of basic management skills and a shortage of trained personnel at the supervisor level;
- Poor labor performance (not so acute in the private sector);
- Lack of any real marketing function;
- Technology gap, when compared to Europe, which has led to a difficulty in exporting (all the other problems also contribute to the lack of exports and uncompetitiveness);
- Long delays in obtaining supplies, which force companies to maintain excessively high inventories;
- Difficulties in executing new projects as a result of a lack of foreign exchange, construction materials, and construction workers;
- Absence of feeder industries;
- Delays in approving price increases;
- Underutilization of capacity in some areas; and
- Low priority of private sector for investment approval and foreign currency licenses.

C. OUTLOOK FOR SECTOR

1. Sector Development Strategy and Priorities

The strategy prepared for the engineering sector is based on the following factors:

- Imports currently account for 52% of the market for engineering products;

- Engineering products are crucial in the industrialization process;
- Consumption is expected to grow by 9.5% a year;
- Local producers can expect increasing pressure from imports;
- Planners hope for an increase in exports from £5.5 million in 1974 to £14.0 million in 1980;
- Many factories suffer from inefficiency, underutilization and low labor productivity.

2. Projects

The above factors were used as the basis for identifying a list of 30 possible projects which were then reduced to 11 by applying the following criteria:

- Contribution to import substitution;
- Export potential;
- Expansion of product range; and
- Correction of imbalances and improvements in operational efficiency.

Feasibility studies are suggested for:

- Private sector production of machinery and spare parts;
- New facilities for the manufacture of railway coaches and tramcars;
- The introduction of a new model to increase the domestic content of cars;
- The nationalization of television manufacturers;
- The manufacture of medium and large diesel engines;

- The manufacture of handling equipment;
- The manufacture of a new range of machine tools;
- The expansion of the production of trucks and buses;
- The enlargement of the product range of Nasr Boiler Co.;
- The manufacture of electric motors and generators; and
- The expansion of wet and dry battery facilities.

3. Projected Investment

The historic central planning allocation of 5% of the industrial investment capital for the engineering sector is to continue in the next five-year plan. This is not nearly enough for the import substitution, nationalization, and sector expansion plans. Furthermore, 50% of the required investment will be in foreign exchange. To meet the investment and foreign exchange deficits, the Government is turning to foreign joint ventures and the private sector in general. It is expected that the private sector will be supplying over 70% of the project investment as it responds to gaps created by the lack of public investment in the sector. Three joint ventures are already in the planning stages (steel valves, razor blades, and trailers) and are expected to bring in \$E48.0 million. Government investment is allocated in the following fashion: 21% for replacement projects; 55% for current projects; and 24% for new projects. By subsector, machinery gets nothing, metal fabrication 25%, electrical machinery 26%, transport 29%, and renewals and replacement 20%.

4. Export Potential

Egyptian engineering products are not competitive. The major reason for the high costs is the very high materials costs. The wage rate should be an advantage, but overmanning and low productivity often cause Egyptian labor costs to be higher than European costs. Increasing labor productivity could make the sector more competitive. Potential markets are Iraq, Syria, Sudan, Tunisia, and Libya.

5. Anticipated Balance of Trade in Sector

Given the rapidly-widening gap between consumption and production, the relatively low investment allocation, and the limited export potential, it is unlikely that the large deficit in the sector will be reversed in the foreseeable future.

V. BUILDING MATERIALS

A. STRUCTURE OF SECTOR

1. Make-Up of Sector

The building materials industry (BMI) is made up of the following products: cement and cement-based products, glass, ceramics, refractories, bricks, quarry products, and synthetic floor coverings. However, this summary focuses on cement and bricks since they are by far the most important components.

2. Public Vs. Private Roles

<u>Product Line</u>	<u>Sector and Percent</u>	<u>Number of Companies</u>
Cement	Public: 100%	Four companies and common sales office
Cement-Based Products	Public: 70%	Public--Seigwart Co., and 40 contractors; Private--688 makers of tiles
Bricks	Private: Almost 100%	400 private; One small public
Flat Glass	Public: 100%	El Nasr Glass Co.
Ceramics	50-50%	Four public; Many private
Refractories	Public: 100%	Two companies
Sand Lime Bricks	Public: 100%	One company
Quarry Products (Gypsum and Plaster)	50-50% Public: 100%	One company

3. Public Sector Structure

All public building materials companies are supervised by the Ministry of Housing and Reconstruction except for those who manufacture glass, ceramics, and refractories, which fall under the Ministry of Industry. Eight companies are involved in the former and four in the latter.

B. PERFORMANCE OF SECTOR

1. Cement

	Thousand Tons					
	<u>1971</u>	<u>1972</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>
Domestic Sales	3,834	3,923	3,552	3,263	3,616	3,373
Exports	901	971	523	192	97	29
Domestic Production	4,735	4,894	4,075	3,455	3,713	3,402
Imports	---	---	---	---	193	791
Apparent Consumption	2,933	2,952	3,029	3,071	3,717	4,135

Source: Sector Study.

A number of disturbing trends can be seen in the table above. In the first place, cement production has declined by an average 2.5% a year over the past five years. This decline has been attributed to aging of equipment, poor maintenance, severe deterioration of kilns because of misuse, lack of spare parts, and operational problems. Utilization of capacity fell below 75% in 1976 and is expected to

deteriorate further. Second, while output has decreased, consumption has grown steadily. In 1975, for the first time, cement had to be imported. The approximately one million tons of cement imported in 1977 will cost an average of £E34 a ton and will be sold internally for £E13, resulting in a cost of £E21 per ton for the Government. Third, exports have declined dramatically in one of the areas in which Egypt is in a position to export.

2. Bricks

Brick production in Egypt is almost completely in private hands. About 400 brickyards produce an average of five million each, with the largest producing 10-15 million. Average employment is 50, with a total employment of 20,000. Red bricks, by far the most important type, were previously made from silt from the Nile. Now that the Aswan Dam has cut this source of raw materials, brickyards are using agricultural topsoil. The Government is very anxious to get producers to switch to desert clay.

Brick production in 1976 was an estimated 1.2-1.5 million. Production appears to satisfy demand and there are no imports or exports.

3. Flat Glass

Flat glass is the only glass considered to be a construction material. It is produced by only one company--El Nasr Glass Co. Production of sheet glass has risen from 13,248 tons in 1970 to 15,906 in 1976. However, production reached 16,735 tons in 1973 and then plunged to 10,081 in 1975 before recovering.

Theoretical capacity is 22,400 tons, but actual productive capacity is only 18,000 tons. Capacity utilization has fluctuated wildly from 74% in 1970 to 93% in 1973 to 56% in 1975 and 88% in 1976.

There were no imports until 1975, and these reached 14,000 tons in 1976. No exports have been made.

4. Strengths of Sector

- Abundant sources of raw materials.
- Strong and growing demand for products.

5. Weaknesses and Problems

- Insufficient funds, especially foreign exchange.
- Shortage of skilled labor.
- Lack of incentives, which causes low labor productivity.
- Difficulties in transportation.
- General inefficiency of BMI.
- Lack of comprehensive long-range strategy and policies.
- Low level of technology.
- Poor state of equipment.

C. OUTLOOK FOR SECTOR

1. General Strategy and Projects

The sector study calls for the following steps:

- Set up a major program to improve efficiency and utilization.

Cement projects already proposed will satisfy demand in the 1980's. Until then, however, shortfalls can be met only through such a major program.

- Develop new capacity for asbestos pipes, asbestos sheets, and concrete pipes and poles.
- Proceed immediately with major conversion projects to produce bricks from desert clay rather than from topsoil. New capacity is needed in non-clay bricks and somewhat less in clay bricks.
- Expand existing clay pipe and floor tile manufacture.
- Construct a major new flat glass plant and one for glass wool and fiber glass.

2. Consumption Forecast: Major Subsectors

	Thousand Tons			
	1977	1980	1982	1986
Cement	5,312	7,072	8,064	11,176
Cement Products	536	734	831	1,143
Bricks (million units)	2,602	3,465	3,952	5,476
Ceramics	4.7	16.0	17.1	17.1
Flat Glass	43.0	57.0	66.0	91.2

3. Output Projections: Major Subsectors

	Thousand Tons			
	1977	1980	1982	1986
Cement ¹	3,230	3,385	3,360	3,360
Bricks (million units)	1,689	2,292	2,794	2,800

Others not available.

¹ Cement projection assumes existing capacity continues to produce at present rate which is very unlikely.

4. Difference Between Production and Consumption, Bricks and Cement

	Thousand Tons			
	<u>1977</u>	<u>1980</u>	<u>1982</u>	<u>1986</u>
Cement ¹ (deficit)	(2,082)	(3,687)	(4,704)	(7,816)
Bricks (deficit)	914	1,173	1,157	2,675
Million Units				

¹If all projects being proposed or studied are adopted, the cement deficit will be 2,082,000, 1,578,000 and 254,000 tons, respectively. It should be noted that projections are based on high-capacity utilization.

Deficits are also expected for cement-based products, ceramics (clay pipes and floor tiles), and flat glass, although the exact magnitude is not known.

It is assumed that the shortfalls will be covered by imports unless projects are implemented rapidly.

5. Export Potential

Exports are out of the question in all of the product areas except for cement because of their weight/value and because most countries endeavor to be self-sufficient in building materials. The exception is cement since many Middle Eastern countries are net importers. However, because of Egypt's current deficit in cement, it is not in a position to supply these markets. Long-term opportunities are limited because almost all the countries in the region have major cement expansion programs and the region is expected to produce a net surplus by 1985.

VI. PULP AND PAPER INDUSTRY

A. STRUCTURE OF SECTOR

1. Introduction

The pulp and paper industry is considered a part of the "chemical" sector which is very loosely defined and includes rubber, pharmaceuticals, fertilizers, leather, wood products, basic chemicals, and plastics as well as pulp and paper. Since the other sector reviews are based on major studies financed by an IBRD loan and papers prepared by a GOFI counterpart team, these sources are used here to ensure consistency, even though they are limited to pulp and paper. Pulp and paper represent about 26% of the sales value of the chemical sector.

2. Composition

The pulp and paper industry is made up of four public companies and nine small private mills. The public mills produce about 132,000 tons of paper and 45,000 tons of bagasse and rice straw pulp a year. The private mills are limited to 16,000 tons of cheap wrapping paper. Hence, most of the following discussion focuses on the public companies.

3. Ministerial Affiliation

In 1976, the industry was transferred from the Ministry of Industry to the Ministry of Culture for political reasons. Unfortunately, this has led to serious problems since many of the raw material and converting functions are still under the Ministry of Industry because the Ministry of Culture does not have the technical know-how to supervise industrial enterprises.

B. PERFORMANCE OF SECTOR

1. Output and Growth

Total domestic production of paper and board increased from 143,000 tons in 1973 to 158,000 tons in 1976. The most important components of this production are wrapping materials (73,500 tons in 1976), printing and writing (40,100 tons), and board (44,500 tons). Total production of pulp was 2,724 tons in 1976, of which 1,790 was rice straw and most of the balance was bagasse.

2. Consumption and Production

Apparent domestic consumption has significantly exceeded production. In 1973, total consumption was about 200,000 tons and this grew to 300,000 in 1976. The most important components were wrapping paper (100,000 tons), printing and wrapping (88,000 tons), and board (55,000 tons). The production deficits were made up through imports. After 1965, the production deficit began to decline until 1970 but has been growing rapidly since then. It should be noted that true market demand (which includes suppressed demand) is about 150,000 tons greater than apparent consumption (see Table A-9). Nominal capacity in private firms is about 21,000 tons and production is about 16,000 tons.

3. Employment

About 6,000 employees work in the paper and pulp industry. The wage rates range from ₱0.066 to ₱0.165 per hour for unskilled workers and ₱0.082 to ₱0.165 per hour for semi-skilled workers and ₱0.111 to ₱0.656 per hour for skilled workers. Managers earn ₱1,200 to ₱1,800 a year and clerks earn ₱144 to ₱360 a year.

TABLE A-9

CONSUMPTION, PRODUCTION AND IMPORTS
OF PAPER AND BOARD: SELECTED YEARS

(Thousand Tons)

<u>Year</u>	<u>Consumption</u>	<u>Production</u>	<u>Imports</u>
1965	206	105	100
1967	197	109	88
1970	207	136	72
1972	230	149	81
1974	227	132	98
1975	275	150	125
1976	306	167	147

Source: Chemical Sector study.

4. Imports and Exports

Because of a lack of domestic capacity for pulpmaking, as well as limited raw materials, 25,950 tons of pulp were imported in 1973 and 54,200 in 1976. This compares with 46,280 and 41,000 tons, respectively, produced domestically. No information is available on imported equipment.

Of the approximately 150,000 tons of imported products in 1976, the most important were newsprint (49,000 tons), printing and writing (47,600), and wrapping (27,500):

No paper or board has been exported in recent years.

5. Strengths of Sector

Inexpensive fibrous raw materials, bagasse and rice straw are available and only require facilities to convert them into pulp.

- Wage rates are comparatively low.
- There is a large captive market.

6. Weaknesses of Sector

- Jurisdiction of Ministry of Culture.
- Lack of maintenance and old age of some equipment.
- Lack of quality control.
- Absence of incentives and competition.
- Shortage of middle- and high-level technicians and trademen; emigration is a problem.
- Unstable supplies of raw materials.
- Overstaffing.

C. OUTLOOK FOR SECTOR

1. Projects

The major criteria for selecting projects are: availability of raw materials; production deficits; possible economies of scale; and geographic considerations (access to raw materials and transport).

Because new plants take four to five years to come on-stream, highest priority in the sector study is given to upgarding existing capacity. New projects recommended are:

- A one machine bagasse newsprint facility attached to a sugar mill;
- Three small wood-free printing and writing plants, also attached to sugar mills;
- A wood content printing and writing facility;
- A market pulp mill;
- A writing and printing paper facility;
- A corrugating medium and linerboard plant;
- A duplex and multiple boards plant;
- A tissue mill;
- A small cigarette paper producer; and
- A wastepaper mill.

Most of these projects would have a capacity of 100 to 350 tons a day.

The average cost of the projects is \$50-100 million.

2. Consumption and Production

Consumption of paper and board is projected by the sector study at 408,000 tons in 1980 and 569,000 in 1985. On the other hand,

production is expected to be only 184,000 tons in 1980 and 200,000 in 1985, creating a growing deficit which must be filled by imports.

3. Investment

The projects, which had been prepared and approved while the industry was administered by the Ministry of Industry, must now be reprocessed by the Ministry of Culture so there is no way of estimating future investment. However, the sector study has proposed the projects listed above. The total investment required by these would be about \$500 million. Since these new projects would take four to five years to come on-stream, expansion and refurbishing of existing plants is given highest priority and this would cost an additional several million dollars.

4. Export Potential

As mentioned, imports are expected to rise rapidly. As domestic production increases, increased pulp imports will be required unless capacity is expanded. Imports of paper products will rise to 225,000 tons in 1980 and 369,000 tons in 1985 before slowly declining as new projects come on-stream and domestic consumption begins to level off.

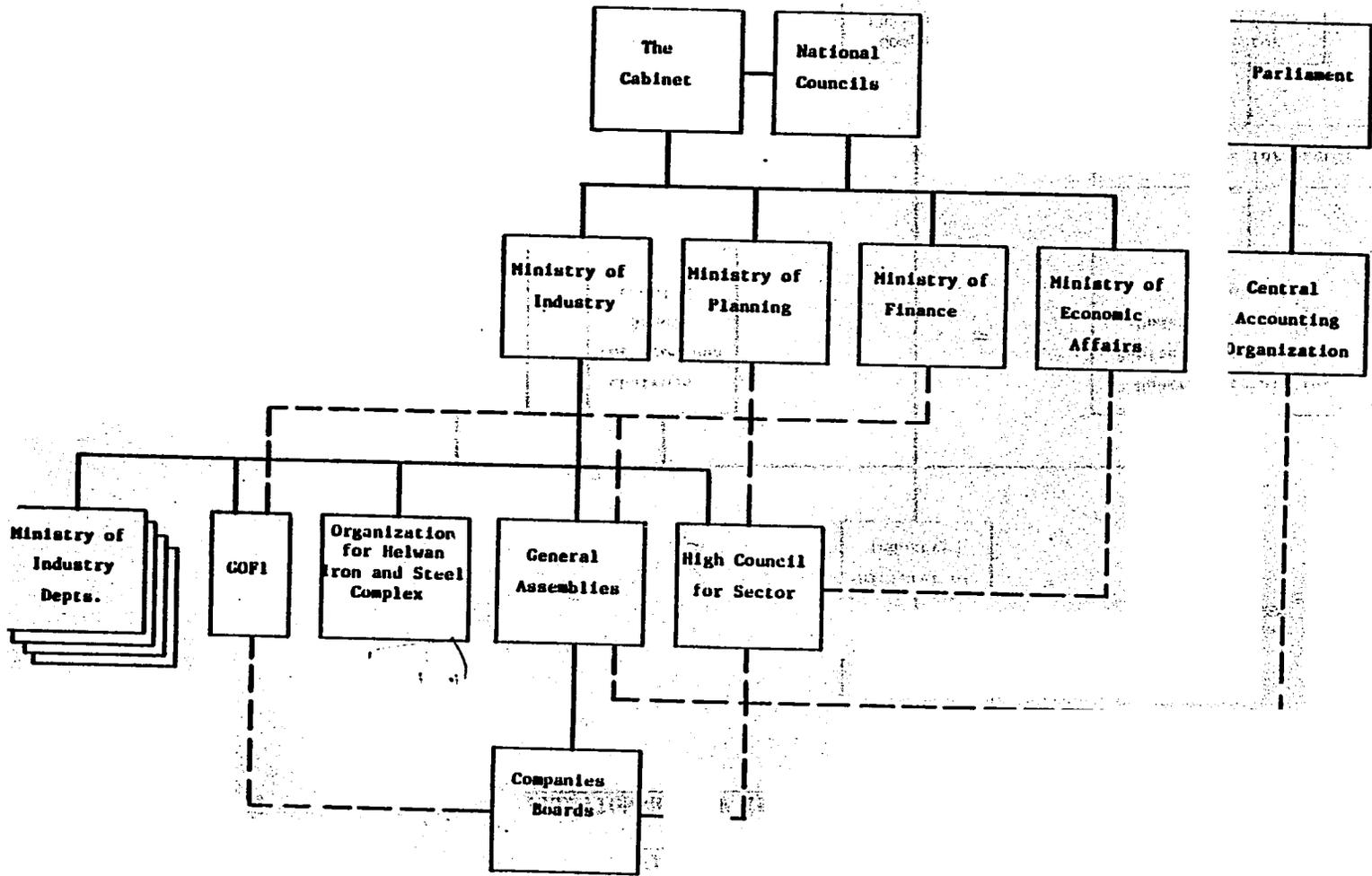
Exports are unlikely in the foreseeable future, partly because of the domestic deficit, but also because there are few potential markets. Some export possibilities exist for newsprint, coated papers, and folding-box board if capacity can be expanded in these areas.

APPENDIX B

ORGANIZATION OF PUBLIC SECTOR
DECISION MAKING FOR INDUSTRY

FIGURE B-1

RELATIONSHIPS OF COMPANIES TO GOVERNMENT ORGANIZATIONS



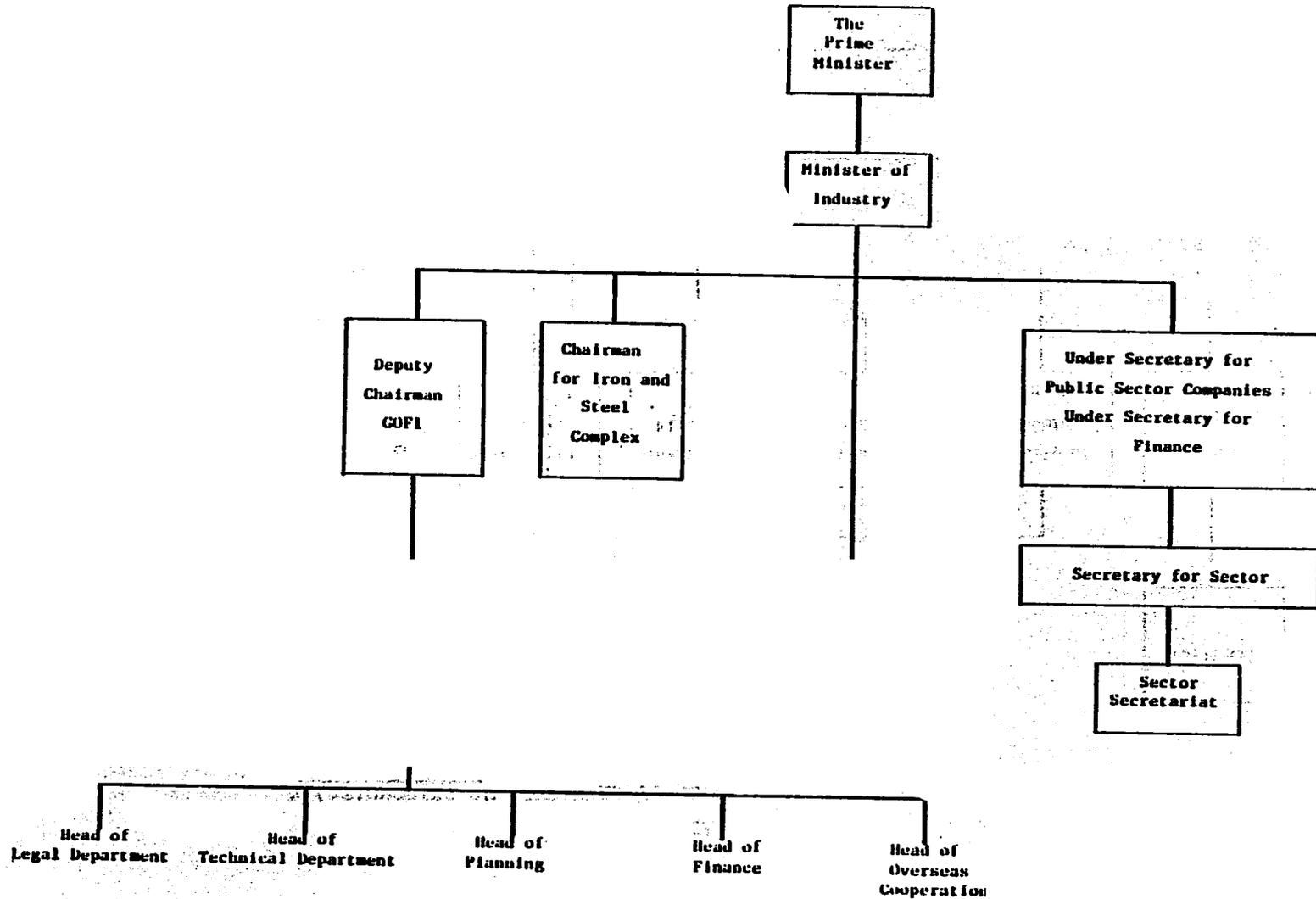
B-1

Arthur D Little Inc

Source: A Strategy Study of the Egyptian Metallurgical Industry, Phase I Report, 1977, Atkins Planning, Ltd.

FIGURE B-2

RELATIONSHIP OF INDIVIDUALS



B-2

Arthur D Little Inc

Source: A Strategy Study of the Egyptian Metallurgical Industry, Phase I Report, 1977, Atkins Planning, Ltd.

FIGURE B-3
COMPOSITION OF GENERAL ASSEMBLY FOR COMPANIES

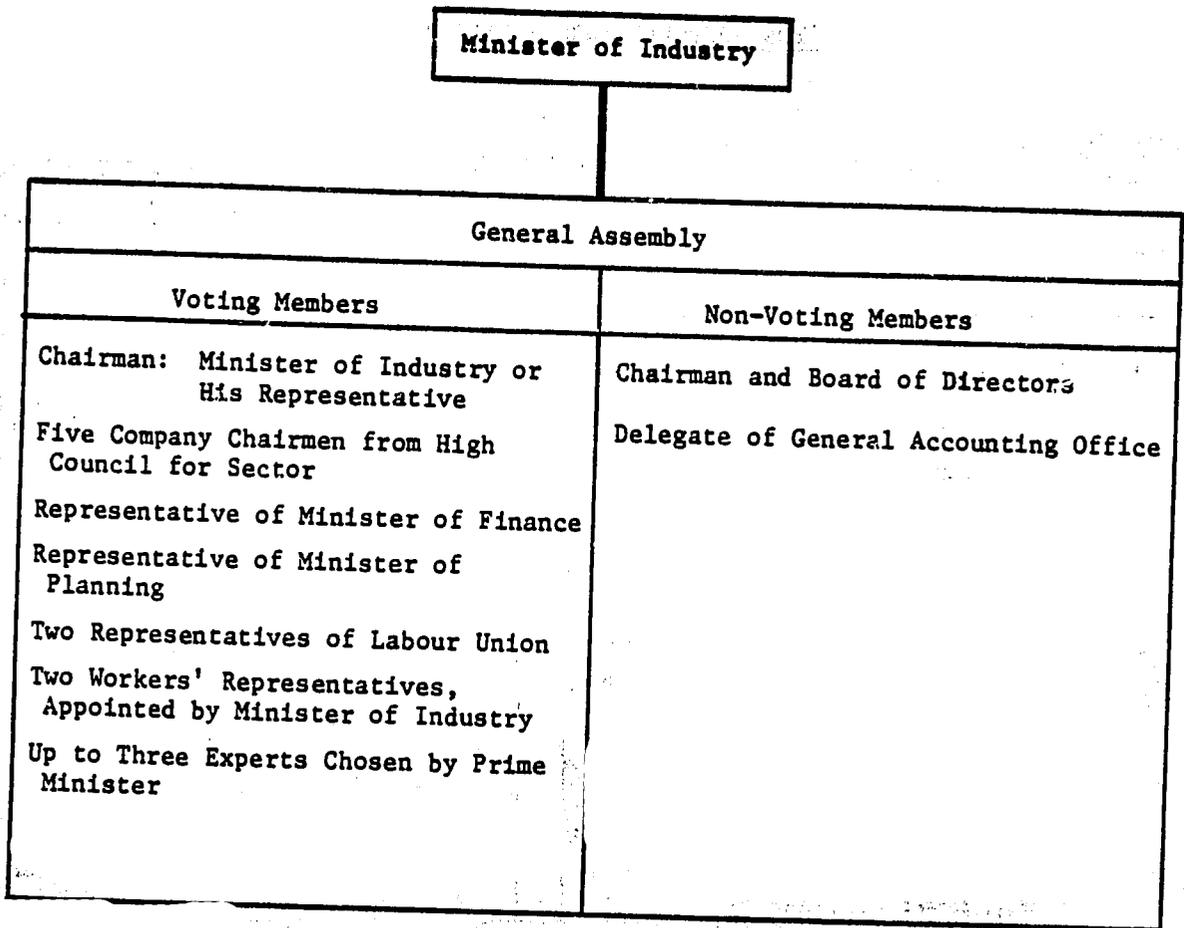
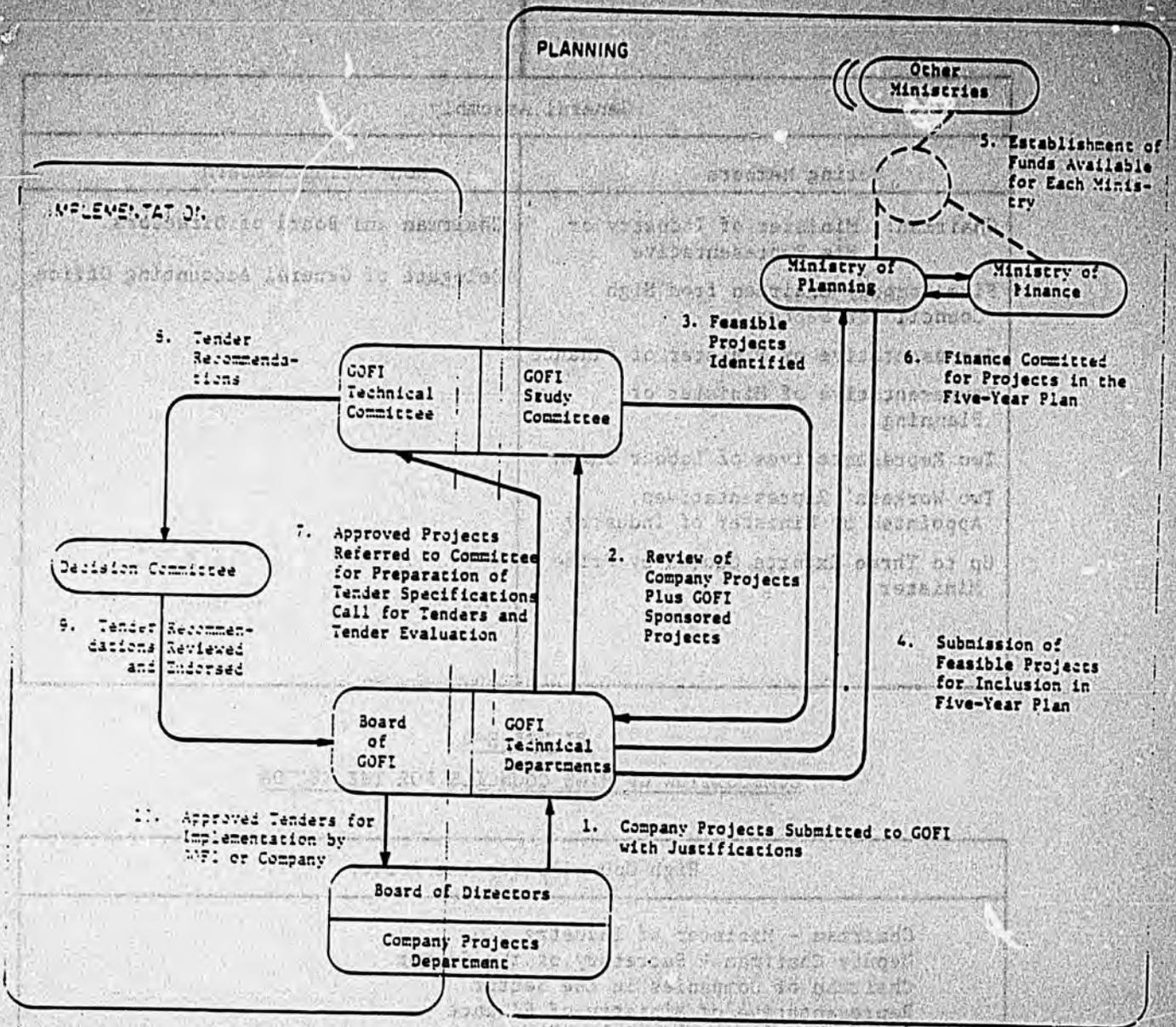


FIGURE B-4
COMPOSITION OF HIGH COUNCILS FOR THE SECTOR

High Councils for the Sector
Chairman - Minister of Industry Deputy Chairman - Secretary of the Sector Chairman of Companies in the Sector Representative of Ministry of Finance Representative of Ministry of Planning Representative of Ministry of Economics at Least Three Experts in the Sector Activity or Economic, Administrative or Legal Fields Technical Secretariat

FIGURE B-5
PROCEDURE FOR APPROVAL AND IMPLEMENTATION OF NEW PROJECTS



Composition of Committees and Boards

Decision Committee
 Deputy Chairman of GOFI
 Secretary of Sector
 Chairman of Company
 General Managers GOFI
 Finance Department and Legal Department
 Representative of Ministry of Finance
 Representative of National Legal Council
 Up to Two Experts from GOFI

Technical Committee
 Representatives of:
 GOFI Technical Department
 Finance Department
 Legal Department
 Company Project Department
 Sector Secretariat

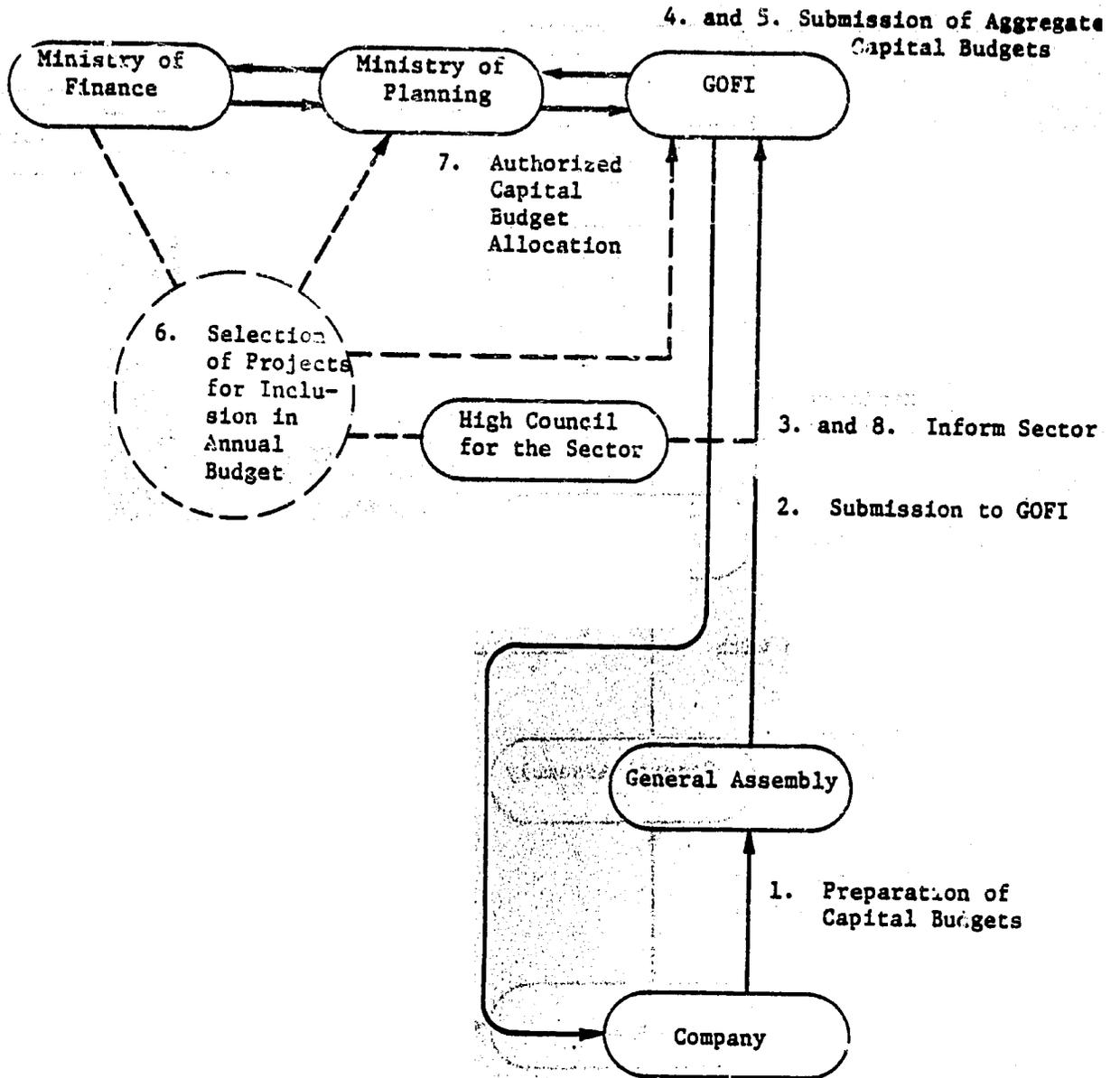
Study Committee
 (Typically)
 Representative of the Company
 Experts from GOFI
 Other Experts

Board of GOFI
 Chairman Minister of Industry
 Deputy Chairman
 Secretaries of the Sectors
 Under Secretaries of Ministry of Planning, Industry, Finance and Economic Affairs
 Head of Central Agency for Mobilization and Statistics

Source: A Strategy Study of the Egyptian Metallurgical Industry, Phase I Report, 1977, Arkins Planning, Ltd.

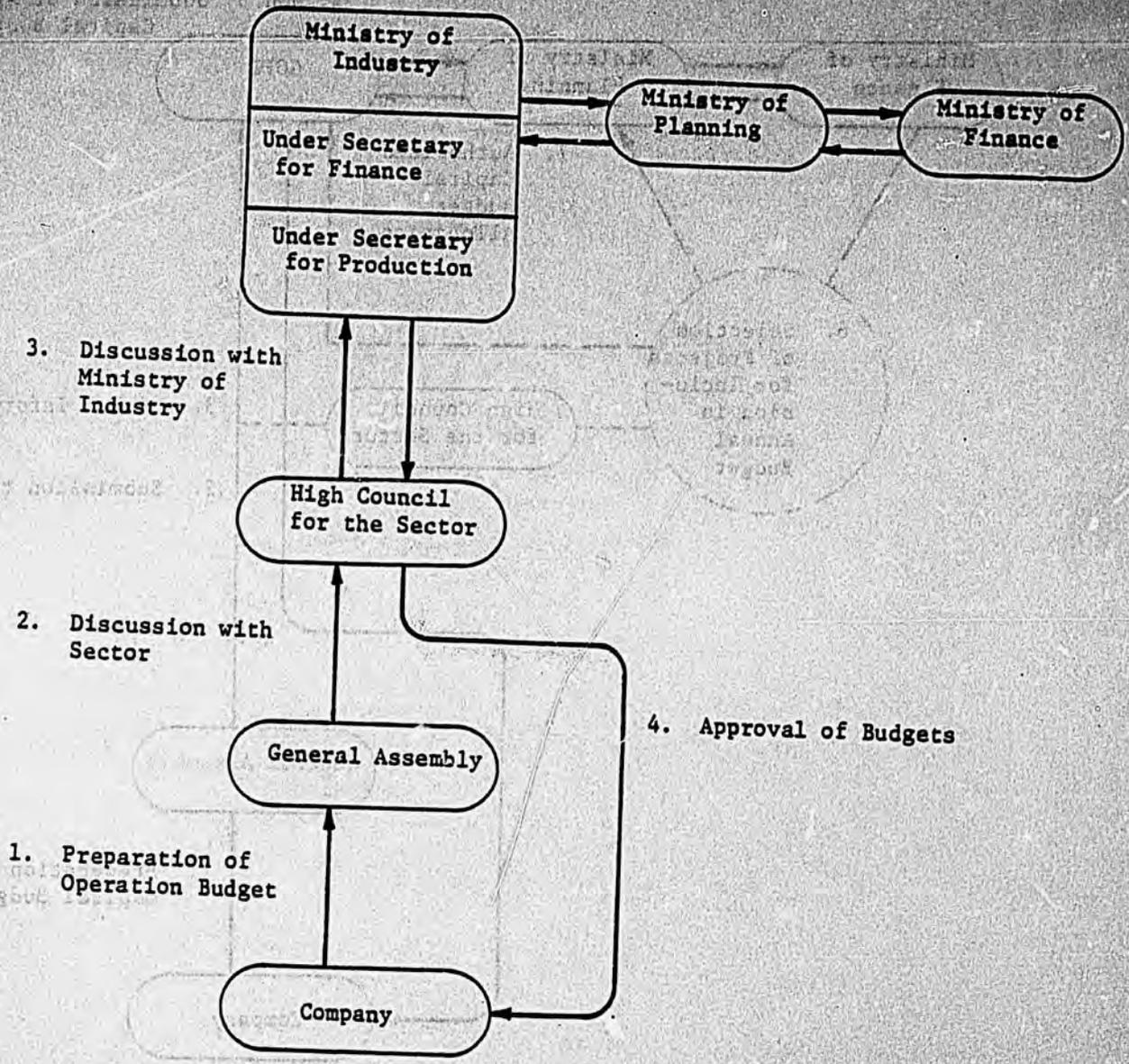
FIGURE B-6

PROCEDURE FOR ANNUAL CAPITAL BUDGET ALLOCATION



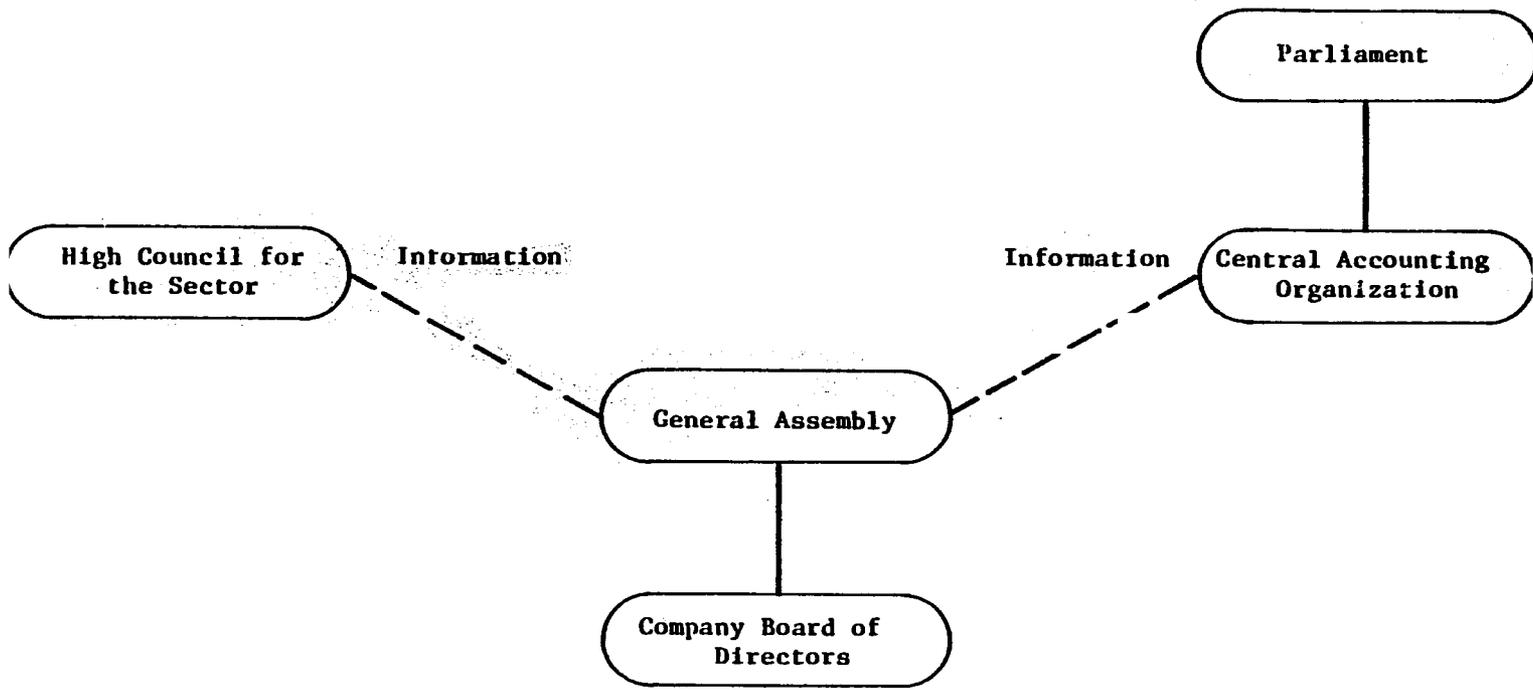
Source: A Strategy Study of the Egyptian Metallurgical Industry, Phase I Report, 1977, Atkins Planning, Ltd.

FIGURE B-7
PROCEDURE FOR ANNUAL OPERATIONS BUDGETS



Source: A Strategy Study of the Egyptian Metallurgical Industry, Phase I Report, 1977, Atkins Planning, Ltd.

FIGURE B-8
PROCEDURE FOR REVIEW OF COMPANY RESULTS



Source: A Strategy Study of the Egyptian Metallurgical Industry, Phase I Report, 1977, Atkins Planning, Ltd.

APPENDIX C

LABOR LAWS

APPENDIX C

LABOR LAWS

I. LABOR LAWS--LAW 91 OF 1959

This law, regulates employment matters in the private and public sectors.¹ Its principal provisions include the following:

- Employment of unemployed workers:
 - Administrative mechanisms are established for processing registration and placement of workers seeking employment;
 - Employers are obligated to notify the Employment Office of all jobs which become vacant or are created;
 - Employers are obligated to file semi-annual statements with the employment office of the Ministry of Manpower and Training showing:
 - the number of employees and workers according to job classification, age and nationality;
 - for the preceding reporting period, jobs which became vacant or were created, those which were filled and, reasons for not filling the rest;
 - for the following reporting period the expected increase or decrease in the number of jobs.

¹ At the time of the promulgation of this law, Government and public sector employees covered under Law 279 of 1946 were exempted from Law 91. The Law required the gradual application of its provisions to public sector under progressive presidential decrees (Article 4 of the Law and Article 5 of the Presidential Promulgation). It is assumed that such presidential decrees have been issued over time and that the Law is now applicable to both the private and public sectors.

- Employers may be compelled by the Ministry of Manpower and Training to employ workers according to the chronological order of their registration with Employment Offices.
- Vocational Rehabilitation and Employment of Disabled Persons:
 - Administrative mechanisms are established for creating facilities and procedures for the vocational rehabilitation of disabled persons;
 - Employers with 50 or more workers are obligated to have 2% of their workers be disabled persons who have been rehabilitated. Disabled veterans have priority of appointment.
- Employment and Business Activities of Foreigners:
 - Administration mechanisms are established for issuing work permits for foreigners to engage in any kind of work.
- Apprenticeship, Vocational Training and Labor Contracts:
 - Administrative mechanisms are established which provide guidelines for apprenticeship and vocational training and identifying the professions, training programs, examinations, and certification involved.
 - Employers and apprentices are expected to sign a labor contract which can be terminated on three days' notice by either party.
- Individual Labor Contract:
 - Regulations pertaining to individual contracts are established;

- Employers and workers are expected to sign labor contracts specifying the terms of employment;
- A probation period of more than three months may not be fixed;
- A fine exceeding the equivalent of five days for any single offense may not be imposed on a worker;
- A worker accused of a crime or misdemeanor at the place of work or of inciting to strike may be suspended until a competent authority rules on the matter;
- Contracts not renewed upon expiration but abided to by both parties are considered renewed for an indefinite period, but may be terminated by either party giving a notice of termination (30 days for monthly paid workers and 15 days for other workers);
- Workers are entitled to indemnity payments for contracts terminated by the employer (for a definite period at expiration of contract, for indefinite period at termination)
- Early retirement age is set at sixty, and employers have the right to terminate contracts of employees reaching this age.

Fringe Benefits:

- After one year of service, an employee is entitled to 14 days' vacation leave; after 10 years of service the vacation rises to 21 days. An employee may not be hired for another job while on vacation;
- An employee is entitled to 10 holidays with pay per year. Work during such holidays is to be performed at double pay;

- An employee is entitled to 70% salary for the first 90 days of sick leave, and 80% of pay for the next 90 days during any one year. A worker suffering from tuberculosis, leprosy, mental disease or any chronic disease is entitled to indefinite sick leave with pay;
- The employer is required to provide means of transportation for workers employed in places where adequate means of transport do not exist;
- In places far from inhabited localities, the employer is required to provide subsidized housing and meals.

Reasons for Termination of Contract by Employer (10 specific cases only):

- Misrepresentation of identity, false certificates or recommendations;
- Probation;
- Committing an act causing heavy material damage;
- Failure to observe written safety instructions;
- Persistent absenteeism;
- Failure to carry out essential duties covered by contract;
- Divulging commercial or industrial secrets;
- Conviction for a crime or misdemeanor involving dishonor, dishonesty, immorality;
- Being under the influence of alcohol or drugs during working hours;
- Assault on supervisors;

- Termination of Contract by Worker (five specific cases):
 - Misleading representation of work conditions by employer;
 - Failure by employer to fulfill obligations under Law 91;
 - Immoral act committed by employer on worker or his family;
 - Assault on worker;
 - Safety or health hazard.
- Procedure for Terminating a Contract in Case of Death of Worker are Described.
- Collective Labor Contract:
 - Collective contracts between syndicates and employers establish wage rates, working hours, leaves, training, arbitration procedures, and administrative mechanisms.
- Organization of Work:
 - General provisions are specified;
 - The employer is obligated to take precautions to protect a worker's health;
 - In establishments employing 50 workers or more a joint Consultative Committee consisting of six members (three representing the employer, three representing the worker) must be formed, its principal concern being the improvement of working conditions and increasing productivity;
 - The establishment of joint Consultative Boards for each industry, consisting of employers and representatives from the Ministries of Manpower, Industry, and Economy, is required with the purpose of determining wage policy, training, and productivity standards;

- Working hours (six days, seven hours per day), rest intervals, and overtime conditions are specified;
- Employment of juveniles below age 12 is illegal, and certain limitations exist on the employment of these below 15 or 17 years of age;
- Employment of women--guidelines, rules for non-discriminatory employment, maternity leaves are described;
- Mines and quarries--safety standards and working conditions are specified;
- Wages--joint and interministerial committees (consisting of representatives of the Manpower, Economy and Industry Ministries, employers and labor) must be set up to consider minimum wages.

Trade Unions:

- Trade unions are meant to: increase worker productive capacity; enable workers to contribute to industrial development; defend their interests; protect their rights; and work for the improvement of their material and social circumstances;
- The Law describes the procedures for establishing trade unions, delineating their legal authority, finances and organizations.

● Labor Disputes:

- Provisions for conciliation and arbitration are described.

● Work Inspection and Judicial Police:

- Labor Inspectors are called for and their powers are outlined by the Law.

- Penalties:

- The penalties for infringement of any of the provisions of the labor law are listed.

II. PUBLIC SECTOR EMPLOYEE PERFORMANCE--LAW 61 OF 1971

This law regulates Government and public sector employment.

Provisions relative to employee performance are indicated below.

- Article 16

All employees are to be rated periodically. Any employee graded "average" or lower, should be notified in writing. Such an employee has the right to appeal--in writing--within two weeks from the date of notification. The appeal should be sent to the Chairman of the Board of Directors. A decision should be taken within a month from the date in which the appeal was submitted. This decision is final.

- Article 17

With a decision from the Chairman of the Board, an employee whose grades were below average in two consecutive reporting periods, could be transferred to another job that suits his abilities. If, however, such an employee is sent two consecutive reports with a "poor" grade, he could be downgraded and his salary lowered (the wage cut in this case should not exceed one-fourth of his salary). The Board of Directors could terminate the services of an employee upon receiving a third poor grade.

● Article 45

It is prohibited for employees to:

- reveal classified information about or from his job;
- keep for himself any original document pertaining to his work or to remove such documents from files;
- have another job if it will adversely affect his main duties;
- perform any tasks for others with or without pay, even after working hours, unless he is authorized to do so by the Chairman of the Board of Directors, and within the context of the Law;
- undertake any business or commercial activities, especially those related to his job;
- participate in establishing firms in the same line of activity pursued by his employer;
- borrow or lend from any agency that does business with the unit employing him or any one connected to it;
- accept any rewards, commissions, or gifts or any kind that are connected with job performance;
- collect monies for any person or agency, or distribute flyers or solicit signatures for illegal purposes;
- participate in organizing any meetings inside work premises without management consent;
- provide a statement about the job to newspapers or any publishing firm, unless authorized to do so by the management.

● Article 46

Any employee that violates the rules of the system or his job's duties is liable to disciplinary action established by the management. Penalties are specified in Article 48.

● Article 47

No penalty should be imposed without a written investigation and hearing.

● Article 48

Penalties are (in increasing severity):

- reprimand;
- wage cut for a period not in excess of two months;
- suspension from work with one-half wage for a maximum period of six months;
- exclusion from wage increases or postponement for a maximum period of three months;
- wage reduction (in excess of two months);
- downgrading employee's position;
- downgrading the position and wage reduction;
- termination of service.

III. CORPORATE LAW: EGYPTIAN EMPLOYEE REQUIREMENTS--LAW 26 OF 1954

This Law regulates the operation of joint stock companies.

Provisions related to employees are as follows:

- Companies are obligated to retain Egyptians in 90% or more of the positions, or pay 80% of the payroll to Egyptians--except when exempted by the Minister of Finance, Economy and Trade.

- Egyptians employed in Egypt must account for no less than 75% of the total number of employees, or the payroll for Egyptians must be no less than 65% of the total company payroll, except when exempted by the Minister of Finance, Economy and Trade.

(The above are Articles 94 through 96 of the Corporate Law. Law 43 joint venture companies are not exempted from these provisions.)

APPENDIX D

EDUCATIONAL PROGRAMS

APPENDIX D

EDUCATIONAL PROGRAMS

The educational and vocational training system in Egypt is presented in Figure 1 and summarized briefly below.

I. FORMAL EDUCATION

Enrollment in the primary education is about four million pupils and represents about 75% of the age group (it also includes some 19% of the students outside the 6-11 age group).

Enrollment in the preparatory level has grown from about 925,000 in 1972 to 1.4 million in 1976, an annual increase of roughly 10%. The enrollment ratio is about 50% of the age group as well as 26% of the students outside the 12-14 age group.

Enrollment in secondary general education has grown from about 300 thousand in 1971 to 360 thousand in 1976, an annual increase of about 3.5%. Enrollment in secondary technical education has grown by the same order of magnitude.

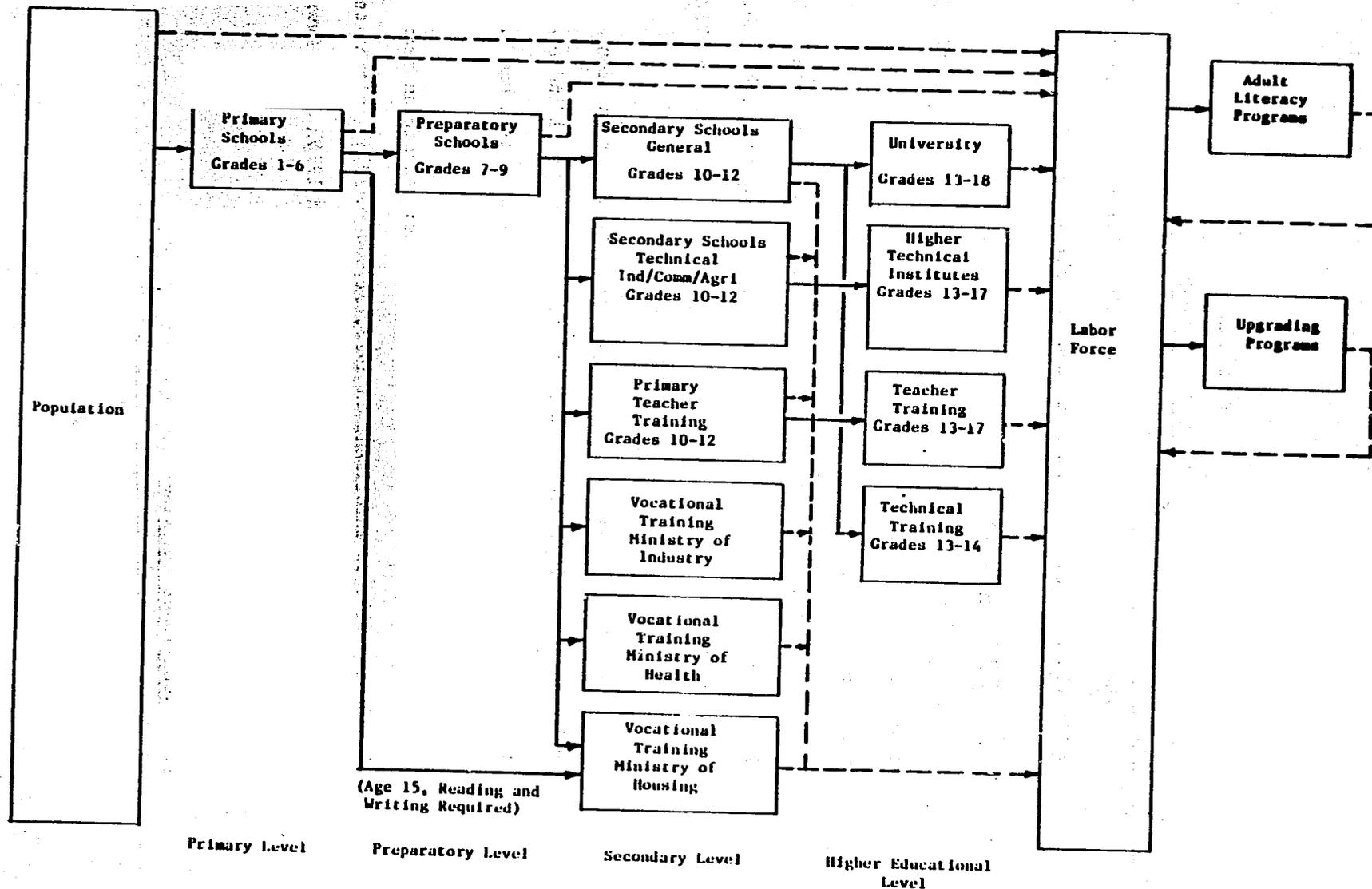
Higher education consists of three levels: technician training institutes (16,000 enrollment in 1972, 31,000 in 1976); higher technical institutes (42,000 enrollment in 1972, 50,000 in 1976); and universities (220,000 enrollment in 1973, 300,000 in 1976).

II. VOCATIONAL TRAINING

Enrollment in the Ministry of Industry formal training and apprenticeship program is about 8,000. The Ministry operates some 30

FIGURE D-1

EDUCATIONAL AND VOCATIONAL TRAINING SYSTEMS IN EGYPT



D-2

centers. The three-year program, which competes with the Ministry of Education secondary technical education program, consists of one year of instruction in a training center and two years of a cooperative work-study program with a public sector company. The Ministry of Industry's Productivity and Training Centers also operate short term upgrading programs for those already in the labor force. The Ministry of Industry's vocational training program dates to 1954 and has ILO support. Between 1954 and 1960 some \$50 million was expended on industrial training programs. The facilities, equipment and instructional material for this program are outdated and need upgrading and modernization.

The Ministries of Agriculture and Housing also offer vocational training programs.

The World Bank currently is supporting a \$54 million project to increase the magnitude and quality of vocational training. Much of the effort will go to create new building trades vocational training centers and supply equipment and technical assistance for teacher and technician training institutes.

III. MANAGEMENT TRAINING

Management training takes place at the university level (particularly in the facilities of commerce and engineering and in special work-study programs abroad). The American University of Cairo (AUC) and the National Institute for Management Development (both non-public institutions) offer various short and long-term "upgrading" programs. The Ministry of Industry's Productivity and Training Centers offer short term industrial engineering and management seminars and are interested in offering consulting services to public sector companies.

IV. ADULT LITERACY

Public law requires all ministries, organizations, institutions and large employers to provide literacy programs for their employees.

The adult literacy program has not met with great success except in some urban areas. The Government considers programs for eliminating the source of illiteracy by insuring that all children complete at least primary education, to be more cost effective than highly expensive adult literacy programs.

ADULT LITERACY PROGRAM

The Government is supporting a 500 million program to increase the training and quality of vocational training. This will go to create new building trades vocational training centers and equip equipment and technical assistance for these and related training facilities.

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APPENDIX E

MAJOR FOREIGN LOANS TO
THE INDUSTRIAL SECTOR

APPENDIX E

MAJOR FOREIGN LOANS TO THE INDUSTRIAL SECTOR

<u>A. EASTERN BLOC COUNTRIES</u>			<u>Millions</u>
1964	USSR	Iron and Steel	\$1,300.0
1972	East Germany	Various	\$ 683.0
1976	Rumania	Study Chemical and Petrochemical Industry Projects	\$42.7
<u>B. D.A.C. COUNTRIES</u>			
1975	USA	Industrial Production Needs	\$ 20.0
1975	USA	GOFI Various	\$ 5.0
1976	USA	Suez Cement Plant (grant)	\$ 90.0
1976	USA	Mahalla Textile Rehab	\$ 96.0
1976	USA	Bank of Alexandria	\$ 32.0
1977	USA	Synthetic Material Production	\$ 40.0
1977	USA	Synthetic Fiber	\$ 15.0
1978	USA	Development Industrial Bank	\$ 12.5
1978	USA	Maadi Cement Plant	\$ 95.0
1978	USA	Flat Glass Plant	\$ 15.0
1978	USA	Railway Rolling Steel	\$ 40.0
1973 to 1977	West Germany	Fertilizer Plant and Spiral Welded Pipes	DM546
1974 to 1976	France	Continuous Casting	FF 40
		Polyester Fiber	FF 42
		Beet Sugar Project (under study)	FF120
1969 to 1977	Denmark ¹	Fruit Co. Equipment	\$ 17.7
		Fruit Canning, Beer Pasteurizing and Other Equipment for Food Industry	\$ 15.0
		Shipyards Equipment	\$ 25.0

¹Eighteen-year loan without interest--seven-year grace period.

APPENDIX E
(Continued)

MAJOR FOREIGN LOANS TO THE INDUSTRIAL SECTOR

<u>C. OPEC COUNTRIES</u>			<u>Millions</u>
1974 to 1976	Arab Fund	Talka Fertilizer Plant ¹	\$22.87
1977	Arab Fund	Kafra el Dhwar Textile ¹	\$34.5
1974 to 1976	Kuwait Fund	Talka Fertilizer Plant	\$24.46
1974 to 1976	Abu Dhabi Fund	Talka Fertilizer Plant	\$14.2
 <u>D. WORLD BANK GROUP</u>			
1972 to 1973	Bank Group	Cotton Ginning	\$18.7
1973	Bank Group	Development Industrial Bank	\$15.0
1973 to 1974	Bank Group	Talka Fertilizer Plant ²	\$20.4
1974	Bank Group	Agricultural/Industrial Imports	\$70.0
1975	Bank Group	Tourah Cement	\$40.0
1975	Bank Group	Development Industrial Bank II	\$25.0
1976	Bank Group	Arab Ceramic Co.	\$ 5.0
1976	Bank Group	Textile Rehab ³	\$52.0
1977	Bank Group	Industrial Imports II	\$70.0
1977	Bank Group	Iron Ore Study	\$ 2.5

¹With World Bank Group.

²With Kuwait, Abu Dhabi and Arab Funds.

³With Arab Fund.