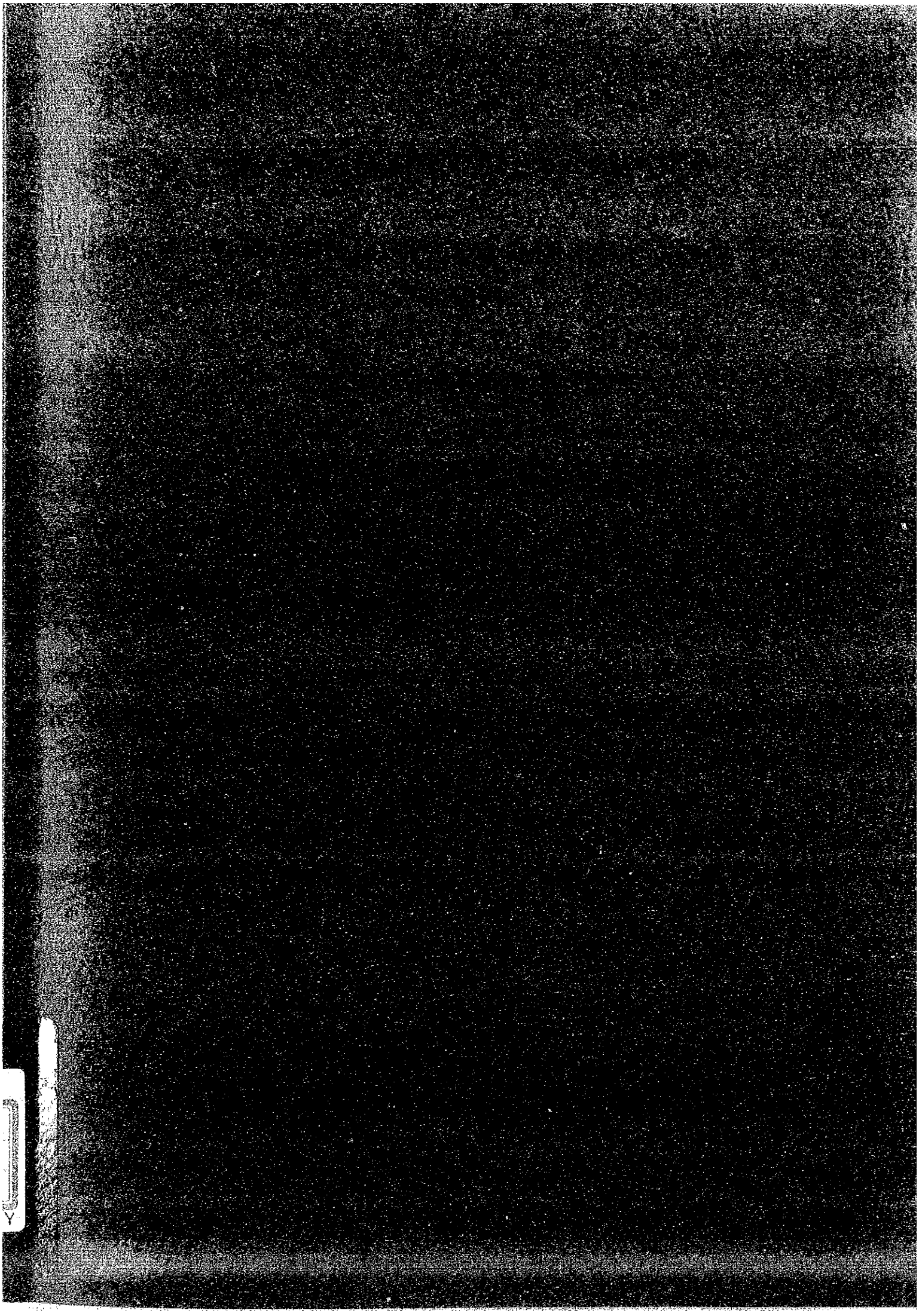


BASIC DESIGN STUDY REPORT
ON
THE PROJECT FOR IMPROVEMENT
OF
THE HIGH INSTITUTE OF NURSING
CAIRO UNIVERSITY
IN
THE ARAB REPUBLIC OF EGYPT

MAY, 1990

JAPAN INTERNATIONAL COOPERATION AGENCY

PREFACE

In response to a request from the Government of the Arab Republic of Egypt, the Government of Japan has decided to conduct a Basic Design Study on the Project for Improvement of the High Institute of Nursing, Cairo University and entrusted the study to the Japan International Cooperation Agency (JICA). JICA sent to Egypt a Survey Team headed by Ms. Junko Kondo, Professor, St. Luke's College of Nursing, from December 8th to 29th, 1989.

The team exchanged views with the officials concerned of the Government of Egypt and conducted a field survey. After the team returned to Japan, further studies were made. Then, a mission was sent to Egypt in order to discuss the draft report and the present report was prepared.

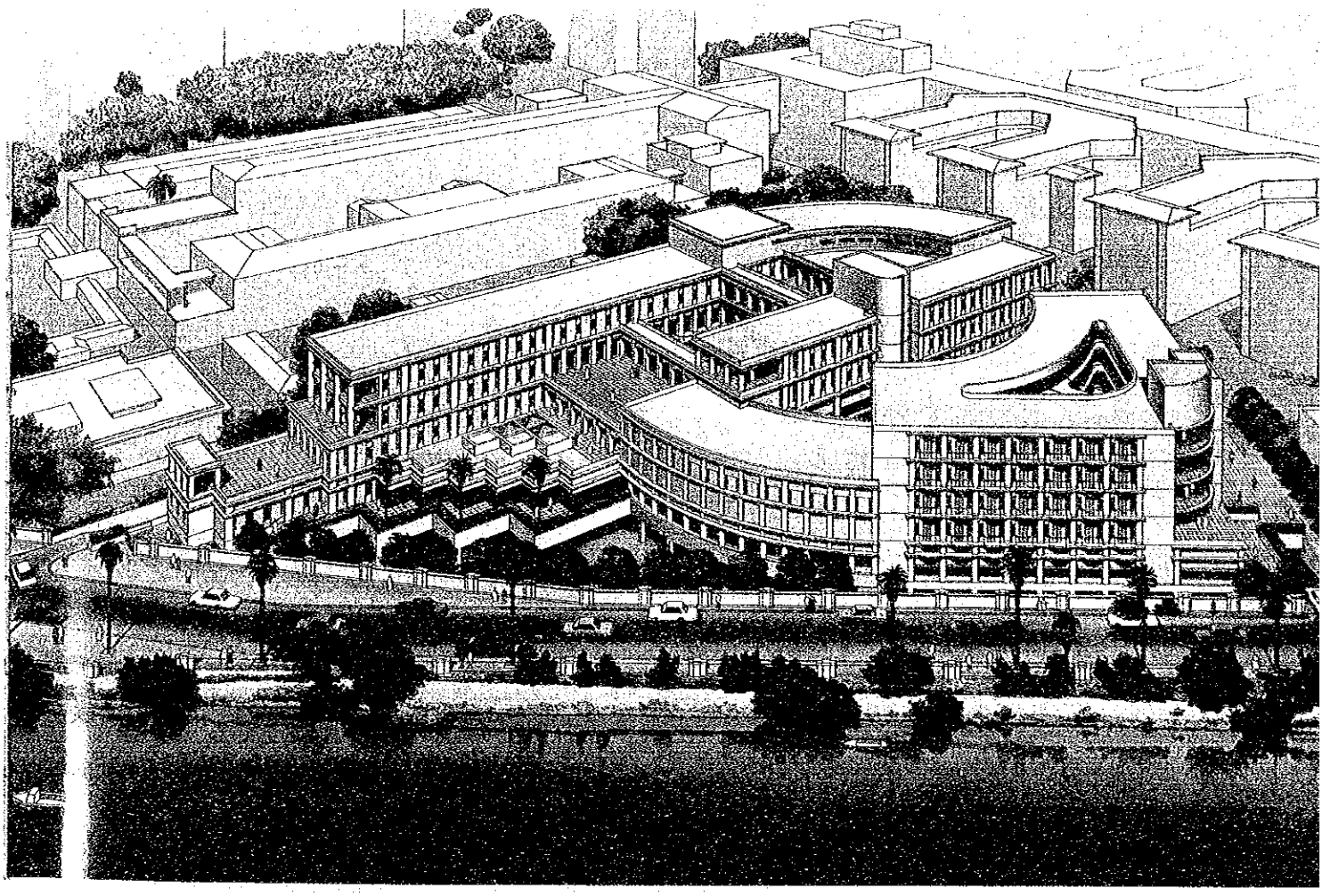
I hope that this report will serve for the development of the Project and contribute to the promotion of friendly relations between our two countries.

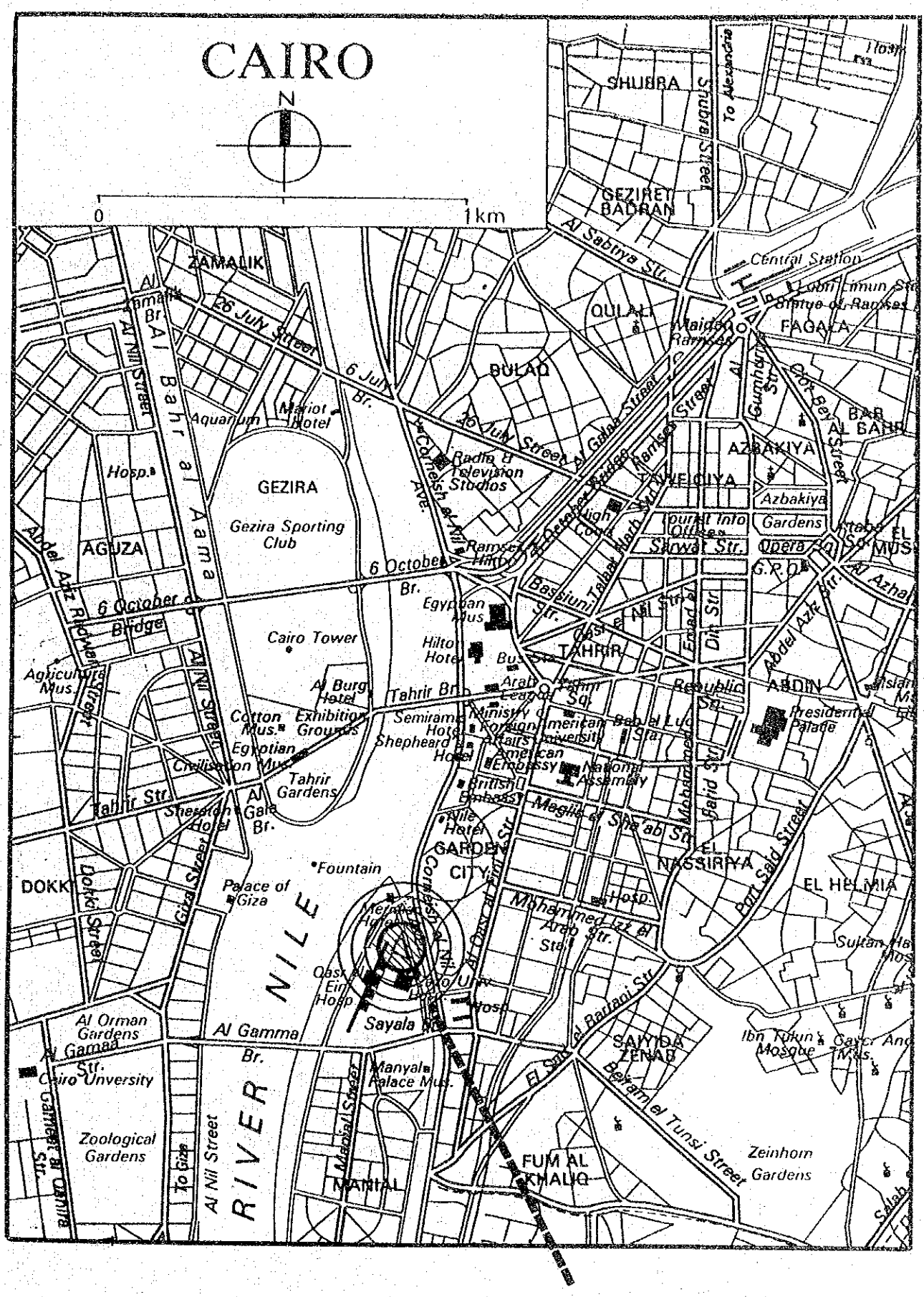
I wish to express my sincere appreciation to the officials concerned of the Government of the Arab Republic of Egypt for their close cooperation extended to the teams.

May, 1990

Kensuke Yanagiya

Kensuke Yanagiya
President
Japan International Cooperation Agency





PROJECT SITE

SUMMARY

SUMMARY

Since the latter half of the 1970s, Egypt has continued to record remarkable economic growth at an annual rate of 8 - 9% and its population, which currently stands at 50 million, is expected to make a dramatic leap to 65 million by the end of this century. Under these circumstances, an efficient system of public health care is a matter of great national importance. The targets set up in the 2nd 5 year Socioeconomic Development Program of Egypt (1988 ~ 1992) include construction of health care centers, control of endemic diseases, improvement of quarantine procedures and other means of preventive medicine, upgrading of the environment for medical treatment through an increased number of hospitals, improvements in basic medical fields through the construction of laboratories, and domestic production of pharmaceuticals.

Fostering of health and medical care personnel is another primary target for Egypt. The current work force of nurses is insufficient, both in quality and in quantity, and the ratio of the number of nurses to the number of physicians is also too small to provide sufficient services. It is therefore necessary to foster the leaders of nursing education first.

The High Institute of Nursing of Cairo University was established in 1964 as the second oldest institution for university level nursing education after the High Institute of Nursing of Alexandria University. Approximately 800 students have graduated from the Institute so far. The graduates are playing the vital role of educators of nurses, leaders of nursing administration at the Ministry of Health, and head nurses at hospitals. However, the current situation is that the system and organization of training these nursing experts cannot be regarded as sufficient for achieving the national goals of Egypt mentioned above. Also, the facilities of the High Institute of Nursing were torn down in 1987 to allow the site to be used for constructing a new educational hospital with funds loaned by the Government of France, and the Institute is compelled to use some of the facilities of the Cairo University Faculty of Medicine. Japan has been implementing nurse training programs in Egypt through a nursing education research project as well as the Cairo University Pediatric Hospital Project , focusing on technical transfer in the area of clinical nursing. The Egyptian side has highly evaluated the efforts made by Japan on these projects and requested the Government of Japan to provide technical cooperation in the form of a project and the construction of facilities under grant aid. With these points taken into account, the High Institute of Nursing of Cairo University was chosen by the Government of Egypt for the target project which is anticipated to contribute to the qualitative and quantitative improvement of leaders in nursing education and which will, in turn, enable Egypt to play the role of leader in this field among its neighboring countries. Consequently a request was made for the Government of Japan to provide grant aid and technical cooperation. In response to this request, the Government of Japan decided to conduct a preliminary study. Based on this decision, the Japan International Cooperation Agency (JICA) dispatched to Egypt in September 1989 a "Joint Preliminary Study Team for Technical Cooperation and Grant Aid." The Study Team was assigned the tasks of confirming the contents of the Egyptian request, drawing up a basic concept for the facilities, and conducting surveys on the necessity and adequacy of providing grant aid.

The Study Team concluded that the technical cooperation and grant aid for the facilities of the High Institute of Nursing is a project of great importance that urgently needs to be realized for the qualitative and quantitative improvement of nurse training which is a major goal for Egypt in the area of public health care.

The Government of Japan decided to undertake a basic design study and commissioned JICA to dispatch a Basic Design Study Team to Egypt for 22 days from Dec. 8 to Dec. 29, 1989. The results of the study were analyzed after the Team's return to Japan and further research was done on the basic design of facilities, selection of equipment and system for maintenance and management. JICA subsequently sent a Basic Design Draft Final Report Presentation Team to Egypt for 11 days from April 5 to 15, 1990.

The Study Team concluded that, for the adequate implementation of the Project, the facilities should consist of educational facilities for undergraduates and educational/research facilities for graduate students based on revised curricula, and training facilities to correspond to the extracurricular training programs, and drew up an optimum scheme for implementing the Project.

Education in seven areas is provided at the High Institute of Nursing: fundamentals of nursing, medical-surgical nursing, pediatric nursing, maternity nursing, community nursing, psychiatric nursing and nursing management. The curricula have been drawn up so that approximately the same amount of time is spent on classroom lectures and hospital training. The special facilities within the High Institute of Nursing include skill labs used for training beginners, an anatomical laboratory equipped with human models, a primary health care unit, a research laboratory where personal computers are installed, and a language laboratory for lessons in English.

The Institute will have a total of 1000 students: 850 undergraduates including 200 freshmen (and transfer students expected from other colleges), and 150 students in the M.Sc. and Ph.D. courses.

The planned site for the facilities is located within the campus of the Faculty of Medicine, Cairo University, in the central part of Cairo, capitol of Egypt, facing the River Roda. The site dominates the northeastern corner of the campus of the Faculty of Medicine and borders on the River Roda, a tributary of the Nile. The site, which has an area of 7,470 m^2, currently accommodates a 5-story superannuated dormitory for nurses. This building needs to be demolished to allow construction of the new facilities.

The facilities consist of a school building for the High Institute of Nursing (Educational Dept., Administration Dept., Common Dept.), a student dormitory (for 200 students) and a semi-basement area. The structures and scale are: reinforced concrete structures, 4 stories above the ground for the school building and 5 stories above the ground for the student dormitory. The total floor area including the terrace plaza is 21,500 m^2.

The following are the main rooms of the facilities:

School building

- Educational Dept. : large classrooms (200), medium classrooms (100), small classrooms (50), small meeting rooms (12), seminar rooms, nursing skill labs., anatomy lab., nurse research lab., language laboratory, AV material production room, library, changing room, etc.
- Administration Dept. : Director's room, administration - related rooms, teaching staff-related rooms, meeting rooms, printing room, etc.
- Common Dept. : large auditorium (500), large meeting room (100), medium meeting room (50), small meeting rooms (25), cafeteria, recreation room, terrace plaza, etc.
- Student Dormitory (for 200 students) : bedrooms, dining room, washing room, etc..
- Semi-basement Area : parking space, machine room, storage, etc.

The equipment to be provided for the facilities covered by the Project will include those for the anatomy and physiology labs., those for the nursing skill labs., those for the nursing research lab. (personal computers), and those for the language laboratory and AV material production room. Equipment that are easy to use will be selected.

On the supposition that the Project is to be implemented under grant aid from the Government of Japan, the budget required of the Egyptian side will amount to a total of approximately £E4,200. The demolition work of the existing dormitory for nurses and the semi-basement parking lot will be carried out by the Egyptian side.

A total period of 30 months is required to complete the construction work for the facilities of this Project.

Cairo University will serve as the official agency in Egypt in charge of implementation of the Project, with the President of the University assuming overall responsibility. However, a committee headed by the Dean of the Faculty of Medicine has been organized as an executing agency. The committee will act on behalf of the president to supervise practical aspects of the Project until the completion of the facilities. The Director of the High Institute of Nursing will assist the committee in the practical work related to nursing education. The High Institute of Nursing will be the operating agency for the facilities after their completion.
A total of 186 staffers are planned for the High Institute of Nursing at the time of completion of its facilities: 110 teaching staffers and 76 administrative staffers.

The following effects are anticipated through the implementation of the Project:

1) A great contribution will be made to the qualitative improvement of the health and medical care system of Egypt. The increase of skilled nurses will lead to an upgraded nursing system in medical facilities.

2) Reinforcement of nursing education in Egypt will be realized through fostering of talented personnel who can become leaders in nursing education in Egypt.

3) An overall improvement of the public health and welfare of the Egyptian people will be achieved by nurses educated with a thorough knowledge of preventive health enphasizing primary health care.

4) The far-reaching effects will contribute to the qualitative improvement of nursing education in neighboring nations as well as in Egypt.

The activities to be carried out in the facilities will bring about qualitative and quantitative improvement of the personnel involved in nursing education in Egypt and will ultimately contribute to solving some of the serious problems faced by Egypt in the field of health and medical care. Egypt also serves as the model in terms of nursing education for other Middle and Near East nations and African nations . In the light of this vital role played by Egypt, it is both significant and appropriate that the Project be promoted by grant aid from Japan, a country equipped with outstanding technology and expertise in the area of nursing education. Major and far-reaching effects can be anticipated from this grant aid.

In addition to the facilities proposed in this report, the Egyptian government has expressed its desire to construct a student dormitory to accommodate 100 students. However, no budgetary measures have been drawn up to cover the costs, and no specific program has been drawn up for increasing the student quota, including acceptance of students from the countryside and other nations. Therefore, regarding the concurrent execution of this work by the Egyptian side, substantiation of the above conditions has to be carefully ascertained.

CONTENTS

Appendices

CHAPTER 1 INTRODUCTION

Chapter 1: Introduction

Egypt, home of the oldest civilization on earth, has always been the central force and major influence in the Arabic-Islamic world. While its comparatively large population has helped it become a leader in the social and cultural domain, Egypt still carries the following structural weaknesses in its economy:

(1) Food and housing shortages accelerated by the booming population.

(2) Insufficient and superannuated infrastructure.

(3) Shortage of domestic skilled workers resulting from the outflow of labor force to foreign countries.

Socio-economic development programs aimed at restructuring of the Egyptian economy are being planned, but many problems must be solved before the plans can be smoothly implemented.

Despite these disadvantageous economic structures, Egypt has not lost its powerful impact over the Arabic-Islamic world. Higher education institutes including Cairo University and Alexandria University accept students not only from the Arab countries but also from other neighboring countries and are playing a pivotal role in the popularization of the Arabic languages and cultures as well as in the transmission of Western civilization.

Regarding health and medical care, current statistics in Egypt indicate an undersupply of nurses compared with the number of physicians (no. of registered physicians: 84,000, registered nurses: 52,000). In addition, out of the entire population of the nurses in Egypt, the nurses who have completed a university course or junior college course and have acquired specialized knowledge and skills through their courses account only for 1.2% and 0.6%, respectively, and the remaining 98.2% of all the nurses in Egypt are those who have trained at a high school level, or a junior high school level in the old system. These facts are now posing difficulties in the operation of health and medical facilities. The mediocre standard of nursing skills and the inadequate system for training them is another urgent issue of national importance that remains to be solved.

The High Institute of Nursing of Cairo University is a university-equivalent institution for high education established in 1964, the second oldest institution of its kind after Alexandria University founded in 1952. The courses offered at the Institute are those for B. Sc. Nursing (4 years + 1 year internship) which accepts students completing the 12-year fundamental education, M. Sc. Nurse (2 - 5 years) and D.N. Sc. Nurse (2 - 6 years). Approximately 800 students have graduated from the Institute so far. Through their work as teaching staff of universities, technical staff of Ministry of Health, head nurses of hospitals, the graduates are playing a vital role in the nursing administration and educational activities in Egypt.

However, the facilities for the High Institute of Nursing was torn down in 1987 so that the site could be utilized for a 1000-bed educational hospital built with the money borrowed from the government of France. As a result, the High Institute of Nursing is currently functioning by borrowing classrooms and other facilities of the Faculty of Medicine.

Meanwhile, Japan has been implementing nurse training programs in Egypt, initially through the Nursing Education and Research Project (1978 - 1983) focusing on Primary health care and subsequently through the Cairo University Pediatric Hospital Project (1983 - 1989) focusing on technical transfer in the area of clinical nursing.

The Egyptian side highly evaluated the efforts made by Japan on these projects and requested the government of Japan to construct facilities of the High Institute of Nursing of Cairo University under grant aid and to provide the institute with technical cooperation in the form of a Project.

The Project is anticipated to contribute to the qualitative and quantitative improvement of leaders engaged in nursing education in Egypt which will, in turn, enable Egypt to play the role of leader in this field among neighboring countries.

In response to this request, the Japan International Cooperation Agency (JICA) dispatched to Egypt a Preliminary Study Team headed by Ms. Junko Kondo, professor of St. Luke's College of Nursing from September 1 through 8, 1989 for the purpose of confirming the contents of the request etc. The results of the study confirmed the significance of cooperation, so a Basic Design Study Team was dispatched from December 8, through 29 1989 for investigating the adequacy of the Project.

The following are the main subjects of on-site surveys conducted in Egypt:

(1) Reconfirmation of the contents and background of the request submitted by Egypt

(2) Study on the executive organization and relevant agencies of the Project

(3) Confirmation of the details of education provided at the High Institute of Nursing

(4) Survey on the site of the Project, and on the circumstances of related infrastructure

(5) Study on the functions and scale of the facilities and review on technical matters related to construction works.

(6) Reference studies on relevant facilities and equipment.

(7) Negotiations with relevant authorities involved with construction authority.

(8) Study on implementation schedule and Egypt's budgetary considerations on the Project

(9) Collection of data necessary for calculating the costs for the Project.

Based on the various studies listed above that are prerequisite for the basic design as well as the results of consultations with related parties in Egypt, the Basic Design Study Team drafted an outline of the contents of the Project, the executive organization, construction site of the Project and the scope of works of the government of Egypt and Japan, which were subsequently agreed by the two parties.

The main contents of the report were exchanged between Dr. Salama, President of Cairo University and Ms. Kondo, Head of the Basic Design Study Team on December 20, 1989.

The Basic Design Study Team analyzed the results of these surveys in Japan and draw up the basic design. JICA subsequently dispatched a "Basic Design Draft Final Report Explanation Team (Headed by Mr. Yutaka Hosono, Managing Director of the Grant Aid Study and Design Department of JICA)" to Egypt for a period of eleven days from April 5 through 15, 1990.

The "Basic Design Draft Final Report Explanation Team" confirmed the contents of the basic design with the Egyptian party. After the contents had been approved by the two parties, the contents agreed upon were summarized in the form of Minutes of Discussions on the Basic Design Draft Final Report and exchanged between Dr. Salama, President of Cairo University and Mr. Hosono, Head of the Basic Design Study Draft Final Report Explanation Team.

The List of Team Members, Itinerary for the Study, List of Main People Interviewed and copy of the Minutes of Discussions have been attached as addendum to this Report.

CHAPTER 2 BACKGROUND OF THE PROJECT

Chapter 2: Background of the Project

2-1 Outline of the Relevant Sector

2-1-1 Circumstances of Health Care in Egypt

The population of Egypt has been increasing at an incredible speed since the 1950s. The current population as of 1986 reaches 50 million (males: 24.50 million, and females: 25.50 million), out of which 44% live in the urban area and the remaining 56% in the rural area. The population of the city of Cairo is 6.05 million, which accounts for 18% of the total population. The population of the vicinities of Cairo is 18.51 million, taking up 37% of the total population. The demographic composition shows that 13.8% of the population are 4 years old or younger, and 40% are 14 years old or younger. The average life expectancy for 1984 was 55.9 years for men and 58.4 years for women.

The birth and death statistics are given in the Fig. 2.1.1. The gross birth rate has more or less been constant in these several years, marking 38.0 as of 1986. The death rate is 8.5 and the normal increase rate of 29.5 has undergone no notable decrease recently. If these circumstances remain unchanged, the population of Egypt is likely to double itself within the next 25 years.

The infant mortality in Egypt has been gradually decreasing these years with the reduction of the death due to digestive diarrhoetic dehydration as the health workers' effort of spreading the oral treatment method using supplementary liquid has appeared to be effective. The infant mortality to the birthrate as of 1986 is 44 to 1000. The three largest causes of infant death are infectious and contagious diseases (40%), respiratory diseases (30%), and digestive diseases (10%). The three largest causes of death of the entire population are the diseases of circulatory organ (18.9%), respiratory diseases (18.8%), and infectious and contagious diseases (17%). Under such circumstances, the government of Egypt has been trying from the time of Nasel presidency to provide medical services to the people under the public interests. To date, health centers, which provide basic medical treatment and examinations, have been located at various points of the nation to serve as the base of primary health care. In addition to these health centers, health units and child and maternal health units, which serve as the primary health and medical facilities, are also located over the country to facilitate the health care service for local residents. With regard to medical staff, 4,000 to 5,000 students graduate from medical courses every year to be physicians and are sent to local health units for a period of about two year after their graduation from university.

Regarding nurses, however, since most of the nurses working at medical facilities are the graduates of the institutions of high school level, their work is limited to assisting medical treatments and no positive activities towards local residents are carried out by them. Meanwhile, nationally, municipally, or privately operated advanced medical treatment facilities are being constructed one after another and the beds for patients

are increasing. Under the present situation, however, the number of nurses does not meet the demand accompanying to these recent trends and the qualitative and quantitative improvement of nurses as well as the strengthening of nurse training system are considered to be the most urgent issue to be solved.

Fig. 2.1.1 DEVELOPMENT OF VITAL STATISTICS FOR 1,000 OF POPULATION

YEAR	1980	1981	1982	1983	1984	1985	1986
Birth Rate	37.5	36.8	36.2	37.6	38.6	37.5	38.0
Death Rate	10.0	10.0	10.0	10.0	9.4	9.1	8.5
Normal Increase Rate	27.5	26.8	26.2	27.6	29.2	28.4	29.5
Infant Mortality	76.0	70.0	70.0	65.7	61.2	55.7	44.1
Maternal Mortality Rate	0.9	0.8	0.8	0.8	0.8	0.8	0.8
Marriage Rate	9.4	9.4	10.3	10.5	9.9	9.1	9.1

(Source: Ministry of Health, 1987)

2-1-2 Number of Nurses and Employment

The nursing education in Egypt is currently provided in three levels: university; junior college; and senior high school, and licenses are issued depending on which course the nurse has completed: university graduates (BSc Nurse); junior college graduates (Technical Nurse); and senior high school level nurse training school graduates (Diploma Nurse). In addition to these, there are two other types of licenses: Health Visitor for school nurses; and Assistant Nurse for the graduates of the old school system.

The Assistant Nurse course was established in 1942 to offer an 18-month training program for junior high school graduates and was replaced with the diploma Nurse course in 1972 after 30 years of the establishment. The Diploma Nurse course offers a three year training for junior high school graduates and currently supplies the largest number of nurses in Egypt. In 1972, two junior colleges with nurse training courses were also opened.

According to the data compiled by the Ministry of Health for 1987, the total number of the registered nurses in Egypt is 50,299. Out of which university graduates are 580 (1.2%) and junior college graduates are 311 (0.6%). These nurses are called the 1st class nurse but account only for 1.8% of the entire population of the nurses in Egypt. The nurses accounting for the largest share are senior high school graduates, totaling 38,132 (75.8%). Following these are assistant nurses and school nurses, totaling 7,626 (15.1%) and 3,656 (7.3%), respectively. The last three types of nurses are called the 2nd class nurse and account for 98.2% of the total number of the nurses in Egypt.

In Japan, the nurses graduated from university and junior college, and those who have served as a nurse for three years or more after graduating from senior high school are

qualified as equivalent to the 1st class nurse in Egypt and the nurses categorized in this group account for 53% of the entire population of the nurses in Japan. Those who have served as a nurse for two years after graduating from junior high school are called as the assistant nurse equivalent to the 2nd class nurse in Egypt and account for 47% of the total.

In Egypt, those who have completed a nursing course either at university, junior college, or senior high school are required to serve as nurses or to assume other related jobs within the country for two years after graduating from school. The place of their employment is designated by the Nursing Department of the Ministry of Health. Since unmarried woman generally women live for the most case in Egypt, they choose an educational facility in the vicinity of hometown for their study. Accordingly, the health or medical facilities in or near their hometown are chosen for the most case as their place of employment.

According to the data compiled by the Ministry of Health for 1983, the place of employment of nurses by the types of facilities is as follows:

1.	Medical treatment facilities (such as hospitals)	13,695 persons	39.8 %
2.	Preventive health care facilities (such as health units)	11,482 psn	32.4 %
3.	Health and medical facilities in rural areas	8,204 persons	23.8 %
4.	Others	430 psons	3.4 %

The breakdown according to the academic background of the nurses is as follows:

		University or junior college graduates	Senior high school graduates	Assistant nurses
1.	Medical treatment facilities (such as hospitals)	226 (1.2 %)	11,205 (82 %)	2,324 (16 %)
2.	Preventive health care facilities (such as health units)	44 (4.0 %)	7,812 (68 %)	3,626 (31 %)
3.	Health and medical facilities in rural areas	25 (3.0 %)	5,536 (67.5 %)	2,343 (32.1 %)
4.	Others	47 (4.5 %)	781 (74.5 %)	221 (21.0 %)

In every type of facilities, the nurses graduated from senior high school and assistant nurses account for over 95% while the nurses graduated from university or junior college account only for 0.3% to 4.5%.

Table 2 Number of Nursing Staff in the Ministry of Health, Universities, Educational Institutions, Medical Insurance Firms, and Private Hospitals for 1987/1988

Ministry + schools	University	Medical assoc.	Educational Institutes	Medical Insur.	External P. hosp.	Total
37160	6792	1781	1832	1966	785	50316

Table 3 Place of Employment of Nurses Graduated from University for 1987

Sectors	H.I.N.	
Ministry of Health	226	39.0 %
University Hospitals	160	27.6 %
Educational Institutions	35	6.0 %
Curative Organization	107	18.4 %
Health Insurance	23	4.0 %
External Organizations	29	5.0 %
Total	580	100 %

As to the most frequent place of recruitment, the Ministry of Health and related facilities rank no. 1 with 37,160 persons (74%), followed by university hospitals: 6,792 (13.5%) (Table 2). Although few in number, university-graduate nurses play a major part as head nurses of hospitals and instructors in nursing education; 39% working for the Ministry of Health and 28% in university hospitals.

2-1-3 Plan for Supplying the Demand in Nurses

According to the data compiled by the Nursing Department of the Ministry of Health, the number of the nurses in Egypt as of July 1988 is 50,316, as shown in Data 2-1-3a (or 50,299 in 1987 data). This means the rate of nurses to the population in Egypt is 10 to 10,000, which is less than one fifth of that of in Japan where the rate is 53 to 10,000.

There are 84,000 (1987) and 81,100 (1986/1987) physicians in Egypt and this means the rate of physicians to the population is 16.4 to 10,000 and 16.2 to 100,000, respectively. This figure is slightly greater than the case of in Japan, where the rate is 15.8 to 100,000. The rate of physicians to nurses in Egypt is 1 to 0.6, which is less than one fifth of that of in Japan where the rate is 1 to 3.5.

1. The Ministry of Health in Egypt has established a nurse supply and demand plan for the year 2000 (See Table 4). In this plan, the required number of nurses is calculated according to the population of each prefecture. The required number of nurses to increase the present number of nurses, which is 50, 316 (10 to 10,000 people), to the rate of 25 to 10,000 people, is 124,128, and it is necessary to increase

73,812 more nurses from the present level. Even if this target is attained, the rate of nurses to the population in Egypt will only be one half of that of in Japan where there are 53 nurses (or 57 nurses including public health nurses and midwives) to every 10,000 people.

2. The required number of nurses is calculated based on three hypothetical models in which the mortality rate is assumed to be constant while the number of children per household varies for the years from 1980 to 2000. In the calculation, the nurses graduated from university or junior college are assumed to be the 1st class nurse and those who graduated from senior high school or an educational institution lower than this level are assumed to be the 2nd class nurse (Table 2-1-4b). Judging from the present situation of Egypt, the hypothetical model in which the number of children per household is assumed to be four is considered to be most realistic among the three models.

In these models, a policy is set to increase the rate of the 1st class nurses to the population while the rate of the second class nurses to the population is set to 10 to 10,000. The policy indicates the government's intention to improve the current rate of the 1st class nurses to the 2nd class nurses, which is 1.8 to 98.2, to 16.6 to 83.4 excluding emigrants.

According to the calculation shown in Table 2-1-3b, the expected number of nurses is 82,063. Since this number excludes emigrants working on a country's mission, the final expected number of nurses is 96,000 including 3.5% (or 3.0%) other factors.

Assuming that the expected number of nurses in the year 2000 would be 96,000 and the anticipated population in the same year would be 68,386,000, the rate of nurses to the population would be 14 to 10,000.

When the difference between the final expected number of nurses and the previous calculation result, which is 13,937 (96,000 - 82,063), is divided into the 1st class nurse and the 2nd class nurse by applying to the hypothetical model, we obtain.

1st class nurses (17): 2nd class nurses (83) = 2,369: 11,568

The number of the nurses required in the year 2000 is,

1st class nurses: 13,677 + 2,369 = 16,046
2nd class nurses: 68,386 + 11,568 = 79,954

The required number of nurses in Egypt by the year 2000 is between 96,000 and 124,128. When the required number of nurses is assumed to be 96,000, the expected number of the nurses graduating from university of junior college is 16,046 and the expected number of the nurses graduating from senior high school is 79,954.

These calculations were made for a population of 10,000 on the assumption that the natural increase of the population in Egypt would be minimum. Even if this assumption appears to be correct, however, the number of nurses to a population of 10,000 is still

14, which is less than one fourth of that of in Japan where the number of nurses to a population of 10,000 is between 53 and 57. Even in the case of Japan where the population tends to decline, the number of nurses is insufficient and the government has set a policy to increase the number of nurses.

Reflecting the government's great concern on the shortage of nurses in Egypt, the High Institute of Nursing at Alexandria University and the High Institute of Nursing at Cairo University are under pressure to admit the maximum number of students. Although there are six universities and two junior colleges which can produce 1st class nurses, the only one institution with a sufficient training capacity is Alexandria University, which has a long history of education since its establishment and excellent teaching staff, and has produced a great number of graduates. As Cairo University is still on the way of development and other four universities are still new or have just opened, teaching staff is yet to be increased and enrollment capacity is weak. To build new junior colleges, the teaching staff equivalent to that of the university level is necessary.

Table 2-1-3a Statistics of the Required Number of Nurses for the Population in Egypt Excluding the People Working Overseas for 1987/1988

Population	3% emigrants	Population excluding 3% emigrants	Total No. of Nurses	No. of nurses/ 10,000 people	Required no. of nurses to satisfy the nurse/population rate of 25/10,000	Need
51,185,000	1,537,000	49,648,000	50,316	10	12,4128	73,812

Table-2-1-3b

NECESSITIES OF NURSE STAFF FOR THE 5 YEARS
ACCORDING TO THE THREE ASSUMPTIONS
1980 - 2000

Assumption	1980	1985	1990	1995	2000	
Case 1						
Population in thousand	41,208	46,206	50,812	54,641	57,516	2 children
1st class nurse	8,242	9,241	10,165	10,128	11,503	
2nd class nurse	41,208	46,206	50,812	54,641	57,516	per family
Total	49,450	55,447	60,977	65,569	69,019	
Case 2						
Population in thousand	41,208	46,681	52,206	57,681	62,976	
1st class nurse		9,337	10,441	11,536	12,596	3 children
2nd class nurse		46,681	52,206	57,681	62,976	per family
Total	49,450	56,018	62,647	69,217	75,572	
Case 3						
Population in thousand	41,208	47,140	53,604	60,644	68,386	
1st class nurse	8,242	9,428	10,721	12,130	13,677	4 children
2nd class nurse	41,208	47,140	53,604	60,644	68,386	per family
Total	49,450	56,568	64,325	72,774	82,063	

(Source: Ministry of Health, Statistics Bureau, 1988)

Table-2-1-3c

Estimated No. of Nurses available
in the 5 years according to
the three assumptions and
the number of nurses/10,000 persons

Year	Expected No. of Nurses	Third Assumption	
		Popul. (Unit: 1,000)	No. of nurses/ 10,000 people
1980	36,000	41,208	8.7
1985	51,000	47,140	10.8
1990	66,000	53,604	12.3
1995	81,000	60,644	13.4
2000	96,000	68,386	14

(Source: Ministry of Health, Statistics Bureau, 1988)

2-1-4 System and Organization for Nursing Education

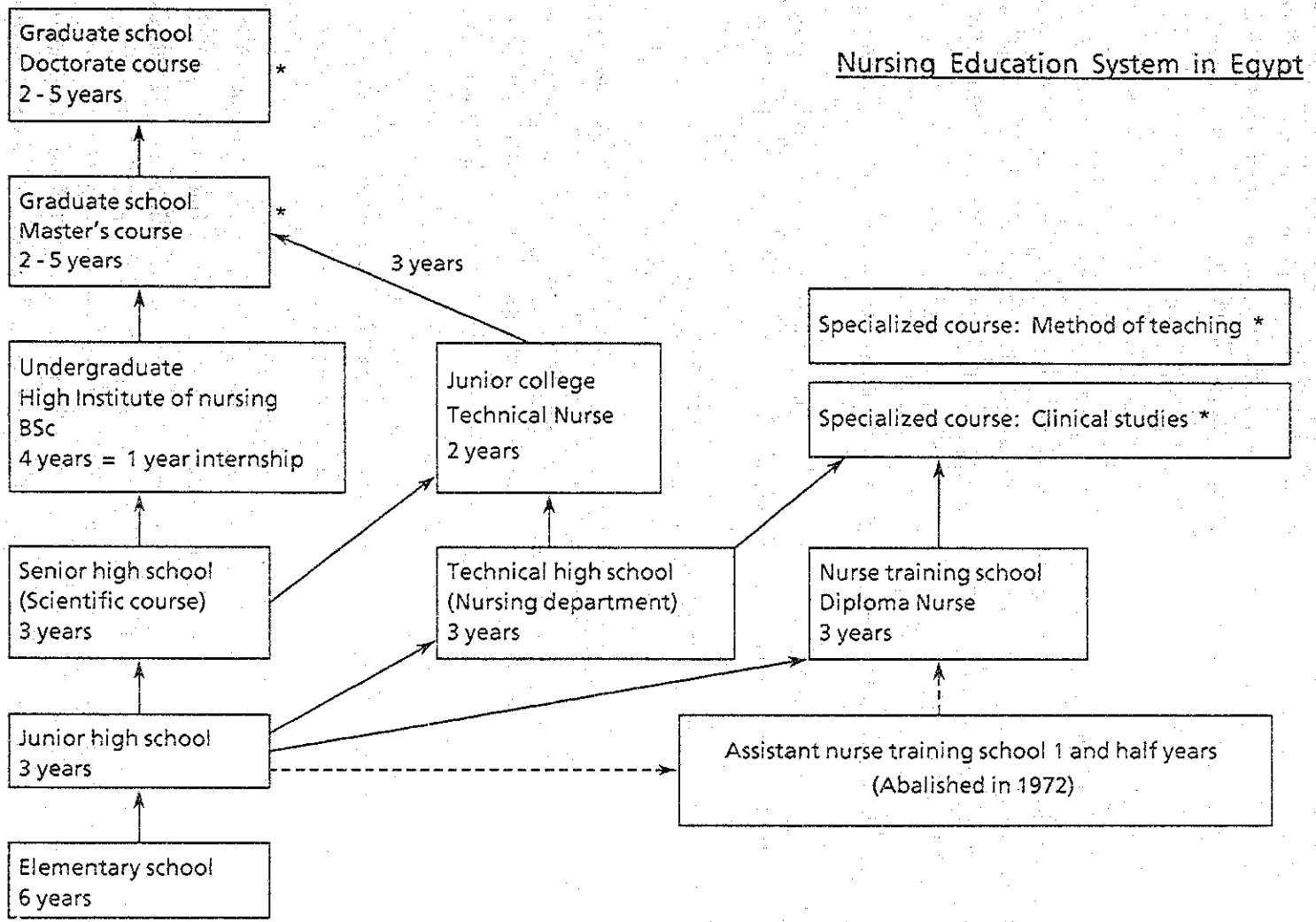
The system for nursing education in Egypt is as demonstrated in Fig. 2.1.4. Three courses are currently available: high school level Technical Secondary School for Nursing (3 years), junior college level Technical Health Institute (2 years) and university equivalent High Institute of Nursing (H.I.N.). Two universities also have graduate schools with master doctorate courses. Technical Secondary Schools are the largest in number with 155 schools. There are two Technical Health Institutes and six universities offer B. Sc. Nursing courses.

Although techincal high schools of nursing produce more than 90% of the nurses in Egypt, their curriculum consists of general subjects and specialized subjects of nursing and the contents of nursing training are therefore simple and limited. As pointed out in the WHO's evaluation report, both the knowledge and technical levels of the students are insufficient and the graduates are still young and immature.

In order to improve the knowledge level of the graduates of technical high schools of nursing, training hospitals provide one-year specialized courses for the nurses graduated from technical high schools of nursing. The specialized courses include more than ten different types of clinical studies such as internal medicine, surgery, orthopedic, obstetrics and gynecology, chest disease, and pediatrics. Those who have completed one of these specialized courses can take the method of teaching course to acquire a qualification to teach nursing. Most of the teachers at technical high schools of nursing, where not many university graduates are allocated, are those who have followed and completed these courses.

Fig. 2.1.4

Nursing Education System in Egypt



Note: * Does not relate to nursing licenses

2-1-5 Current Status of the High Institute of Nursing, Alexandria University

Alexandria University was established in 1954 as the first university of providing nursing education in Egypt.

As of 1989, the university has 352 students in the 1st year, 214 in the 2nd, 155 in the 3rd, 200 in the 4th and 165 in internship, amounting to 1,086 students in all. The master's course has roughly 20 students and there are about 10 doctoral students. A directive from the Council of Universities of Egypt caused the number of students to increase sharply in 1989 from the 260 first-graders in fiscal 1988. The university has also been requested to increase numbers to 400 or 500 students per grade in the future if facilities can be improved.

The number of teaching staff is at present 136 and an annual increase of 10% or so is scheduled. The staff consists of 17 professors, 17 assistant professors, 27 lecturers, 34 assistant lecturers, 33 demonstrators and 8 assistants. In addition, nearly 30 staff are on leave or have long-term tenures abroad at any one time. The current number of clerical staff is about 130.

The school runs a total of seven major nursing courses, the same as in Cairo University.

On a site of roughly 10,000m^2, the university has roughly 5,500m^2 of facilities, consisting of an administrative building, classrooms, laboratory buildings and storage. There is no cafeteria, gym, auditorim, etc. Each room is extremely small and students squeeze in. The laboratory buildings and storage are too old to be used.

Administrative Bldg. Four floors roughly 3,600m^2	Copying room, Director's room, teachers' room, library of about 100m^2 (with 5,000 books), conference rooms, offices, physics laboratory, 80m^2, nurses lab, 70m^2 (with 6 beds), study hall (100m^2), etc.
Classroom Bldg(s).	4 classrooms (80m^2 each) used by 60 to 100 students each. Seating capacity, 100.
Laboratory Bldg(s)	Chemical lab, 120m^2 (30 to 50 students). Almost no equipment available. Nurses lab, about 100m^2, 2 beds, 2 pairs of models. Too old to use.

Currently, the university is training 7 students from Yemen who are subsidized by the WHO. They are to be trained for 2 months to 4 years depending on their scholastic and other abilities. The university also has 3 trainees from Sudan and Ethiopia. The annual meeting of the Society of Nursing Science attracts more than 500 participants and is held

using facilities outside the campus. The conference is presented in both English and Arabic lanaguages.

The dormitory for students coming from outside communities currently accommodates 50 students. Fifty percent of the rooms are shared by 2 students and the other 50% by 3.

The university's management costs are as listed below. (Excluding salaries)

Overtime allowance	47,000 LE
Building maintenance costs	6,000
Car (spare oil)	2,085
Books and paper	1,000
Electricity	1,000
Furniture	11,085
Building maintenance costs	2,000
Telephone and transportation	3,950
Training fees	2,000
Total	77,120 LE (about ¥ 4,240,000)

2-1-6 Outline of Faculty of Medicine, Cairo University

The Faculty of Medicine of Cairo University and its affiliated general hospital are situated on a sandbank surrounded by the main streams of River Nile and River Roda. The site, which has an area of approx. 80,000 m^2, is dotted with the facilities of the Faculty of Medicine and the University Hospital. The campus plan was drawn up by a British architect in the 1920s, and the low-storied facility design of the plan is deemed inefficient in terms of land utilization compared with the other buildings in the city of Cairo.

A major part of the Hospital building, which was originally constructed in three stories, is now being expanded with the addition of one story. The current number of beds is 3,000, and approximately 700 more beds are planned to be provided in future. The number of students at the Faculty of Medicine as of 1989 is 1,384, an increase of 758 from 1985.

The Faculty of Medicine has such educational facilities as classrooms, laboratories, amphi theater type of classroom (for 200) and library (42,000 books), but is not equipped with an auditorium, gymnasium, language laboratory or computer center. Expansion work for an additional story is also under way for the classroom building of the Faculty of Medicine. Welfare facilities within the campus include two tennis courts. Because of the large numbers of outpatients and inpatients treated at the hospital, several gates are provided for strict security checks.

Academic year	New Students + Enrollees	Total
1985/86	758	758
86/87	727 + 82	809
87/88	881 + 97	978
88/89	1,019 + 127	1,146
89/90	1,229 + 155	1,384

(Source: Faculty of Medicine of Cairo University, 1989)

The subway system of Cairo has only one line, and there is virtually no public transportation system expect for buses. Because the site of the Faculty of Medicine of Cairo University is situated in the central part of the city, nearly 90% of the educational staffs, as well as about 20% of the administrative staffs, drive their own cars to work. Consequently, the campus is just as crowded as the roads of the city of Cairo, and the current situation is that approximately 1,000 cars are parked along the road both inside and outside the campus.

Under these circumstances, Cairo University has decided to make it an obligation for all new buildings to be built hereafter to be equipped with their own parking lots. For this Project, the University is calling for construction of basement parking lots as an effective way of utilizing the underground part of the buildings.

2-2 Outline of the High Institute of Nursing, Cairo University

2-2-1 Facilities and Equipment

(1) Present condition of the use of facilities

The facilities of the Institute were originally located on a site on the opposite bank of River Roda from the Faculty of Medicine, but the building used for the Institute was too small to accommodate sufficient educational facilities. The building in those days was unable to accept more than 100 students per year, and the University had been requesting the support of the government of Egypt for expansion of the facilities due to the pressing demand for increasing the number of graduates. The building itself was torn down in 1987 to allow the site to be used for construction of a 1,000 bed educational hospital, a project undertaken with funds provided on loan from the government of France. With the demolishment of the building, the teaching facility of the High Institute of Nursing had to be transferred to the campus where the headquarters of the Faculty of Medicine is located. The Institute is currently functioning by renting some of the facilities of the Faculty of Medicine including an auditorium and 2 classrooms. Because of the geographical advantage of Cairo where a number of medical facilities and health centers are concentrated, the training facilities of the High Institute of Nursing is substantial compared with those of other universities: They consist of six facilities within the Cairo University Hospital including the new Pediatric Hospital constructed by Japanese grant aid, and ten health centers in urban and rural areas throughout the country.

The Administration Dept. rents the facilities of the Faculty of Science at Giza (where its headquarter of Cairo University is located), approximately 2 km away from the site. A total of 20 rooms are being used for the University Hospital and Pediatric Hospital. In addition, the Institute uses 12 meeting rooms an 5 teaching staff rooms within the University Hospital. (Fig. 2.2.1)

Cairo University has a Student Dormitory which preferentially admits students coming from remote regions. Approximately 25% of the students of the High Institute of Nursing live in the Student Dormitory.

Fig-2-2-1

(Source: The High Institute of Nursing, Cairo University, 1989)

Facilities currently being borrowed by the High Institute of Nursing, Cairo University

No. of Classrooms	Borrowed From:	Size
3	Medical School	150
1	Anatomy	150
1	Physiology	150
1	Pharmacology	150
1	Old Medical Hospital	
1	OBS & GYN	
1	Public Health Section	
2	Pediatric Hospital	
1	Radiology	
1	Dental School	
1	Pathology	
1	Bacteriology	
1	Parasitology	
2	Cairo University	30
1	Cancer Institute	
1	Psychiatric Hospital	
20	Total	

Meeting Room	12 (from the University Hospital)
Teaching Staff Room	5 (from the University Hospital)

(2) Status of use of currently owned equipment in the Existing Facilities.

The equipment currently used for nursing education at the High Institute of Nursing can be roughly classified into those that are exclusively used at the Institute and those that are shared by other faculties of Cairo University (Hospital of Faculty of Medicine, Faculty of Pharmacy, Faculty of Literature and Roda Nursing Technology Center).

1) Equipment used exclusively by the High Institute of Nursing include several wheelchairs, medicine carts and equipment tables, stainless steel items such as pus trays, injectors, wash basins for patients, sterilizer and urinals for patients, small diagnostic tools made of glass and typewriters, copy machines, OHP, slide projector etc. With the exception of typewriters for clerical works and some of the copy machines that are worn out or out of order, the equipment are being managed without problems in terms of maintenance, since precision machines are few. From the aspect of nursing education, however, the absence of human body models and various other tools is inhibiting the achievement of good educational effects. (Data 2-2-1b)

2) As to equipment shared with other faculties of Cairo University, they comprise part of the equipment used at the patient wards of the Hospital of Faculty of Medicine of Cairo University and Pediatric Hospital where the training programs for the students of the Institute are actually carried out. They include beds and instillators. Small equipment such as stainless steel items used for bedside care are borrowed from the H.I.N. and brought into the site of training by the students. With respect to the use of computers, an educational booth installing about 10 personal computers for beginners (IBM models) in the Faculty of Pharmacology is available for use by the students of the High Institute of Nursing. About 10 more PCs are provided in the same location, and used mainly by the students of the Faculty of Pharmacology. Because of the excellent after-sales service of the suppliers, as well as good knowledge on computers on the part of managers of the machines at the Faculty, not one of the PCs is out of order although some of them are quite outdated.

The language laboratory in the Faculty of Literature is being used for language training of students of the High Institute of Nursing. The equipment themselves are well maintained and managed (including dust-proof measures), but the geographical distance from the current campus of the High Institute of Nursing to the campus of the Faculty of Literature is causing inconvenience for the students of the Institute. In addition, the limitation in the time of the use of the language laboratory available for the students of the Institute also inhibits an efficient management of the curricula.

Although the equipment for editing and producing audio/visual materials is installed in the Roda Educational Technology Center, the actual circumstances is that the equipment is hardly ever used for the High Institute of Nursing. This is because the Institute lacks the staff for producing teaching materials

from the equipment, and also because there is little or no video equipment or slide projectors to present the materials with even if they were produced. In comparison, the similar equipment for editing and producing video teaching materials that were provided to the Pediatric Hospital through Japanese grant aid is regarded as a successful example of technological transfer. This owes to the long-term and comprehensive technical guidance provided by Japanese experts which now allows the local staff to manage and maintain the equipment by themselves.

(3) The equipment for the Primary Health Care Unit is for the basic nursing experiment in community health setting use and no high precision equipment for medical examination is used.

List of Existing Equipment in the High Institute of Nursing, Cairo University Data-2-2-1b

Serial number	Item	No.
1	Wheel Chair	2
2	Dressing Cart	9
3	Medicine Cart	3
4	Sterilizer	8
5	Oxygen carrier	1
6	Extra large cotton contain	2
7	Drum	1
8	Large cotton container	12
9	Small cotton container	13
10	Instrument tray + lid	12
11	Instrument tray	4
12	Injection tray	17
13	ss handling forceps cont.	6
14	Plastic handling forceps cont.	7
15	Handling forceps ss	4
16	ss 3-prongs forceps	2
17	ss soiled forceps	6
18	ss sponge forceps	4
19	ss lage kidney basin	3
20	ss medium kidney basin	2
21	ss small kidney basin	30
22	ss tissue forceps	47
23	ss artery forceps	12
24	ss stitcs scissors	10
25	Angular scissors	3
26	Sinus forceps	4
27	ss large howls	18
28	ss medium bowls	20
29	ss small bowls	8
30	ss funnels	7
31	ss medication tray	1
32	ss catheter tray + lid	6
33	Stethoscope	13
34	Teaching stethoscope	2
35	Sphiygmomanometer	
36	Thermometers	53
37	Asepto syringe	4
38	Hammer	4

Serial number	Item	No.
39	Oxygen mask	5
40	20 ccs record syringe	1
41	5 ccs glass syringe	5
42	10 ccs half record	10
43	5 ccs half record	11
44	2 ccs record	1
45	10 ccs nondisposable plastic	8
46	5 ccs nondisposable plastic	14
47	Small ss pitcher	5
48	Large ss pitcher	7
49	Enamel pitcher	2
50	ss graduated pitcher	8
51	Feeding cup	5
52	Hot water bag	8
53	Ice bag	6
54	IV stand	1
55	Laundry bag + holder	1
56	ss wash basin	13
57	Plastic basin	25
58	Enamel basin	3
59	Laundry bag	2
60	Plastic cups	55
61	Individual containers	18
62	Plastic tray	3
63	Powder container	4
64	Bath thermometers	5
65	Enamel sputum cup	2
66	ss pail + lid	2
67	ss pail	2
68	Plastic pail	4
69	Bottle brush	9
70	Hand brush	12
71	Test tube holder	8
72	Test tube rack	3
73	Enema can	8
74	ss urinal	4
75	ss bed pan	7
76	Plastic bed pan	1

2-2-2 Organization

The High Institute of Nursing, Cairo University is relatively new as compared to other 13 faculties which enjoy a long history of education since their establishment. When a new department is to be opened in Egypt in general, key persons are recruited from the existing departments or faculties of other universities and then the graduates are trained to form a teaching staff. Cairo University is not an exception. After acquiring a doctorate degree, instructors at Cairo University are assessed every five years or so and are promoted to be in a hierarchical order, i.e., assistants, lecturers, assistant professors, associate professors, and professors in accordance with the promotion rules of the university. The promotion will be one rank by one rank but not two or more ranks at once.

Until the number of the professors of a department reaches to the level of other departments, the department is not designated as a faculty.

The High Institute of Nursing, Cairo University is on the way of being advanced to a faculty and now belongs to the Faculty of Medicine. According to the rules of the university, however, an institute has independent rights for personal affairs and operation of educational programs and can set up its own budget. Although it is officially required that the dean of the faculty to which the institute belongs assume chairmanship in the institute council, the dean of the Faculty of Medicine, in reality, has not attended to curriculum meetings of the High Institute of Nursing and all the practices related to the nursing education have been undertaken under the control of the Director of the High Institute of Nursing.

As of 1989, the total number of staff counts 136 (88 teaching staffers and 48 administration staffers). The staff is reinforced by 56 guest lecturers. The High Institute of Nursing is responsible for personnel planning and management.

2-2-3 Activities of the Institute

The High Institute of Nursing provides education in three levels: B. Sc Course (4 years + 1 year of internship) which enrolls students completing 12 years of basic education, M. Sc course (2 - 5 years), and D. N. SC. course (2 - 6 years). A total of about 800 students have graduated from these courses so far. The current number of students is 140 freshmen, 101 sophomores, 88 juniors, 87 seniors, 36 interns, 25 in M. Sc. course and 54 in D. N. Sc., totaling to 531.

Students from abroad include those from Palestine, Somalia, Ethiopia, Yemen and other middle and near east nations. In the past five years, approximately 30 foreign students have taken long and short courses of their choice. The Institute also has several students from Denmark, France and Holland.

The examination system for the admission to the High Institute of Nursing is as follows: First, the senior high school graduates who took a science course take the standard national examination. Then, the applicants apply for the admission to a desired

university, with priority given to those who marked higher scores, and successful applicants are selected. Finally, the successful applicants undergo interview at each university to screen out the final successful applicants. Those who marked high scores at the standard national examination may be admitted from a university located outside the designated area. Also, those who achieved successful results at junior colleges may also be transferred to a university.

	1985	1986	1987	1988	1989
No. of applicants who passed the exam	68	183	223	215	203
No. of applicants who also passed the screening interview	56	108	101	126	116
No. of students admitted	79	134	134	140	

The graduates take senior posts at the Ministry of Health and University Hospitals, or work as head nurses of hospital or educator of nurses. They play the role of leaders of both administrative and educational aspects of nursing in Egypt.

The High Institute of Nursing provides education in the following seven areas.

1. Fundermentals of Nursing
2. Medical Surgical Nursing
3. Pediatric Nursing
4. Maternal and Infant Care
5. Community Health Nursing
6. Mental Health Nursing
7. Nursing Service Administration

2-2-4 Operational Budgets

As indicated in Fig. 3.2.2-(3), the operational budgets for the High Institute of Nursing are proposed to the Ministry of Finance at the end of July every year. The budget is approximately equivalent to that drawn up for the High Institute of Nursing of Alexandria University. As of 1989, the budget for operational costs and personnel costs amounted to about 20,000 pounds and 260,000 pounds, respectively.

2-3 Outline of the Relevant Programs

2-3-1 National Program

The following summarizes the target and strategy of the 2nd 4 year Socioeconomic Program of Egypt covering 1988 to 1992:

The long-term target of Egyptian economic development program was set up in the long-range forecast plan for the period between 1983 and 2002. The long-term development strategy of the program aims at:

(1) Establishment of economic self-sufficiency for sustaining the planned development, by taking advantage of the potential power of Egyptian economy.

(2) Effective utilization of resources for upgrading the investment ability and efficiency of economy as well as the improvement and reinforcement of socioeconomic infrastructures.

(3) Well-balanced distribution of population and adoption of adequate measures for population/region adjustment for achieving regionalization of economy.

The significance of the second program is that it serves as the second intermediate program for attainment of the long-term target.

Fig. 2.3.1 : Target and Strategy of the 2nd 5 year Socioeconomic Development Program of Egypt

Targets	Strategies
1. Expansion of Production	(1) Much importance is placed on production-related services including agriculture, manufacture, electric power, daily necessaries and construction as well as social services such as housing and utilities. (2) Attainment of average net annual GDP growth rate of 5.8% during the period, and reinforcement of financial, insurance and sales systems for achieving these services. (3) Adequate allotment of roles between the public sectors and private sectors. For this purpose, 1) Merchandise and service prices appropriate for the purchasing power of each income bracket are to be established. 2) Consumption of luxuries, particularly of imported goods, is to be restrained. 3) Government spending is to be restrained, while adequate considerations are given on education, public health and security.

Targets	Strategies
2. Increase of Investment for Promoting the Conversion of Economic Structure	(1) Expansion of productive capacities to correspond to the growing demand. (2) Increase of investments in local areas. (3) Improvement of efficiency in private sectors.
3. Increase of Economic Cooperation and International Trading	(1) Increased utilization of Egyptian resources in economic cooperation projects. (2) Countermeasures against declining foreign capitals. (3) Increased exports in agricultural and manufacturing sectors. (4) Promotion of tourism. (5) Decreased dependence on income from the Suez Canal and money sent from laborers working abroad. (6) Decrease of import by means of domestic production of basic resources, protection of domestic industries, increase of food production, etc.
4. Assignment of More Important Roles to the Private Sectors and Reinforcement of Co-ops	(1) The share of investment in private sectors in the total investment is to be increased from 25% in the 1st Program to 39% in the 2nd Program. (2) Establishment of supporting cooperative associations in areas of finance and marketing. (3) Cooperatives playing an increasingly important role in production of consumables.
5. Adequate Distribution of Population	(1) Designation of densely populated areas through establishment of appropriate visions for development. (2) Prevention of environmental deterioration caused by rapidly increased population resulting from economic development. (3) Reducing the population growth rate to 2.6% in the final year of the Program. (4) Maintaining the present population distribution pattern (rural area: 56.2%, urban area: 43.8%)

2-3-2 Program Related to the Relevant Sectors

In the above-mentioned "2nd 5 year Socioeconomic Development Program", the targets listed below have been established for the areas of public health and medical care:

A budget of 6,500,000 Egyptian pounds will be allocated.

In preventive medicine:

1) Rehabilitation of 100 public health centers
2) Improvement of quarantine inspection services
3) Improvement of vaccines
4) Countermeasures for blood flukes
5) Countermeasures for malaria and tuberculosis

In medical treatment:

1) Construction of 22 public and central hospitals including Aswan hospital
2) Rehabilitation of 81 central hospitals including Agoza, El Gomhoreya, Mabara, Mahadi, Koptick, Heliopolis
3) Establishment of health departments in 25 local hospitals

In basic medicine:

1) Construction of 25 health centers
2) Construction of 100 local health departments

In pharmaceuticals:

1) Domestic production of medicine amounting to 86% of the total consumption
2) Restraint of import
3) Export of medicine equivalent to 5% of the total production

Importance is attached to reinforcement of health and medical facilities and education of health and medical personnel with the target of providing health care, preventive measures and restraining local diseases. Increases of 4,000 nurses is anticipated in 1987/1988, as demonstrated in the table shown below (Reinforcement Program for Public Health and Medical Facilities for 1987/88).

Details	1986/87	1987/88	Increased Number
No. of beds	96,700	99,400	2,700
No. of general hospitals	190	194	4
No. of beds in general hospitals	26,200	28,000	1,800
No. of local health units	2,082	2,102	20
No. of village hospitals	78	85	7
No. of beds in village hospitals	2,020	2,160	140
No. of physicians	77,300	81,100	3,800
No. of pharmacists	24,000	26,100	2,100
No. of nurses	78,000	82,000*	4,000
No. of dentists	10,500	11,300	800

* It is presumed that the number includes assistant nurses.

2-3-3 Positioning of the Project

As has been explained in the preceding pages, Egypt has been making efforts to improve health and medical care facilities and to reinforce the work force involved in the health and medical treatment facilities. The improvement and renovation of medical treatment facilities such as hospitals, the increase in the number of beds for patients, the improvement in medical treatment methods, and the strengthening of health care activities really require to increase the number of university graduate nurses. In the following, the necessity of nurses is explained more specifically.

(1) Strengthening of nursing administration in hospitals

University graduate nurses have taken the posts of chief nurses in hospitals. There were only few cases, however, that the university graduate nurses were promoted to the in service education manager in hospitals. For the improvement in nursing services in the future, it is necessary that university graduate nurses widely assume the post of chief instructors. In the case of the hospital where the 2nd class nurses account for the majority of the entire number of the nurses working there, the education within the hospital following their employment will be critical when the quality of the care offered at the hospital is considered.

(2) Strengthening of health care facilities in urban and rural areas

Not many university graduate nurses have been allocated as the chief nurses in the health care facilities in these areas. It is necessary to allocate university graduate nurses as the chief nurses or as the staff of these facilities to instruct primary health care activities which are now being undertaken by the nurses of the former system. This is aimed at activating primary health care activities to local residents through health centers and health units.

(3) Strengthening of post-graduate education for Diploma Nurses and Assistant Nurses

The curriculum of the nursing program at senior high school or senior high school level institutions is simple and is limited to basic nursing skills. Compared to that of in the developed countries, the program does not include not only primary health care but also clinical nursing. Those who have a Diploma Nurse or Assistant Nurse can take one-year specialized course after their completion of the program from the designated school to advance their clinical nursing competency. The courses are provided for several majors including medical nursing, surgical nursing, pediatric nursing, and maternal care. Those who have completed one of these courses can take one-year teaching method course to be nursing teachers. It is necessary to allocate university graduate nurses as the teachers of these programs, to increase the facilities where post-graduate training can be promoted to increase training activities, and to improve the quality of nursing care, especially for Diploma nurses and Assistant nurses who account for the largest percentage in the total population of nurses.

(4) Increase in the number of teaching staff at universities and junior colleges

Cairo University is in need for increasing the number of teaching staff in all levels. Four other universities except Alexandria University and Cairo University are still new since their establishment and it will take ten or more years until each university can be fully operated by their own graduates. Until then, it is necessary for these universities to receive support from the teaching staff of other universities. The increase in the number of university graduate nurses will eventually make it possible to prepare for opening of new junior colleges in the future.

(5) Strengthening of the range of nursing research

In order to provide appropriate nursing services and to cope with health-related problems, it is necessary to develop a nursing service model which is closely interrelated with the cultures of Arab and African nations by taking advantage of the geographical features of Egypt. With this model, it is expected that nursing services appropriate to the residents of each local areas will be provided.

(6) Allocation of nurses to health-related policy making sections

Besides the direct involvement in health care and medical treatment facilities, it is also necessary to have nurses to participate in policy making activities of rural, municipal, prefectural, and governmental authorities so that they can adjust the forefront nurse service activities between the residents and the health care and medical treatment -related authorities.

The proposed project is a part of the cultivation of university graduate nurses who will play an important role in the health and medical services in the future of Egypt.