

**BASIC DESIGN STUDY REPORT
ON
THE PROJECT
FOR
ESTABLISHMENT OF DRUGS STORAGE
AND DISTRIBUTION CENTER
IN
THE ARAB REPUBLIC OF EGYPT**

AUGUST 1988

JAPAN INTERNATIONAL COOPERATION AGENCY

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PREFACE

In response to the request of the Government of the Arab Republic of Egypt, the Government of Japan has decided to conduct a Basic Design Study on the Project for Establishment of Drugs Storage and Distribution Centre and entrusted the study to the Japan International Cooperation Agency (JICA). JICA sent to Egypt a Basic Design Study Team headed by Mr. Akira Kawahara, Deputy Director, First Evaluation and Registration Division, Pharmaceutical Affairs Bureau, Ministry of Health and Welfare from March 26 to April 24, 1988.

The team had discussions on the Project with the officials concerned of the Government of Egypt and conducted a field survey in Cairo. After the team returned to Japan, further studies were made and a draft report was prepared and, for the explanation and discussion of it, a mission headed by Mr. Kazushi Endoh, Expert of Pharmaceutical Affairs, Inspection and Guidance Division, Pharmaceutical Affairs Bureau, Ministry of Health and Welfare was sent to Egypt from August 1 to August 10, 1988. As a result, the present report has been prepared.

I hope that this report will serve for the development of the Project and contribute to the promotion of friendly relations between our two countries.

I wish to express my deep appreciation to the officials concerned of the Government of the Arab Republic of Egypt for their close cooperation extended to the team.

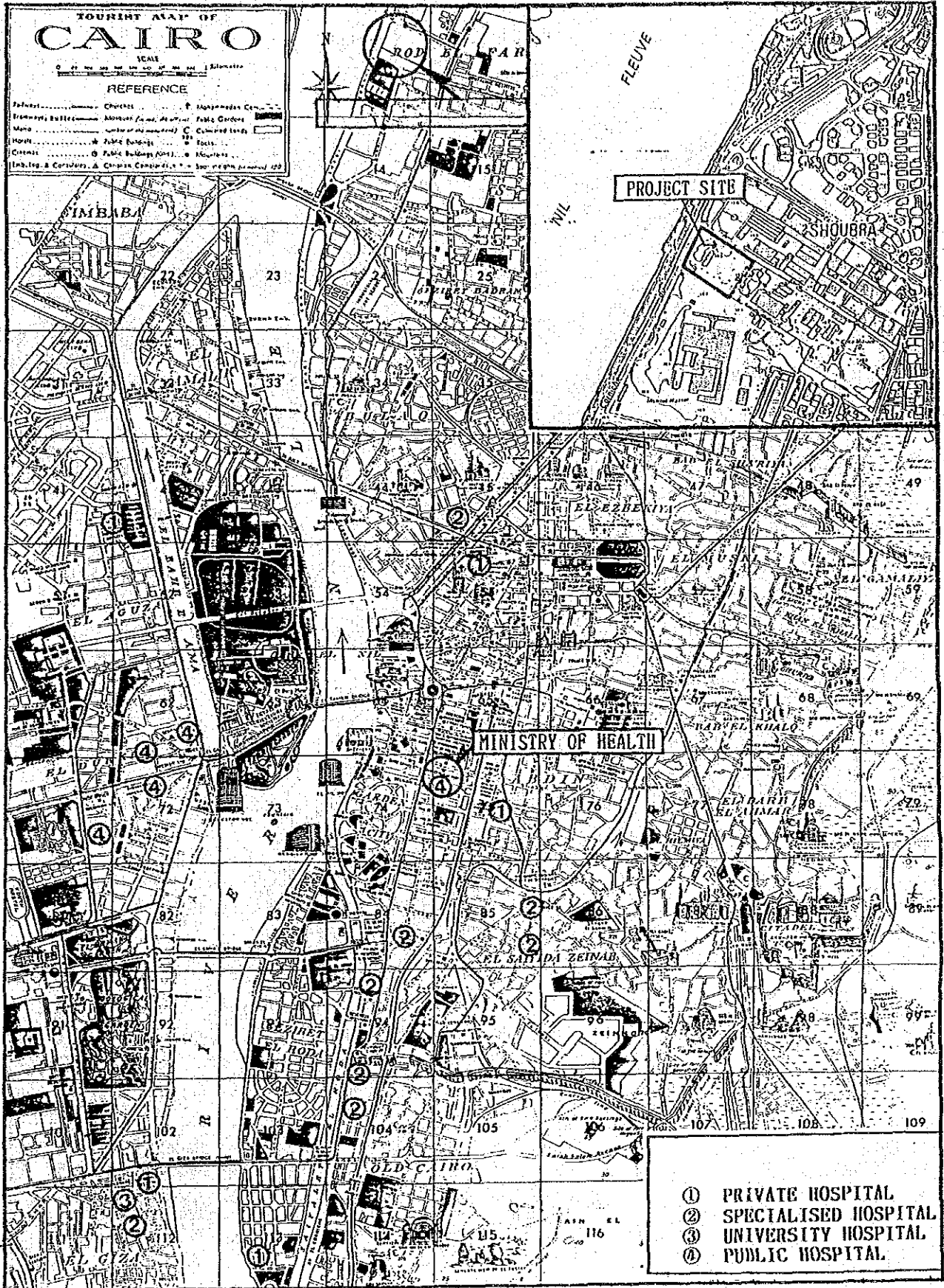
August, 1988



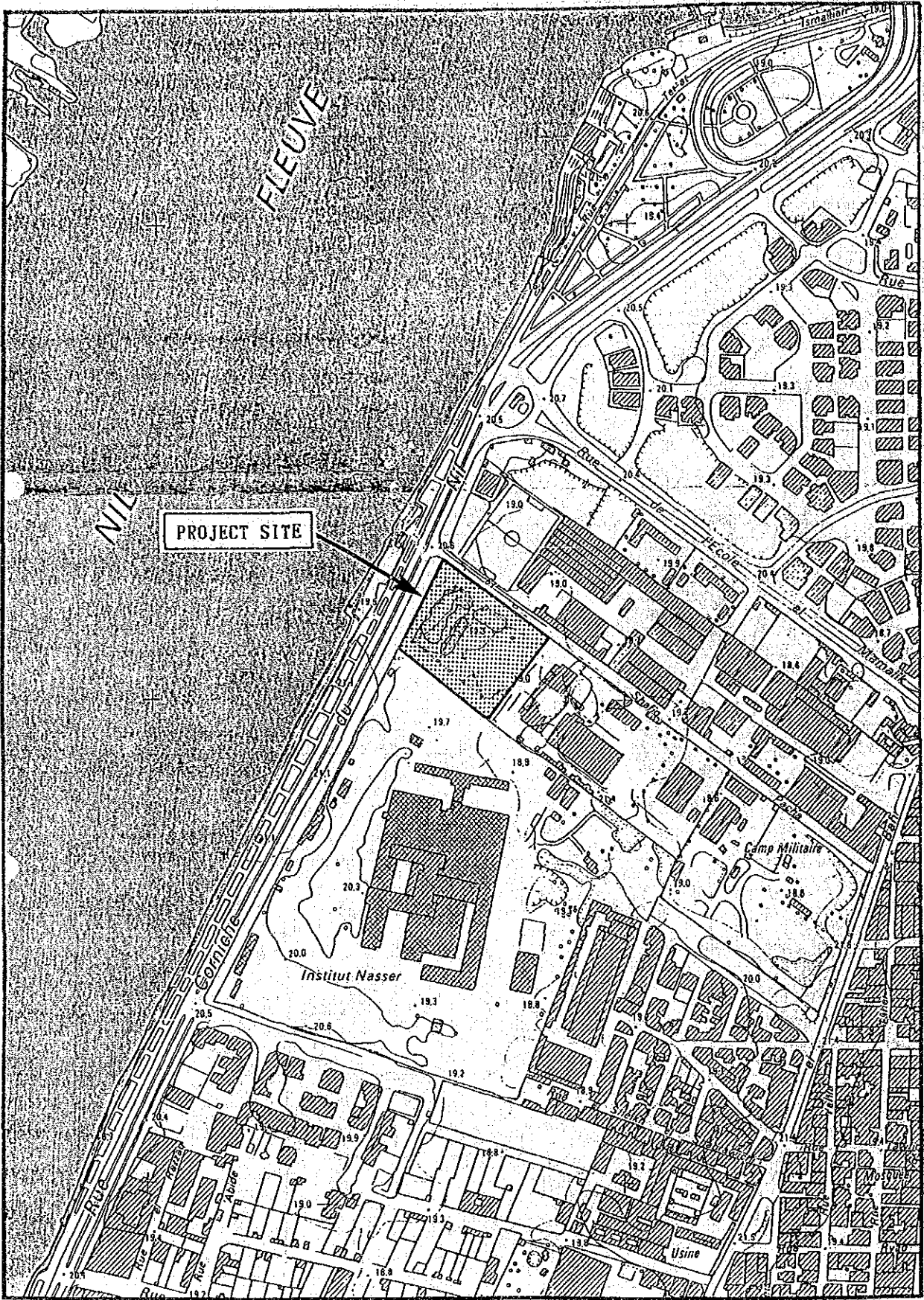
Kensuke Yanagiya
President
Japan International Cooperation Agency

TOURIST MAP OF CAIRO

SCALE
0 25 50 100 150 200 250 300 350 400 450 500 550 600 650 700 750 800 850 900 950 1000
REFERENCE
Palaces Churches Mosques
Tombstones Monuments Public Gardens
Mansions Public Buildings Parks
Cemeteries Public Buildings Hospitals
Theatres & Concerts Cinema Theatres Sports grounds



- ① PRIVATE HOSPITAL
- ② SPECIALISED HOSPITAL
- ③ UNIVERSITY HOSPITAL
- ④ PUBLIC HOSPITAL



SUMMARY

SUMMARY

Today, there are 4,500 drug items amounting to an annual value of approximately 600 million pounds (about 35 billion yen) being consumed in Egypt. Among the 4,500 drug items, 4,000 items or 85% of the total value is produced locally by drug producers of public sector and private sector. The remaining 500 items are imported. The consumption and supply of drugs are steadily increasing with the extension of the country's health and medical care service and the development of the pharmaceutical industry.

With the purpose of supplying high quality drugs at low price to protect the health of the Egyptian people, the Government of Egypt plans to improve and extend pharmaceutical production facility and storage and distribution facility under the Second Five Year Plan (1987/88 - 1991/92).

The Egyptian Pharmaceutical Trading Company (EPTC), a corporation under the Ministry of Health, supplies 90% of imported drugs and 50% of local drugs or a total of 64% of the drugs supplied in Egypt. Therefore, EPTC is the largest drug distributor in the Arab Republic of Egypt and plays a very important role in the supply of drugs in Egypt. Since drugs are concerned with human life, keeping a high quality and a stable supply is the most important responsibility of EPTC.

EPTC operates one main warehouse, at Shoubra, Cairo; three provincial warehouses, one each at Alexandria, Mansoura and Assiut and forty-two intermediate warehouses. However, in view of the yearly increasing demand of drugs, the facilities are insufficient both in quantity and in quality. Furthermore, owing to unsatisfactory storage and distribution system, the loss of drugs due to quality deterioration, breakage and

effective date expiry is large. Shortage of stock and excessive stock owing to unsatisfactory inventory control is also a problem. In view of such condition a solution to these problems is urgently required.

Especially, since the extension and rehabilitation of the main warehouse of Shoubra in Cairo, the main storage and distribution system operated by EPTC, is of urgent importance, the construction of a drug storage and distribution system incorporating the most suitable facilities within the Shoubra main warehouse site together with the establishment of modern storage, distribution and inventory control system was planned by the Government of Egypt.

In order to implement this project, the Government of Egypt requested a grant aid of the Government of Japan. In response to this request, the Government of Japan decided to conduct a basic design study on the extension and rehabilitation of the Shoubra Main Warehouse, and the Japan International Cooperation Agency, JICA, sent a basic design study team to Egypt from March 26 to April 24, 1988.

During this period, the team discussed the contents of the request with officials of the Government of Egypt, surveyed the proposed construction site and construction condition as well as collecting information related to the project.

After returning to Japan, the team prepared a basic design consisting of facility plan, equipment and material plan, and maintenance and operation plan.

The purpose of the project is to improve the health of the Egyptian people by constructing a drug storage and distribution center within the Shoubra main warehouse site,

rationalizing the function of existing warehouse, and improving storage, inventory control, distribution system especially from the viewpoint of supplying a high quality drug.

An outline of the project is shown below.

(1) Executing Agency

Egyptian Pharmaceutical Trading Company

(2) Project site

1353 Kournish El Nile Street Shoubra, Cairo

(3) Outline of facility

Sector	Room	Function
Drugs warehouse 11,421 m ²	Drugs store	Storage and management of drugs
	Restricted and essential drugs store	Strict management of drugs such as neurosis drugs
	Cooled store	Storage and management of drugs required to be cooled
	Hazardous drugs store	Storage and management of inflammable drugs
	Sorting room	Sorting incoming/outgoing drugs
	Truck berth	Unloading and loading drugs
	Truck parking lot	Parking of delivery trucks
	Site office	Management of incoming/outgoing drugs
Office administration department 1,038 m ²	Administration offices	Offices for director, manager and administration
	General offices	Office work related to wholesale of drugs including general affairs, finance and accounting
	Computer room	Processing incoming/outgoing data of drugs

(4) Equipment and material

Equipment and material	Description
Transporting equipment	Refrigerator truck, fork-lift, roller conveyor, wooden pallets
Office management equipment	Personal computer, copy machine, overhead projector
Others	Wood working tools

The construction schedule for this project is estimated as 17 months; for the first stage covering conclusion of consultant contract, detailed design, tender document preparation and tendering 5 months, while the completion and handover is estimated as 12 months after signing of construction contract.

The executing agency of the Government of Egypt is EPTC which is under the jurisdiction of the Ministry of Health. EPTC is the responsible agency during construction as well as maintenance and operation of the project after completion. Since EPTC operates over 40 storage and distribution facilities, there should be no problem in the capability of EPTC to maintain and operate the new storage and distribution centre.

The implementation of this project will contribute to upgrading the health service in Egypt by expanding the Shoubra main warehouse, establishing quality control of drugs in accordance with GSP, efficient distribution of drugs, and efficient inventory control of drugs. This will reduce losses of drugs, provide stable and constant supply of drugs, and increase reliability of drugs, thus contributing to upgrade the health service of the Arab Republic of Egypt.

In order to operate this project smoothly, EPTC must implement the following measures.

- ① With the construction of the new storage and distribution centre, the existing Shoubra main warehouse should be repaired and modified to fulfill the function of one complete main warehouse.
- ② With the increase of storage capacity at the main warehouse, the burden of provincial and intermediate warehouses is eased, so an efficient distribution network should be set up by having provincial and intermediate warehouses to function as drug distribution facilities.
- ③ With the introduction of new equipment such as personal computer and forklift, secure and train suitable personnel.

This project is considered to be suitable for Grant Aid, but in order to implement the project smoothly, it is desired that the responsibility and function among the different agencies concerned within the Government of Egypt be clearly defined at an early stage.

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ABBREVIATION

CAPMAS	Central Agency for Public Mobilization and Statistics
EPTC	Egyptian Pharmaceutical Trading Company
GMP	Good Manufacturing Practice
GOD	General Organization for Pharmaceuticals, Chemicals and Medical Appliances
GSP	Good Supplying Practice
IMS	Medical Statistics International
MOH	Ministry of Health
MPIC	Ministry of Planning and International Cooperation
UNFPA	UN Fund for Population Activities
UNIDO	United Nations Industrial Development Organization
USAID	US Agency for International Development

CHAPTER 1 INTRODUCTION

CHAPTER 1 INTRODUCTION

In Egypt, the majority of drugs supply is handled by the Egyptian Pharmaceutical Trading Company, EPTC, an organization under the jurisdiction of the Ministry of Health. It handles 64 percent of the drugs sold in Egypt.

EPTC operates two main warehouses, one at Shoubra, Cairo and one at Tenth of Ramadan (under construction); three provincial warehouses one each at Alexandria, Mansoura and Assiut; forty-two provincial warehouses and twenty-six pharmacies for supplying drugs throughout Egypt.

However, EPTC is presently faced with the following mandates to be achieved.

- (i) Provide a supply for the yearly increasing demand of drugs.
- (ii) Improve quality control and inventory control of drugs.
- (iii) Improve efficiency of drugs distribution.

Therefore, in order to improve and strengthen the drug supply system, the Government of Egypt planned the "Construction of Drugs Storage and Distribution Centre" including expansion of the Shoubra main warehouse which is the centre of the drugs storage and distribution of EPTC. For implementing this plan, the Government of Egypt requested the grant aid of the Government of Japan.

In response to this request, the Government of Japan decided to conduct a basic design study on the "Construction of a Drugs Storage and Distribution Centre" and sent a basic

design study team headed by Mr. Akira Kawahara, Deputy Director of First Evaluation and Registration Division, Pharmaceutical Affairs Bureau, Ministry of Health and Welfare.

The study team conducted a survey in Egypt for 30 days from March 26 to April 24, 1988. During this period, the team discussed with officials of the government as well as those of EPTC and confirmed the contents of the request, necessary equipment and materials, and the proposed construction site.

After returning to Japan, the team reviewed whether the project was appropriate for grant aid and formulated the facility plan, equipment and material plan, maintenance and operation plan and estimated the cost. The results of the study was completed into a "Draft Report of Basic Design Study", and a team headed by Mr. Kazushi Endoh, Expert of Pharmaceutical Affairs, Inspection and Guidance Division, Pharmaceutical Affairs Bureau, Ministry of Health and Welfare was sent to Egypt for 10 days from August 1 to August 10, 1988 to submit and explain the draft report.

This basic design study report was compiled on the basis of the above survey and discussions.

CHAPTER 2 BACKGROUND OF PROJECT

CHAPTER 2 BACKGROUND OF PROJECT

2.1 HEALTH AND MEDICAL CONDITION IN EGYPT

2.1.1 Health and Population

The population of Egypt was roughly 49.6 million in 1986 and the area of Egypt is roughly 1 million km². However, since 97% of the land is desert, the majority of the population lives in the Nile delta or along the banks of the Nile river. Also the concentration of population in cities is quite high.

The annual average population growth rate from 1976 to 1986 was 2.8%, and according to the "World Development Report of 1986" published by the World Bank, population is expected to reach 65 to 70 million in the year 2000 (Table 2-1). The population density is 46 people/km², but city population density excluding desert area would be 1,353 people/km² resulting from 43.9% of the population being concentrated in cities (Table 2-2).

Table 2-1 Table of Population 1976-1986

Year	Population (1,000)	Birth		Death		Natural growth	
		1,000	per 1,000	1,000	per 1,000	1,000	per 1,000
1976	37,858	1,384	36.6	445	11.8	939	24.8
1977	38,794	1,455	37.5	459	11.8	996	25.7
1978	39,767	1,487	37.4	417	10.5	1,070	26.9
1979	40,889	1,642	40.2	446	10.9	1,196	29.2
1980	42,126	1,580	37.5	423	10.0	1,157	27.5
1981	43,314	1,604	37.0	434	10.0	1,170	27.0
1982	44,525	1,612	36.2	444	10.0	1,168	26.2
1983*	45,755	1,723	37.7	457	10.0	1,266	27.7
1984*	47,191	1,820	38.6	444	9.4	1,376	29.2
1985*	48,503	1,817	37.5	442	9.1	1,375	28.3
1986*	49,609	1,950	39.3	433	9.7	1,517	30.6

* Estimate

Source: CAPMAS Statistical Year Book 1987

Table 2-2 Population Distribution, Density and City Population Ratio

	Area	Population		Density	City population	
	(km ²)	1,000	(%)	person/ km ²	State ratio	Normal ratio
4 Mediterranean states	907.7	9,697	20.1	10,683	100.0	45.8
Cairo	214.2	6,053	12.0	28,258	100.0	28.6
Alexandria	¹⁾ 314.4	2,917	5.8	9,279	100.0	13.8
Port Said	72.1	400	0.8	5,545	100.0	1.9
Suez	²⁾ 307.0	327	0.6	1,065	100.0	1.5
Upper Egypt 9 states	22,180.8	20,876	43.3	941	27.6	27.2
Damiat	589.2	741	1.4	1,258	25.2	0.9
Ismailia	1,441.6	544	1.1	378	48.9	1.3
Dakahlya	3,470.9	3,500	6.9	1,009	26.2	4.3
Sharkeya	4,179.5	3,420	6.8	818	21.1	3.4
Kalubeya	1,001.1	2,514	5.0	2,512	43.7	5.2
Menoufia	1,532.1	2,227	4.4	1,454	20.1	2.1
Garbya	1,942.2	2,871	5.7	1,478	32.7	4.4
Kafr El Sheikh	3,437.1	1,800	3.6	524	22.8	1.9
Behera	³⁾ 4,587.5	3,257	6.5	710	23.5	3.6
Lower Egypt 8 states	12,098.0	17,067	35.4	1,411	31.6	25.5
Giza	⁴⁾ 1,058.0	3,700	7.3	3,497	57.5	10.0
Fayoum	1,827.2	1,544	3.1	845	23.3	1.7
Beni-Suef	1,321.7	1,443	2.9	1,092	25.1	1.7
Menya	2,261.7	2,648	5.3	1,171	20.7	2.6
Assiut	1,553.0	2,223	4.4	1,431	27.8	2.9
Sohag	1,547.2	2,455	4.9	1,587	21.9	2.5
Kena	1,850.7	2,252	4.5	1,217	23.3	2.5
Aswan	678.5	801	7.6	1,181	40.0	1.5

Table 2-2 Population Distribution, Density and City Population Ratio (continued)

	Area	Population		Density	City population	
	(km ²)	1,000	(%)	person/ km ²	State ratio	Normal ratio
Sina 5 states		565	1.2		57.5	1.5
New valley		114	0.2		43.8	0.2
Matrough		160	0.3		51.2	0.4
Red Sea		90	0.2		82.2	0.3
North Sina		171	0.3		62.0	0.5
South Sina		29	0.1		44.8	0.1
	35,186.5	48,205	100.0	⁵⁾ 1,353	43.9	100.0
	998,774.0					

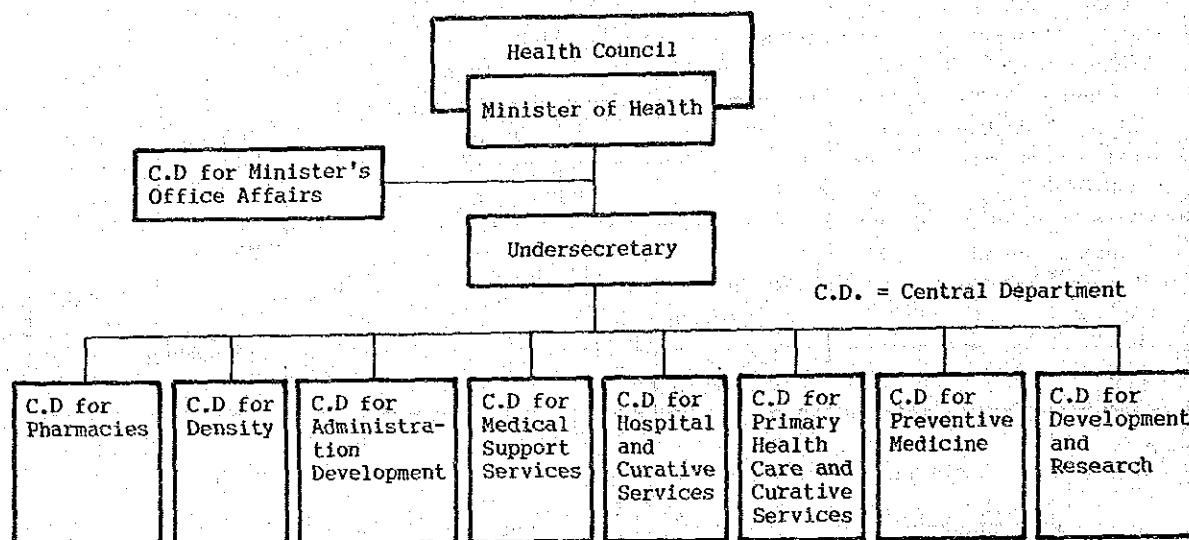
- Notes: 1) Excludes Kism El-Amerria of 4,000 km² which is mostly desert.
 2) Excludes Kism Atake of 17,533 km² which is mostly desert.
 3) Excludes Wadi-El-Natroan of 5,542 km² which is mostly desert.
 4) Excludes El-Baharria Oasis of 84,095 km² which is mostly desert.
 5) Density of population excluding 5 isolated states with a total area of 850,000 km².

Source: CAPMAS Population Housing and Establishment Census 1986 Preliminary Results

2.1.2 Health and Medical Administration

The organization of the Ministry of Health which administer health and medical matters in Egypt is shown in Fig. 2-1 and its budget in Table 2-3.

There are 8 central departments under the Minister of Health and the Undersecretary, while the Central Department for Pharmacies is responsible for administrating pharmaceutical matters. The 1985/86 budget of the Ministry of Health was 402 million pounds which was 2.5% of the national budget.



Source: MOH, Golden Book of the Ministry of Health 1936-1986

Fig. 2-1 Organization of Ministry of Health

Table 2-3 Budget of Ministry of Health (1980-1985/86)

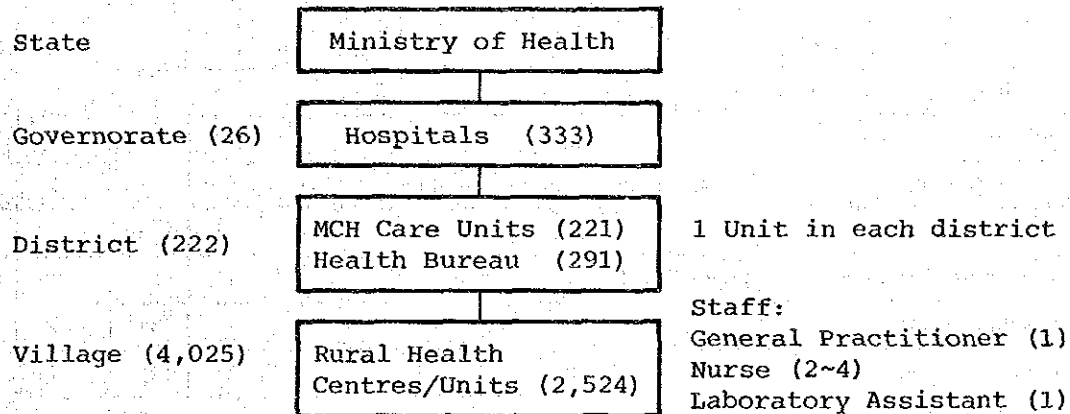
	Salaries & Wages (%)		Necessities (%)		Investment (%)		Capital Transfer (%)		MOH Budget	Percentage of National Budget (%)
1980	107,487,000	59.9	42,281,000	23.5	29,235,000	16.3	459,000	0.3	179,462,000	2.5
1983/84	209,873,000	63.0	77,939,398	23.4	44,740,000	13.3	550,000	0.2	333,102,397	2.5
1984/85	251,016,010	67.0	78,910,733	21.1	44,000,000	11.7	550,000	0.2	374,476,743	2.5
1985/86	271,194,800	67.4	81,681,459	20.3	49,150,000	12.2	550,000	0.1	402,576,259	2.5

Source: MOH, Golden Book of the Ministry of Health 1936-1986, 1986.

2.1.3 Outline of Health and Medical Condition

(1) Health and Medical System

The health and medical services of the Ministry of Health is provided in the following 3 stages.



Source: UNFPA

Aside from the Ministry of Health, there are a number of facilities such as hospitals attached to universities, public and private companies, private hospitals, and clinics which provide considerable health and medical services.

(2) Medical Facilities

The medical facilities operated by the Ministry of Health are shown in Table 2-4 and the number of beds from 1970 to 1985 in Table 2-5.

Even though the number of beds increased from 72,071 beds in 1970 to 92,700 beds in 1985, the beds per 1,000 persons decreased from 2.2 beds in 1970 to 1.9 beds in 1985 which shows that beds are not increasing in line with the growth of population.

Table 2-4 Medical Facilities Operated by Ministry of Health

(July 1, 1985)

Facility	Number			
	Without beds	With beds	Total	Number of beds
General and District Hospitals	2	181	183	24,275
Obstetric and Pediatric Hospitals	-	4	4	384
Polyclinics	17	-	17	-
District Clinics	124	-	124	-
Chest Disease Hospitals	-	34	34	7,046
Chest Disease Sections in General Hospitals	-	1	1	84
Chest Dispensaries	64	21	85	417
Mass Radiography Examination Units (Stationary, Mobile)	58	-	58	-
Psychiatric Units	1	8	9	6,515
Psychiatric Sections in General Hospitals	11	14	25	174
Eye Disease Units	6	31	37	1,546
Eye Disease Sections in General Hospitals	13	129	142	1,429
Infectious Disease Hospitals	-	79	79	7,170
Infectious Disease Sections in General Hospitals	-	11	11	192
Endemic Disease Hospitals	19	5	24	83
Endemic Disease Sections in General Hospitals	48	90	138	744
School Health Hospitals and Polyclinics	76	6	82	631
School Health Units	212	-	212	-
Leprosy Hospitals and Clinics	16	3	19	1,370
Leprosy Sections in General & District Hospitals	46	-	46	-
Skin Disease Hospitals and Clinics	16	1	17	86
Skin Disease Sections in General Hospitals	50	7	57	39
Maternity and Child Health Centres	24	221	245	430
Urban Health Centres	101	-	101	-
Rural Health Centres and Units	2,013	528	2,541	7,465
Rural Health Hospitals	-	55	55	1,522
Dental Units	1,332	-	1,332	-
Cancer Institute	-	1	1	79
Quarantine Centres	12	7	19	208
Health Bureaus	377	-	377	-
Teaching Hospitals	1	7	8	2,992
Treating Institutions	4	6	10	596

Source: MOH, Golden Book of the Ministry of Health 1936-1986.

Table 2-5 Number of Beds per 1,000 Persons

	Population (1,000)	Ministry of Health		Total	
		Number of beds	Beds per 1,000 persons	Number of beds	Beds per 1,000 persons
1970	33,069	52,675	1.6	72,071	2.2
1975	36,997	55,843	1.5	78,927	2.1
1980	42,289	59,305	1.4	74,163	2.0
1985	48,575	58,961	1.2	92,700	1.9

Source: MOH Golden Book of the Ministry of Health 1936-1986, 1986.

(4) Health Manpower

A list of medical personnel is shown in Table 2-6. According to this table, there are 76,269 physicians and 23,116 pharmacists. For reference, number of MOH medical personnel is shown in Table 2-7.

Table 2-6 Number of Main Medical Personnels

Type	Number
Physicians	76,296
Pharmacists	23,116
Nurses	51,326
Dentists	10,376

Source: MOH Golden Book of the Ministry of Health 1936-1986, 1986.

Table 2-7 Number of MOH Medical Personnels for Different Governorate (Dec. 1986)

Governorate	PHC Physicians	Other Physicians	Total MOH Physicians	Nurse Supervisor	Other Nurses	Asst. Nurses	Health Visitor	Assit. Nurse Midwife	Total
1. Cairo	332	2,998	3,330	8	2,889	478	793	491	4,659
2. Alexandria	85	1,536	1,621	138	1,423	139	19	200	1,919
3. Port Said	16	238	254	8	715	51	24	65	863
4. Suez	11	272	283	1	274	13	32	16	336
5. Ismailia	73	138	211	2	695	55	18	111	881
6. Damiat	38	306	344	3	673	20	105	117	918
7. Dakahlya	50	1,833	1,883	7	1,611	313	343	607	2,881
8. Sharkeya	12	975	987	2	1,704	122	461	354	2,643
9. Kalubeya	110	638	748	2	1,607	78	203	225	2,115
10. Kafr El Sheikh	4	699	703	3	1,489	22	73	89	1,676
11. Gharbya	41	1,082	1,123	8	1,248	251	-	471	1,978
12. Menoufia	52	471	523	3	1,255	152	10	275	1,695
13. Behera	20	1,217	1,237	27	2,588	47	10	134	2,806
14. Giza	39	1,316	1,355	6	1,235	190	359	185	1,975
15. Beni-Suef	31	408	439	-	979	249	-	321	1,549
16. Fayoum	23	375	398	5	963	168	26	204	1,366
17. Menya	28	672	700	-	940	221	107	448	1,716
18. Assiut	5	1,453	1,458	1	1,026	84	520	217	1,848
19. Sohag	29	687	716	1	396	95	87	173	752
20. Kena	60	541	601	-	493	23	14	85	615
21. Aswan	10	253	263	-	218	17	15	61	311
22. Matrouh	-	72	72	1	98	13	-	7	119
23. Wady Gedeed	-	46	46	-	-	-	-	-	111
24. Banr Ahnar	3	41	44	-	111	-	-	-	-
25. North Sina	-	86	86	-	109	14	-	4	127
26. South Sina	-	24	24	-	96	2	15	20	133
27. New Valley	-	-	-	-	-	-	-	-	-
28. Red Sea	-	-	-	-	-	-	-	-	-
Total	1,072	18,377	19,449	226	24,835	2,817	3,234	4,880	35,992

Source: USAID

2.1.4 Outline of National Health Programme

(1) Health Sector

The major programs promoted in the health sector under the second 5 year economic development plan (1988/88-1991/92) are listed below.

- ① Emphasizing the importance of such services to economic and social development.
- ② Giving these services a strong drive in order to secure preventive and curative services at a reasonable level of efficiency.
- ③ Giving support to activities related to the production of pharmaceuticals so that it may face the increasing local demand for medicine.
- ④ Expanding preventive campaigns, in order to avoid the spreading of epidemics and contagious diseases through early discovery and taking precautions necessary to stop their spreading.
- ⑤ Providing basic health services and raising their efficiency as they are fundamental in preserving the health of citizens. This includes comprehensive maternity and infant care, school health services, as well as establishing health services in urban centres and rural regions.
- ⑥ Completing, renewing and replacing public and central hospitals.

- ⑦ Continuing the propagation of the health insurance plans and giving attention to the improvement of service efficiency.
- ⑧ Creating enough job opportunities for graduates from colleges and institutes which operate in the preparation of different types of labour required for health services, whether they be doctors, technicians, or nurses.

An extension program of medical facilities and personnel under the administration of the Ministry of Health is given in Table 2-8.

In order to achieve this target, the Government of Egypt plans to invest 651 million pounds in the coming 5 year period as shown in Table 2-9.

Table 2-8 Present Medical Service Condition and Target for the Second 5 Year Plan

	1985 ¹⁾	1986/87 ²⁾	1987/88 ²⁾	1991/92 ²⁾
Total number of beds	92,700	96,700	99,400	115,700
General hospital	183	190	194	206
Number of beds	24,275	26,200	28,000	33,800
MCH care units	2,013	2,082	2,102	2,182
Rural health units	55	78	85	113
Number of beds	1,522	2,020	2,160	2,720
Doctors	76,296	77,300	81,100	101,500
Pharmacists	23,116	24,000	26,100	34,700
Nurses	51,326	78,000	82,000	98,500
Dentists	10,376	10,500	11,300	15,150

Source: 1) MOH Golden Book of the Ministry of Health 1936-1986, 1986.
2) MPIC, Second 5 Year Development Plan, Vol. II.

Table 2-9 Budget of Ministry of Health for the Second 5 Year Plan (1987/88-1991/92) and Its First Year (1987/88)

Budget of Ministry of Health

Budget	5 Years	87/88
Tangible assets		
Land procurement	1,800	0
Land preparation	0	0
Residential buildings	0	0
Non-residential buildings	241,980	66,530
Structures	0	0
Machinery/equipment	195,193	28,028
Tools	47,591	7,075
Vehicles (cargo)	32,025	6,350
Vehicles (persons)	3,115	605
Furniture/office supplies	72,265	18,090
Water/animal resource	80	50
Total	594,049	126,728
Deferred funds		
Facilities	0	0
Office expense - salary	16,330	4,920
- supply & material	38,943	9,702
Research expense	250	95
Technical documents	0	0
Interest	2,278	2,128
Campaign, advertising expense	0	0
Total	57,801	16,845
Total investment	651,850	143,573
Investment		
Advance payment	0	0
Securities	0	0
Total	0	0
Total	651,850	143,573

Source: MPIC Second 5 Year Development Plan, Vol.III.

(2) Drugs Supply Sector

In the second 5 year plan, the local supply of drugs is planned to be increased to supply 86% of the total consumption in 1991/92 by promoting the growth and the development of local industry. Thereby, reducing import of drugs and exporting 5% of locally produced drugs.

For this purpose, 3 manufacturers are expected to start production in 1988, while 8 public sector corporations, 3 private corporations, including 1 packaging company, and 3 joint venture corporations, totalling 14 corporations are expected to newly enter production by 1991/92.

During this 5 year period, a public investment of 97,875,000 Egyptian pound is budgeted for this sector, and is planned to be invested in the following projects.

- ① 41% of the above budget is planned for investment in renewing and replacing existing drugs production and storage facilities.
- ② 35% for investment in modernizing and expanding drugs production facilities established under the first 5 year plan.
- ③ 24% for investment in constructing new projects, distribution and storage facilities to assure supply and delivery of drugs throughout Egypt.

The construction program and budget schedule of EPTC is shown respectively in Table 2-10 and Table 2-11. EPTC has listed the following items which is estimated to total 14,500,000 Egyptian pounds.

Item	Budget Egyptian pound
Facility construction	
Shoubra main warehouse (10,000 m ²)	6,750,000
Ten intermediate warehouses (15,800 m ²)	
Rehabilitation of existing warehouse	3,500,000
Vehicles	2,500,000
Furniture and fixture	1,600,000
Equipment and spare parts	150,000
Total	14,500,000

Since this program is restricted by the budget, priority is assigned and the projects are implemented according to their urgency and necessity. The expansion of the Shoubra main warehouse and the construction of intermediate warehouses which have been assigned top priority are estimated to cost 6,750,000 Egyptian pounds or 47% of the total budget.

In order to supply drugs stably, EPTC plans to first set up intermediate warehouse in the 5 governorates among the 26 governorates which do not have intermediate warehouses and eventually to have at least 2 intermediate warehouses in each governorate.

Table 2-10 EPTC Construction Program in the Second
5 Year Plan

Governorate	Name of existing Branch Warehouse	New Project in the Second 5 Year Plan
Menya	Menya	1,500 m ²
Assiut	Assiut	2,500 m ²
Sohag	Sohag New Sohag Old	
Kena	Kena	1,500 m ²
Aswan	Aswan	1,500 m ²
Menoufia	Shebin El Koum	1,500 m ²
Kafr El Sheikh	Kafr El Sheikh	
Garbya	Tanta Mehala	1,500 m ²
Sharkeya	Zakaziek	
Damiat	Damiat	
Dakahlyia	El Mansoura El Hosiania	
El Kaliopiah	Banha	
Cairo	Shoubra (main warehouse)	10,000 m ²
	Maadi	1,400 m ²
	Garden city	
	Towfikia	
	Heliopolis	
	El Hegaz	
	Zyton	
	El Horrya	
	Ghamra	
	Kasr El Einy	
	26 July	
	El Nasr	
	Sherif	
	El Tasurk El Markasi	
Strand		
El Tasnik El Takhassosi		
Giza	El Mohandessin Giza	1,400 m ²
Suez	Suez	
Port Said	Port Said	
Ismailia	Ismailia	

Table 2-10 EPTC Construction Program in the Second 5 Year Plan (Continued)

Governorate	Name of existing Branch Warehouse	New Project in the Second 5 Year Plan
Fayoum	Fayoum	
Beni Suef	Beni Suef	1,500 m ²
Alexandria	Tawaen Bab Shark El Eskandarany El Attarin El Raml	1,500 m ²
Behera	Damanhur	
Marsa Matrough	—	
Wady Gedeed	—	
Bahr Ahnar	—	
Shamal Sina	—	
Ganrib Sina	—	
26 Governorates	42 Branch warehouses	1 Main warehouse 10 Branch warehouse 10,000 m ² 15,800 m ²

Source: EPTC

Table 2-11 EPTC Budget in the Second 5 Year Plan
(The value by Thousand EP.)

Project	Construc- tions	Vehicles	Furniture & Cap.Equip	Instruments & Spare Parts	Total
First Priority:-					
Completion of the Central & Inter- mediate Warehouses	5,535	865	525	85	7,010
Replacement & Development of the Intermediate Warehouses	2,675	325	300	50	3,350
Second Priority:-					
Completion of the Central & Inter- mediate Warehouses	1,215	135	150	—	1,500
Replacement & Development of the Intermediate Warehouses	825	1,175	625	15	2,640
Total	10,250	2,500	1,600	150	14,500

Source: EPTC

2.2 PHARMACEUTICAL SUPPLY IN EGYPT

2.2.1 Drugs Statistics

There are roughly 4,500 different drugs (by brand name) marketed in Egypt, and when broken down into packages, this number would be more than 6,000 (source, Egyptian Index of Medical Specialities, Sixth Edition 1986-87).

About 4,000 drugs, excluding 462 imported drugs are produced locally. Also among these 4,000 drugs, 70% or 2,800 drugs are produced under license by local manufacturers (public sector, private companies, joint ventures) and sold under the trade name of foreign pharmaceutical companies.

The wholesale value of drugs consumed in Egypt in 1986 was roughly 556 million Egyptian pounds (retail value E659 million) which would be about 13 Egyptian pounds per capita.

The market share between local and imported drugs is shown in Table 2-12. In 1987, the share was 84.7% or 513,388,000 Egyptian pounds for local drugs and 15.3% or 92,837,000 Egyptian pounds for imported drugs. But since imports are calculated at the preferential exchange rate which is about $1/4 \sim 1/3$ of the market exchange rate, the market share is much larger, and when adjusted for this exchange difference, the share would be 65% for local drugs and 35% for imported drugs.

Table 2-12 Egypt Annual Sales & Market Shares of
Pharmaceutical Products: Imported vs
Local, Latest 5 Years

(1,000 Egyptian pounds)

	1983		1984		1985		1986		1987	
	LC*	%	LC	%	LC	%	LC	%	LC	%
Local	306,205	82.4	391,423	82.3	404,638	81.2	466,634	83.8	513,388	84.4
Imported	65,298	17.6	84,253	17.7	93,530	18.8	90,321	16.2	92,837	15.3
Egypt	371,503	100.0	475,676	100.0	498,168	100.0	556,955	100.0	606,225	100.0

*: LC = Local currency

Source: IMS International

2.2.2 Production and Import Agencies

In Egypt, drugs are fairly well controlled by the government, which controls both import and production through the General Organization for Pharmaceuticals, Chemicals and Medical Appliances, an agency of the Ministry of Health.

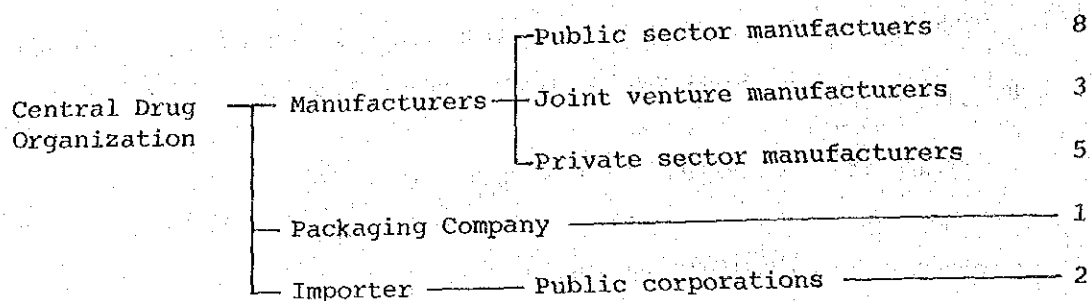
Only a small number of countries possess the necessary attributes and conditions conducive to the establishment and growth of a viable major pharmaceutical industry. These include the existence of a substantial chemical industry, skilled personnel, a threshold level of highly qualified professional scientists and managers, large markets (whether domestic or export), access to efficient technology, and an ability to organize, finance and maintain a substantial R&D activity efficiently.

Five stages of pharmaceutical production have been identified by UNIDO. The table on the next page shows the classification of developing countries according to the stage of pharmaceutical development they have attained. Broadly speaking the groups can be categorized as follows:

- Group 1: No manufacture; dependent on importation of pharmaceuticals in finished form;
- Group 2: Beginning to repack formulated drugs and to process bulk drugs into dosage forms;
- Group 3: Formulating a broad range of bulk drugs into dosage forms and some simple bulk drugs from intermediates;
- Group 4: Manufacturing a broad range of bulk drugs from intermediates as well as some intermediates using locally produced raw materials;
- Group 5: Manufacturing most intermediates required; undertaking local research on the development of innovative products and manufacturing processes.

Egypt together with Brazil, China, India and East European countries is classified in the fifth stage. Local drugs are available for most sickness, but drugs for treating important health problems such as diabetes and schistosomiasis must still be imported. Furthermore, chemical raw materials, for locally produced drugs, as well as bulk drugs and intermediates for drugs produced locally under license must be imported. Since foreign exchange is limited, unstable supply of these products is a serious problem. Another problem is that although many drugs are produced, shipment of drugs to meet the trend of consumption still remains to be improved.

There are 16 drug manufacturers and 2 importers as shown in the following figure.



Note: Some other manufacturers are under construction.

(1) Manufacturers

(a) Public Sector Manufacturers

There are 8 public sector manufacturers as described below.

Manufacturers	No. of Products	Main Products
C.I.D. (Chemical Industries Development)	Own drugs 200	Antibiotics such as Ampicillin Ophthalmic preparation, Antitussives
	Licensed drugs 100	Bricanyl (Sweden, Astra) Buscopan, Persantin (W. Germany Boehringer Ingelheim)
A.D.C.O. (The Arab Drug)	Own drugs 130	Cephalexin (Antibiotics) Indomethacin (Antipyretics)
	Licensed drugs 100	Akineton (Swiss, Knoll)
Alexandria Pharmaceutical & Chemical Industries	Own drugs 150	Ampicillin Chloramphenicol (Antibiotics) Hypnotics
	Licensed drugs 60	Canesten (W. Germany, Bayer) Fladyl (France, Specia)

Manufacturers	No. of Products	Main Products
EL. NILE	Own drugs 220	Oral preparation, Ophthalmic preparation, Injection
	Licensed drugs 120	Deca-durabolin (Netherland Organnon) Ponstan (USA, Parke-Davis) Ovral (USA, Wyeth)
EL. KAHIRA	Own drugs 150	Aspirin, Antitussives, Agents for epidermis
	Licensed drugs 90	Erythrocin (USA, Abbott) Brufen (UK, Boots) Inderal (UK, ICI) Keflex (USA, Elli Lilly) Mintezol (USA, Merck) Aldactone (USA, Searle)
Memphis	Own drugs 170	Muscle relaxant, Antibiotics
	Licensed drugs 60	Dogmatyl (France, Delagrande) Polaramine (USA, Schering Plough) Dalacin (USA, Upjohn)
MISR	Own drugs 170	Antibiotics, Antitussives, Vitamins
	Licensed drugs 30	Solcoseryl (Swiss, Solco Basel) Naprosyn (USA, Syntex)
EL. NASR	Own drugs 50	Few pharmaceutical drugs, but is the only producer of intermediate drugs.
	Licensed drugs 3	Chloramphenicol (Antibiotics) Aspirin (Antipyretics analgesics) Rifampicin (Antibiotics, Anti-tuberculosis, Antireprosy) Ampicillin (Antibiotics)

(b) Joint Venture Companies

Today, there are 3 joint venture companies as described below. However, in view of the country's policy to promote the production of drugs (Investment Law, etc. are already enacted), it is expected that the number of joint venture companies will increase along with the increase of private companies and within 2 years, 4-5 new joint venture production plants are expected to commence production.

Manufacturers	No. of Products	Main Products
Hoechst-Orient (Joint venture with Hoechst, W. Germany)	80	Claforan, Daonil, Intenzain, Lasix Segontin, Trental, Methoformine (Oral antidiabetic agent) raw material production
Pfizer-Egypt (Joint venture with Pfizer, USA)	120	Cefovid, Conbantorin, Feldene Minipress, Unacin, Terramycin Vibramycin
Swiss-Pharma (Joint venture with Swiss Multinationals Ciba, Sandoz and Wander)	150	Ciba: Serpasil, Tegretol, Rimactane Slow-K, Voltaren Sandoz: Hydergine, Melleril Tavegyl, Zaditen Wander: Hygroton

(c) Private Sector Manufacturers

There are five private sector manufacturers, and among the five, only Squibb Egypt, subsidiary of the USA multinational pharmaceutical company Squibbs, is a large producer.

EIPICO, an Egyptian company in which EPTC holds a part of its equity shares, is a medium sized producer in Egypt. The other three producers are all small producers, but due to the recent government promotion of increasing locally produced drugs, European and USA drugs manufacturers are considering to set up plants in Egypt which should increase the number of producers in the private sector. An outline of the companies are described below.

Manufacturers	No. of Products	Main Products
ABI (Advanced Biochemical Industries Pharmaceutical Co.)	Own drugs 30	Vitamins, Antitussives
Amriya	Licensed drugs 30	Rhonal (France, Specia) Joint venture plant being constructed with Rhone Poulenc
EIPICO (Egyptian International Pharmaceutical Industries Co.)	Own drugs (40)	Own drugs: Oral preparation Suppository, Injection Ointment
	Licensed drugs (60)	Licensed drugs: Decadron, Timoptol (USA, Merck) Sol-cortef (USA, Upjohn)
Squibb-Egypt	60	Kenacort, Fungizone, Mycostatin Velosef
Pharco Pharmaceuticals	20	Infantile preparations, Vitamins

(d) Packaging companies

Pharmaceutical Packages Production Company is the only drug packaging company in Egypt.

Some drugs are contained in packages inappropriate to protect the contents. Syrup medicines are observed to be packed in packages for food. Furthermore, since cartons are not sufficiently strong, it is easily damaged if not handled and stored with care.

(e) Importers

Owing to the foreign exchange control policy (drugs receive preferential rate for foreign exchange quota) in Egypt, import is actually performed by two government affiliated public corporations, which are described below. EPTC, one of the two corporations, is the largest drugs distributor in the country and it is the responsible organization for this project.

(i) The Egyptian Pharmaceutical Trading Company (EPTC)

EPTC is the largest drugs importer in Egypt handling 90% of the drugs imported into Egypt. Its activity is supervised by the General Organization for Pharmaceuticals, Chemicals and Medical Appliances of Egypt which is an affiliated agency of the Ministry of Health. EPTC is also the largest drugs distributor in Egypt and its outline is described in detail in Section 2.3.3.

(ii) El Gomhoria Co.

The company is the exclusive importer of pharmaceutical raw materials and handles almost all raw materials and medical supplies consumed for the production of drugs by pharmaceutical manufacturers in Egypt. This company is also supervised by the General Organization of Pharmaceuticals, Chemicals and Medical Appliances.

2.2.3 Present Drugs Import in Egypt

At present, there are 462 drugs, produced by 83 foreign companies, being imported into Egypt mainly from Europe and the United States.

Owing to its critical foreign exchange condition, the Government of Egypt is promoting the local production of drugs and trying to reduce the number of imported drugs.

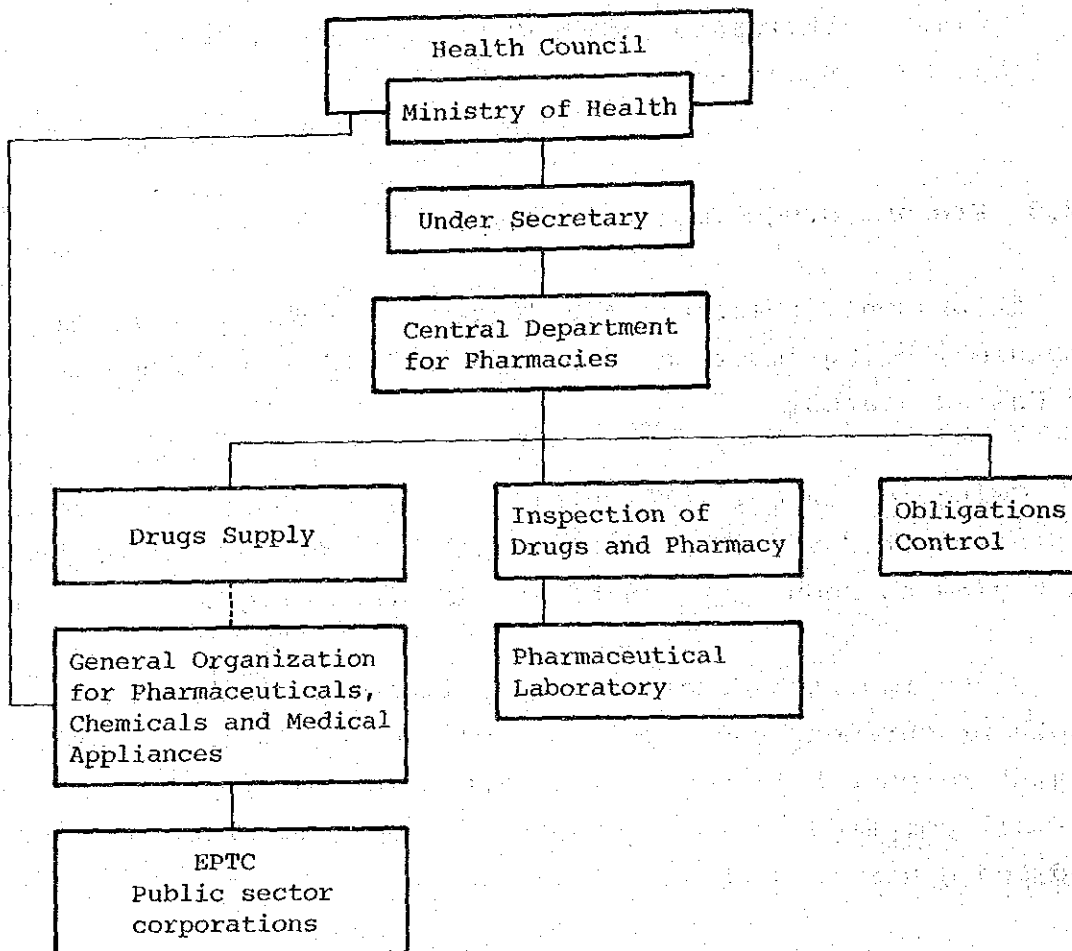
Since imported drugs are quite important in health, smooth procurement and supply of imported drugs is one of the largest responsibility of EPTC. The number of imported drugs is small compared to local drugs, but the unit price of most imported drugs is high.

The imported drugs are to be approved by the High Committee of Drugs, established within the General Organization for Pharmaceuticals, Chemicals and Medical Appliances (GOD) and assigned a rank of priority (A_1 , A_2 , B_1 , B_2). Foreign exchange allocation (1\$ = LE0.7, which is 3 times more favorable than the market rate) is based on this priority ranking.

2.2.4 Pharmaceutical Administration, Organization and Regulations

(1) Pharmaceutical Administration

Pharmaceutical administration is carried out by the Ministry of Health which has the following organization.



As shown in the above figure, the Central Department for Pharmacies, under the Under Secretary, and affiliated organizations; General Organization for Pharmaceuticals, Chemicals and Medical Appliances and Pharmaceutical Laboratory are responsible for administering drugs and pharmacies.

The General Organization for Pharmaceuticals, Chemicals and Medical Appliances (GOD) is the agency administrating drug imports, production and distribution. Public sector corporations such as EPTC are all under the responsibility of this Organization.

(2) Laws and Regulations

There are the following laws and regulations on drugs.

① Law No. 528 (enacted 1983)

Provides stipulations on General Organization for Pharmaceuticals, Chemicals and Medical Appliances and its affiliated corporations such as EPTC.

② Law No. 127 (enacted 1955, partially revised 1959)

Stipulates matters on drugs consisting of the following contents.

- (i) Pharmacy, its function, permission, qualification and drug marketing
- (ii) Regulations regarding function and operation of drug related organization (companies, pharmacies, etc.)
- (iii) Production of drugs (producers)
- (iv) Import of drugs, drug raw materials and plants for drugs.
- (v) General conditions
- (vi) Penalties

③ Law No. 265 (enacted 1981)

Stipulates facilities and management of facilities for drugs production.

④ Regulations

- (i) Regulations on Drugs Quality
- (ii) Regulations on Drugs Registration
- (iii) Regulations on Drugs Price Control
- (iv) Regulations on Drugs Import Control

(3) Price of drugs

Since drugs play an important role in the health and welfare of the Egyptian people, the Government of Egypt is providing subsidies and low preferential exchange rate (1/4 - 1/3 market rate) for import of drugs and intermediate products to provide drugs at a low price.

The prices of pharmaceutical products are determined by the General Organization for Pharmaceuticals, Chemicals and Medical Appliances (GOD). Prices and commissions for medical suppliers for both public and private sectors at all levels are set by the government as shown in Table 2-13, therefore, drugs may be purchased at the same price throughout the country.

Table 2-13 Prices and Commissions at Different Stages

	Wholesaler (EPTC)	Pharmacy	User
Imported	100 (7%)	107 (10.0%)	117.7
Local	100 (7%)	107 (20.0%)	128.4

Source: IMS International

Table 2-14 Distribution of Pharmacies Supplied by EPTC

Governorate	Number of Pharmacies	Remarks
1. Cairo	1,993	Pharmacies in Bahr, Ahnar, New Valley Matrough, North Sina, South Sina are supplied from Suez, Assiut, Alexandria, Ismailia.
2. Alexandria	1,044	
3. Port Said	90	
4. Suez	56	
5. Ismailia	112	
6. Damiat	150	
7. Dakahlya	640	
8. Sharkeya	325	
9. Kalubeya	171	
10. Menoufia	230	
11. Garbya	423	
12. Kafr El Sheikh	192	
13. Behera	300	
14. Giza	660	
15. Fayoum	145	
16. Beni Suef	145	
17. Menya	242	
18. Assiut	244	
19. Sohag	260	
20. Dulna	204	
21. Aswan	68	
22. Bahr Ahnar	0	
23. New Valley	0	
24. Matrough	0	
25. North Sina	0	
26. South Sina	0	
27. Egypt	7,694	

Source: EPTC