No. 4

BASIC DESIGN STUDY REPORT
ON
THE PROJECT FOR IMPROVEMENT & EXPANSION
OF
THE RESEARCH INSTITUTE FOR TROPICAL MEDICINE
IN
THE REPUBLIC OF THE PHILIPPINES

SEPTEMBER, 1987

JAPAN INTERNATIONAL COOPERATION AGENCY

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PREFACE

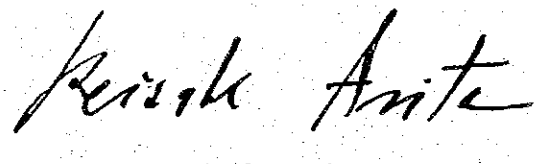
In response to the request of the Government of the Republic of the Philippines, the Government of Japan has decided to conduct a Basic Design Study on the Project for Improvement and Expansion of the Research Institute for Tropical Medicine and entrusted the study to the Japan International Cooperation Agency (JICA). JICA sent to the Philippines a Basic Design Study Team headed by Mr. Hironao Suzuki, Head of the First Basic Design Study Division, Grant Aid Planning and Survey Department, JICA from May 25th to June 14th in 1987.

The team had discussions on the Project with the officials concerned of the Government of the Philippines and conducted a field survey in Metro Manila. 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 Dr. Sakae Inoue, Director of Microbiology Department, the Institute of Public Health, Ministry of Health and Welfare was sent to the Philippines from August 24th to 30th in 1987. 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 the two countries.

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

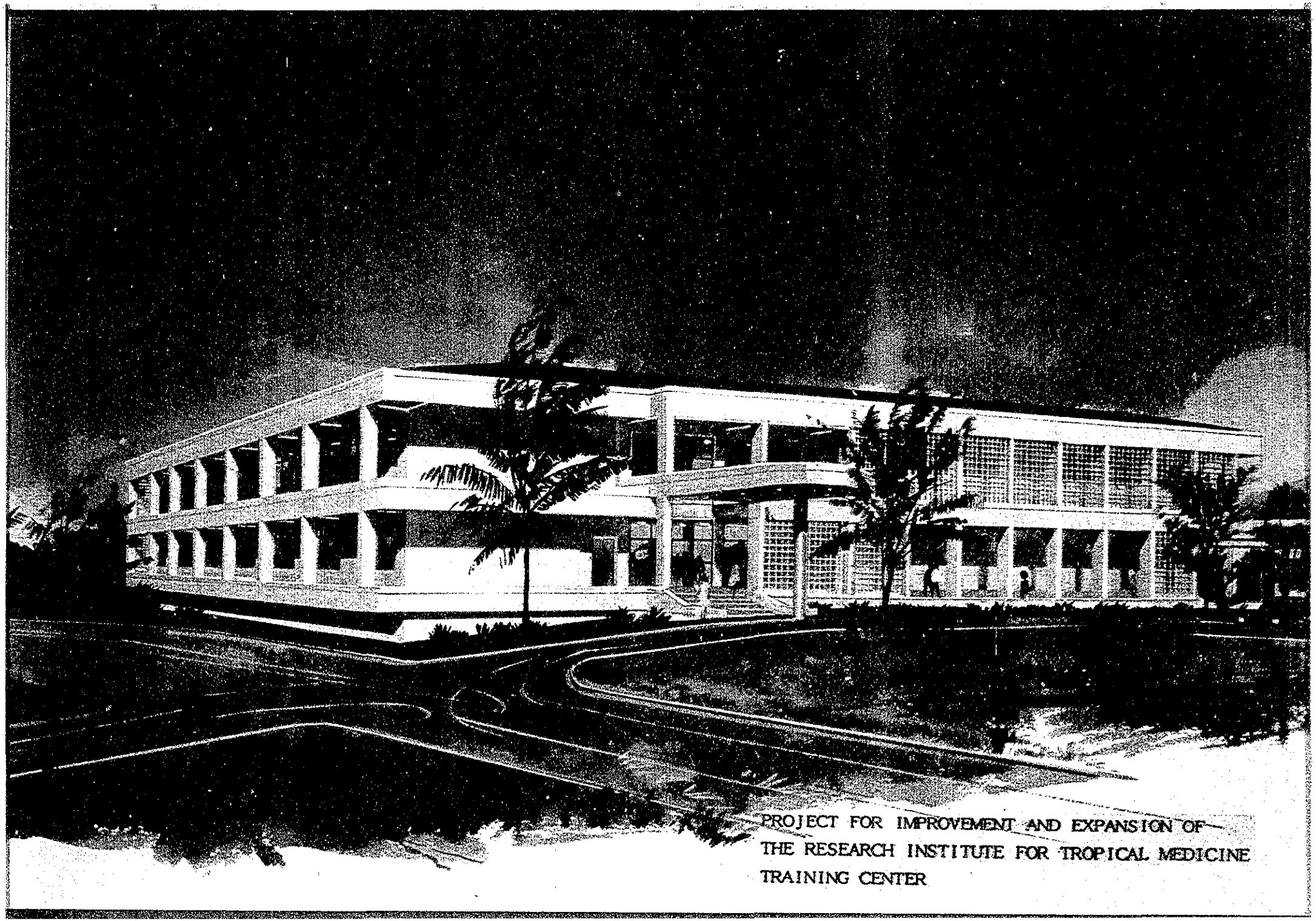
September 1987



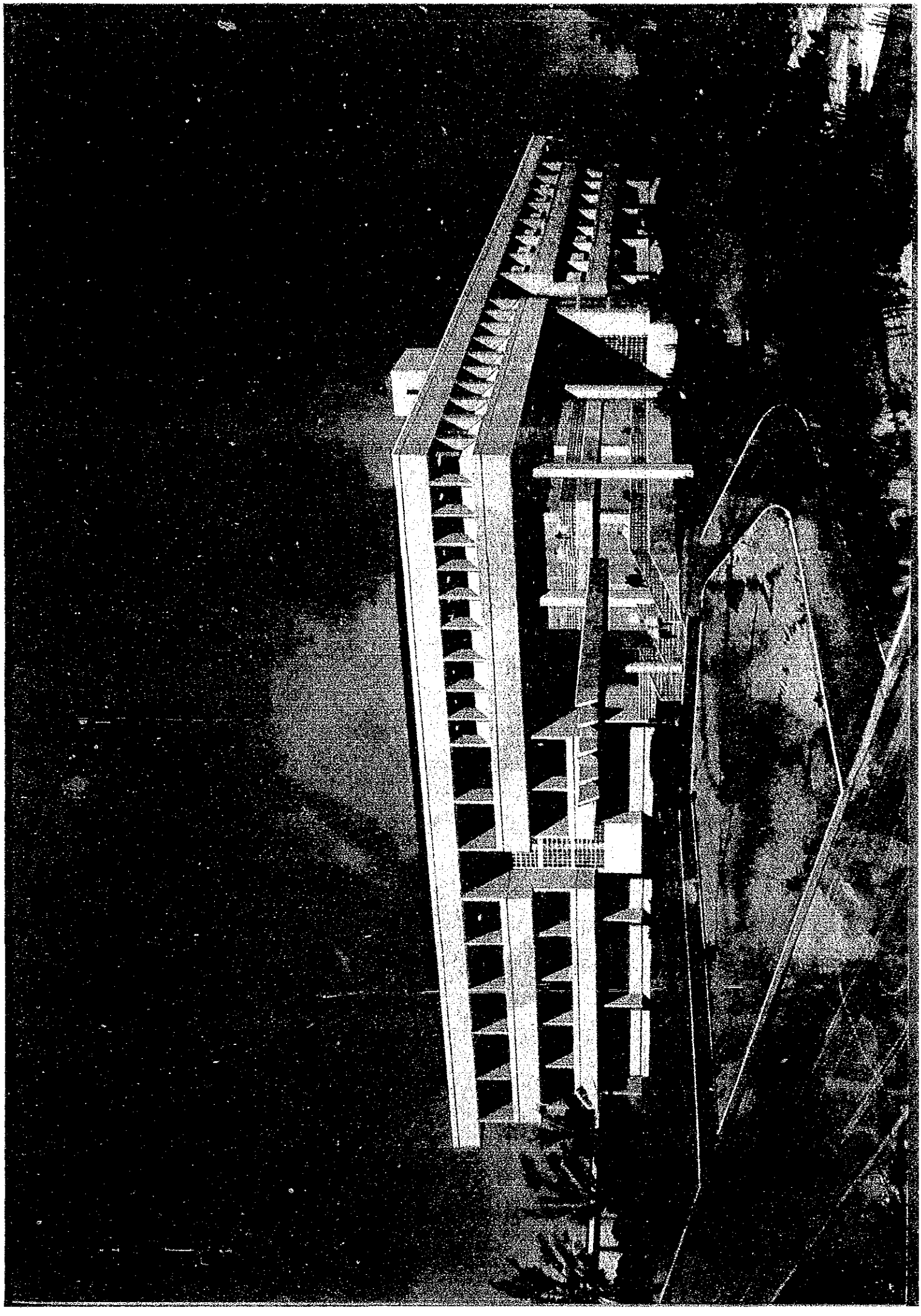
Keisuke Arita

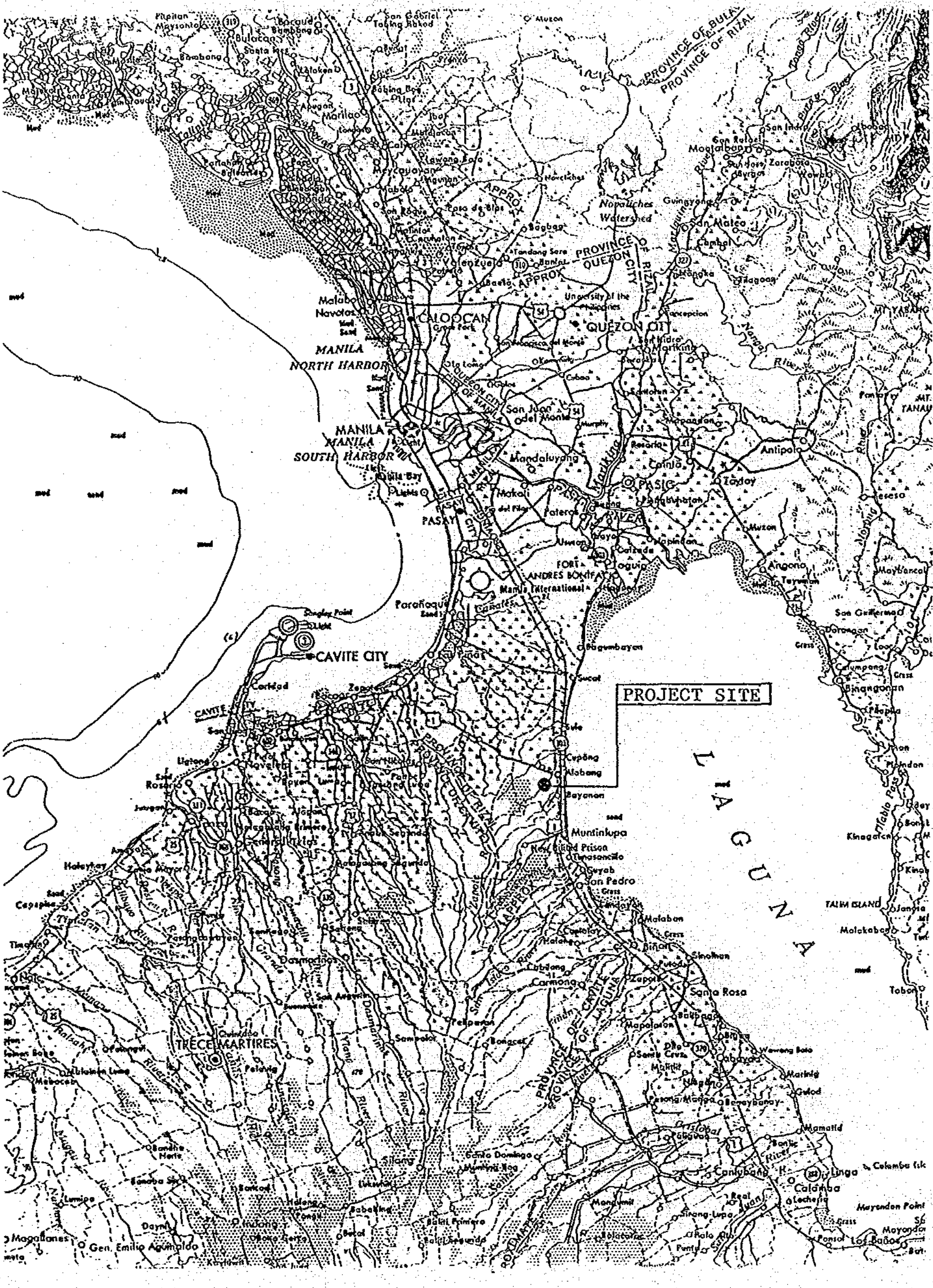
President

Japan International Cooperation Agency



PROJECT FOR IMPROVEMENT AND EXPANSION OF
THE RESEARCH INSTITUTE FOR TROPICAL MEDICINE
TRAINING CENTER





PROJECT SITE
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PROVINCE OF RIZAL
PROVINCE QUEZON CITY
MANILA NORTH HARBOR
MANILA
MANILA SOUTH HARBOR
CALOOCAN
QUEZON CITY
PASIG
PASAY
Parañaque
CAVITE CITY
Manila International
FORT ANDRES BONIFACIO
Mandaluyong
Makati
Marikina
Antipolo
Angono
Binangonan
Valenzuela
Malabon
Navotas
Muntinlupa
San Pedro
Biñan
Santa Rosa
Carmona
Calamba
Los Baños
TRECE MARTIRES
Gen. Emilio Aguinaldo
Magallanes
Dasmariñas
Montalban
San Mateo
Nonaliches Watershed
University of the Philippines
Taguig
Pateros
Bagumbayan
Sucat
Cupang
Alabang
Bayanan
New Bilibid Prison
Tunasan
Rosario
Noveleta
Bacoor
Zapote
Las Piñas
Marilao
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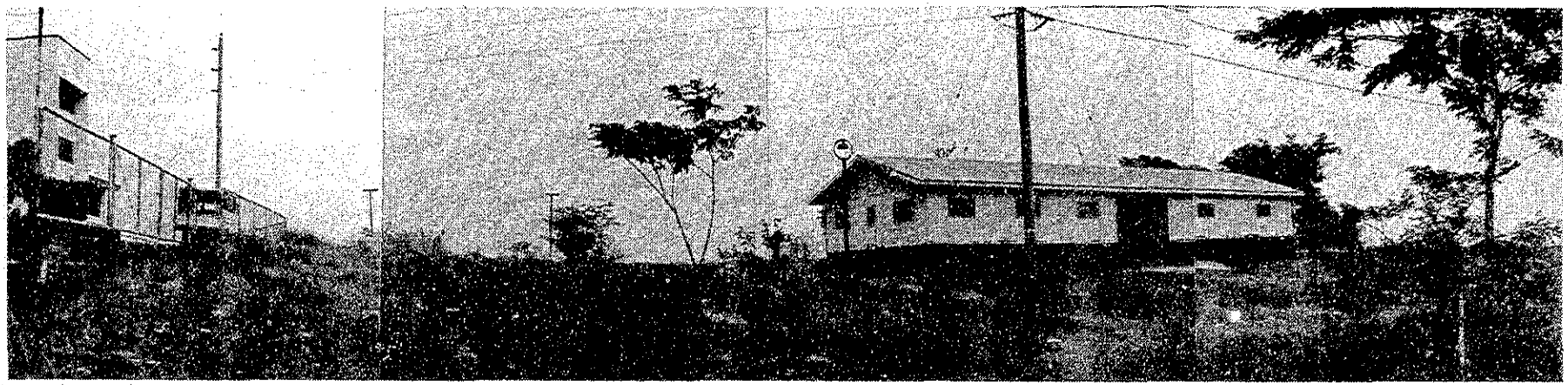
PROVINCE OF LAGUNA
TALIM ISLAND
L A G U N A

Site for Training Center



Site for Dormitory

SUMMARY

SUMMARY

The Republic of the Philippines, based on a belief that health is one of the basic human rights indispensable to the socio-economic growth of a nation, has formulated a National Health and Medical Care Plan. One of the major objectives of the Plan is the implementation of measures against those infectious endemic diseases which have the highest morbidity and mortality.

For the purpose of controlling such infectious diseases as diphtheria, pertussis, tetanus and polio the Research Institute for Tropical Medicine (RITM) was established in March 1981 with grant aid from the Japanese government. The facilities of this Institute are the most modern available with a total area of 6,113 sq. m. The project-type technical cooperation extended to this Institute by the Japanese government began in October 1980 and is scheduled to continue until March 1988.

Today, the Research Institute is playing a leading role in the medical research on the tropical medicine (including endemic diseases) in the Philippines, achieving outstanding results during the 6 years since its establishment. Its future aim is to spread the results achieved through researches in local communities.

With the growth of the RITM, the total number of personnel has been increased much more than initially planned and the number of patients under the care of this Institute has also been increasing. This has resulted in overcapacity in the operation of the whole facilities. In spite of efforts so far made on the part of the RITM, such as the construction of a new biological test laboratory and minor expansions or remodelling, only marginal impact has been made upon the routine research and training activities. In the clinical department, the staff members have been increased in proportion to the increase in the number of patients. As a result, the space for medical care and the dormitory for the staff on duty, which was not adequately provided even at the beginning, is now in a crucial condition, and drastic measures are required immediately.

The RITM offers training programs to the trainees from other institutions in the country. In addition, it schedules to commence a Third Country Training Program in which training will be given to those from neighboring countries. With the aim of strengthening its training activities by increasing the number of courses from 10 to 19 a year and thereby diffusing more effectively the achievements of research activities, the RITM has drawn up a plan to expand the existing training facilities and construct a new dormitory. For implementation of this project the Government of the Philippines requested the Government of Japan to extend grant aid cooperation.

In response to the request, the Japanese government decided to conduct a basic design study for this project and entrusted the study to the Japan International Cooperation Agency (JICA). JICA dispatched the Basic Design Study Team to the Philippines for the period from May 25 to June 14, 1987 to conduct the field survey necessary to devise the basic plan for the project. Based on the data collected in the Philippines, the study Team conferred with the representatives of other organizations concerned in Japan and conducted an extensive study regarding the key factors such as appropriateness of the project, optimum scale and grade, administration system and benefits expected from the project. Then the most appropriate basic design was drafted specifying the necessary facilities planning and equipment.

The purpose of this project is to promote the training activities of the RITM so that the benefits derived from the research can be widely available in the Philippines and abroad. To achieve this, the project incorporates the construction of a new annexed training center with the improved equipment and materials, repair and replacement of the existing facilities, and building of a dormitory associated with the training center and for the staff engaged in night shift services. The basic design of the facilities takes into full consideration the existing buildings to ensure the good performance of the overall organization.

The scope of the Project is outlined as follows:

Executing Agency : Research Institute for Tropical Medicine, Department of Health

Construction site : Within the compound of RITM, Alabang, Muntinlupa, Metro Manila

Facilities :

(1) Training center building — Reinforced concrete structure, two-storied with basement, total 2,194.3 m^2

- Training administrative office (6 people)
- Printing room
- Laboratory 1 (24 people) with preparation room
- Laboratory 2 (24 people) with preparation room
- Central laboratory
- Clean bench room(2)
- Lecture rooms (24 seats x 3 rooms, two of which can be combined into one)
- Sterilizing room
- Conference room (182 pairs of desks and chairs arranged in tiers with stage and projection room)
- Lounge

(2) Dormitory building — Reinforced concrete structure, three-storied plus basement, total 4,443.5 m^2

- Dormitory facilities for instructors, (6 single rooms with toilet, shower and air conditioning)
- Dormitory facilities for participants (24 single rooms, 13 double rooms, total accommodation for 50 people)
- Kitchen and dining rooms (3) for participants
- Laundries (2) for participants
- Library (2,000 books; 24 seats with toilet and air conditioning)

	- Dormitory facilities for paramedical staff (For male staff: 6-bed rooms (2), double rooms (6), total 24 people For female staff: double rooms (16), total 32 people, total accommodation for 56 people) - Kitchen and dining rooms (3) for staff - Laundries - Dining halls (2) (large: 110 seats, small: 30 seats) - Machine and electric rooms
(3) Covered walkway	Steel structure, one-storied, total 250.0 m^2
(4) Guard house	Reinforced concrete structure, one-storied, 4.0 m^2
Total floor area	6,893.8 m^2

Renovation of existing facilities:

(1) To divide OPD waiting room on the first floor with movable screens and wooden partitions.

(2) To relocate the social workers room in OPD consultation room, to arrange a new billing office, and to install new sunshade.

(3) To renovate the emergency office on the first floor and to aarange a new nurse station.

(4) To expand the office and store room adjoinig the pharmacy on the first floor.

(5) To install an airconditioning unit in the nurse station, to renovate ICU, and to add a lounge for patients on the second floor.

(6) To expand the dietary office in the kitchen on the first floor.

(7) To reform the supply office on the first floor into the office and bleeding room.

(8) To reform the cafeteria, kitchen, and medical record room on the first floor into the accounting office, the supply, medical record, and general record rooms, and to expand the stock rooms.

(9) To reform the personnel, accounting, and cashier's offices into the auditor's, general services' rooms, and cashier's office.

(10) To reform the conference room on the first floor into the personnel, accounting, and budget offices.

Equipment:

(1) Laboratory 1

Centrifugal separator, Incubator, Medical refrigerator, Constant-temperature water bath, Electrophoresis equipment, Eraser leader, Discussion microscope, Binocular biological microscopes, Binocular stereoscopic microscopes, Dark view microscopes, Mixer (vortex), Electronic balance (digital type), Microscopic projector, Central experiment platforms,

Preparation room
Electronic balance (digital type), Magnetic stirrer, Medical refrigerator, Constant-temperature water bath, PH meters, Timer, Clean bench (class 1)

(2) Laboratory 2

Incubator, CO_2 incubator, Centrifugal separator, Medical refrigerator, Inverted culture microscopes, Florescent microscope, Constant-temperature water baths, Microplate mixers, Mixers (vortex), Microplate shakers, Peristatic pump, Liquid nitrogen tanks, Fraction collector, Dryer shelves, Central experiment platforms

Clean bench room
Clean benches (class 1), Sucking-in pump units

(3) Central laboratory

Draft chamber, Iron coater, Spectrophotometers, Electrophoresis equipment, Densitometer, Ultracentrifuge, Cooling centrifuge, Swing type centrifuge, Micro centrifuge, Medical refrigerators, Constant-temperature constant-humidity chambers (prefabricated), Central experiment platform

(4) Sterilizing room

Autoclaves (logitudinal), Dry sterilizers, Pure water makers, Pipette washers, Micro pipette chip washer, Micro plate washers, Electric burners, Pipette dryers, Carts, Stainless wire baskets, Basins

(5) Epidimiology department

Multiple memory capacity personal computers, Accessory units, Color display, Graphic monitor, Disk dram unit, Printer (two kinds), AVR

(6) Conference and lecture rooms

Slide projectors (with a zoom lens), Slide projector alignment unit, Overhead projectors, Sound units, VHS video unit and monitor, Microphone unit (for 24 people), Roll up type screens, Mobile screen

(7) Printing room

Typewriters, Scanner, Mimeographic machine (printer), Copy machines, Overhead projector film maker, Binder unit

(8) Library

Personal computer (multiple memory capacity), Copy machine

(9) Administrations

Small drawing kit, Middle-sized microbus (for 24 - 28 people)

Construction methods and materials which are locally available will be used as much as possible. Some materials, however, have to be procured from Japan or other countries. Most of the equipment to be supplied under this project is not procurable in the Philippines and will therefore be imported from Japan. The equipment was selected with priority given to the compatibility with the existing equipment, easiness of operation/maintenance and accessibility to the after-sales servicing.

The time for completion of the construction will be twelve (12) months.

The budget for operating and administrating the RITM is allocated by the Department of Health. Apart from this, various research funds are granted from foreign governments and international organizations. The number of staff will be increased by 12 from the present 370. This increase is rather small compared with the scale of the project. The increase in the operation and maintenance expenses is estimated at 3.2 million pesos, or 0.07% of the total budget for the Department of Health in 1987 fiscal year. This amount is considered reasonable and within the range of appropriate budget allocation.

The RITM has contributed greatly toward the eradication of tropical infectious diseases through its research, with technical cooperation from Japan. Its capability has grown to such an extent that the Institute should now disseminate its medical achievements far and wide to ensure future development. However, as the Institute has developed far beyond the original expectations, the existing facilities are inadequate for even routine activities in research and training because of the very limited space and the deficiency in equipment.

In these circumstances, large improvements in the existing facilities can be assured if a new annexed training center and dormitories for trainees and the staff on night shift are built. This will increase the opportunities for the people involved in medical services to participate in the educational training, promote the eradication of infectious diseases, and thus contribute to the overall improvement of peaple's health. For the staff working in shifts, improved accommodations will help them maintain their good physical condition and enhance their on-the-job morale and lead to more efficient clinical activities.

The benefits expected from this project are as follows:

(1) Upgrading of training capability

Construction of a new training center will enable 451 participants to attend training each year, about three times more than those trained in 1985, thereby contibuting to an increase in manpower engaging in tropical medicine research. This will ensure that the research results of the RITM will be made available widely and rapidly, and will accelerate efforts to eradicate tropical infectious diseases, increase the working population, and lead to further economic development of the Philippines as a result of an improvement in the health care level.

(2) Improvement of working environment for RITM staff

Since a role of the RITM's clinical department is to supply data to its research departments and also act as a local medical center, it is vital that the RITM establish a 24-hour management system. This system is now performed at the sacrifice of the staff working under unsatisfactory working environment. When the 56 bed dormitory building is completed, the environment will be improved and further achievements will be produced in the medical services.

(3) Improvement of research and office work environments

When the new buildings are completed, some of the functions carried out in the existing facilities of the present RITM will be transferred to these new buildings. As a result, more space will become available for the administration and research departments which are presently limited in availbale space, thereby improving the working environment and enabling the RITM to cope with possible expansion of its operation in the future. When the renovation of the clinical department is completed which will enable patients to move more efficiently, more effective medical services will be offered to them and better research results will be expected.

It is therefore concluded that Japan's grant aid for the Project for Improvement and Expansion of the Research Institute for Tropical Medicine is highly significant and appropriate.

It is hoped that further cooperation and assistance will be given to the various training activities of the RITM by other countries and international organizations as well as Japan. The Government of the Philippines should allocate necessary budget for operating the RITM, so that the training center annexed to the Institute will be used most effectively.

Contents

CHAPTER 1

INTRODUCTION

CHAPTER I INTRODUCTION

In March 1981, the Government of the Republic of the Philippines established the Research Institute of Tropical Medicine (hereinafter "RITM") for the purpose of i) developing effective disease control and prevention strategies against so-called "preventable infectious diseases" such as diphtheria, pertussis, tetanus, and polio and, ii) developing and training the required personnel. The RITM, with a total floor area of 6,113m^2, was completed under the grant aid cooperation of the Government of Japan. Technical cooperation by the Government of Japan began in October 1980 and will be terminated in March 1988.

Since its establishment, the RITM has recorded various achievements thanks to its staff's enthusiasm and efforts and the instructions provided by experts dispatched. It has been highly valued and respected by the minister of Health and other sectors concerning health care. It has also played a leading role in the research of tropical diseases (including endemic ones) in the Philippines and an important part in health policy. Backed by the experience accumulated in the past, the RITM is exerting strenuous efforts to achieve greater results in research activities and to expand and strengthen the training department in recognition of the importance of diffusing these research results to third countries that suffer from the same diseases, as well as throughout the Philippines.

As the RITM has developed, the number of staff has increased (now 370), far more than that initially intended at the start of the project, while the number of patients has also increased. Thus, the RITM is confronted with problems in the administration of its facilities. To solve such problems, the RITM has expended efforts in the construction of an animal laboratory, addition of small annex buildings, and modifications to the layout of the building interior. However, these efforts have almost reached the limit, so that there are obstacles to research and training activities. The clinical department is a source of samples indispensable for research activities and contributes to the local health care. The number of staff has also been increased as the number of patients has increased. Shortage of space for medical care and in dormitory for on-duty staff, which has been rather poorly equipped since the start of operations, is now a serious problem and requires a drastic solution.

Under these circumstances, the Government of the Republic of the Philippines has requested the Government of Japan extended grant aid for construction of a training center and a dormitory building. The basis of the request is that the RITM intends to expand its present 10 training courses a year opened to outside trainees to 19 courses a year and to commence a third country training program in October 1987 under the Record of Discussions (R/D) exchanged between the Philippine and Japanese Governments in October 1986.

In response to the request, the Government of Japan entrusted the Japan International Cooperation Agency (JICA) to send the Basic Design Study Team headed by Mr. Hironao SUZUKI, Head of the First Basic Design Study Division, Grant Aid Planning and Survey Department, JICA to the Philippines from May 25 to June 14, 1987. The Team conducted a field survey including confirmation of the details of the request, discussion of the details of the project, confirmation of the project implementation system, and construction conditions.

This survey confirmed excellent performance of the RITM during the past six years and the earnest request from inside and outside of the Philippines for the diffusion of its research results. It also confirmed the importance of constructing a training center and a dormitory building for trainees and trainers, to modify some of the existing facilities, and to update equipment and instruments. This report has been completed based on the analysis and study of data and information collected in the field survey, study of the appropriateness of the project, drafting of the basic design, approximation of the project costs, and overall evaluation of the project.

The list of the survey team members, itinerary of the field survey, minutes of discussions, and other relevant data are contained at the end of this report.

CHAPTER 2

BACKGROUND OF THE PROJECT

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2-1 Health and Medical Facilities

2-1-1 General situation

Since 1975, the progress for better health and nutrition as well as the trend towards reduced family size have been negative. This is evidenced by the fact that both average life expectancy and child survival rates declined during the period 1975 - 80, as compared with the corresponding figures in the preceding five years. In 1980, life expectancy was averaged at 62 years of age and infant mortality rate was 63 deaths per 1,000 live births; one out of ten children died below the age of 5. The present situation therefore, may be an indication that the country, as a whole, lacks the expanding strength of human resources, in the face of the growing uncertainty of its worsening economy. The circumstances provide minimal encouragement for the improvement of average life expectancy since 1980, something which has to be given priority attention.

The economic unrest prevailing in the country has made conditions worse for the general public, children in particular, in terms of nutrition. For instance, the proportion of pre-schoolers weighing less than 75% of the standard weight-for-age shows a rise to 21.6% in 1985 compared to 17.2% in 1982.

The shift to smaller family sizes has been slowing down. The drop in the marital fertility in recent years may be ascribed to the decreased proportion of reproductive women as a result of the governmenbt's campaign on family planning and birth control: a decline from 37% in 1978 to 32% in 1983.

Evidently though, there have been considerable efforts exerted at the administrative level for the improvement of health, nutrition and family planning, the same has yet to be fully unified and strengthened. Each governmental agency is expected to operate in synergy in pursuit of similar aims and objectives. By this, results achieved could be more effective despite limited resources of both time and money.

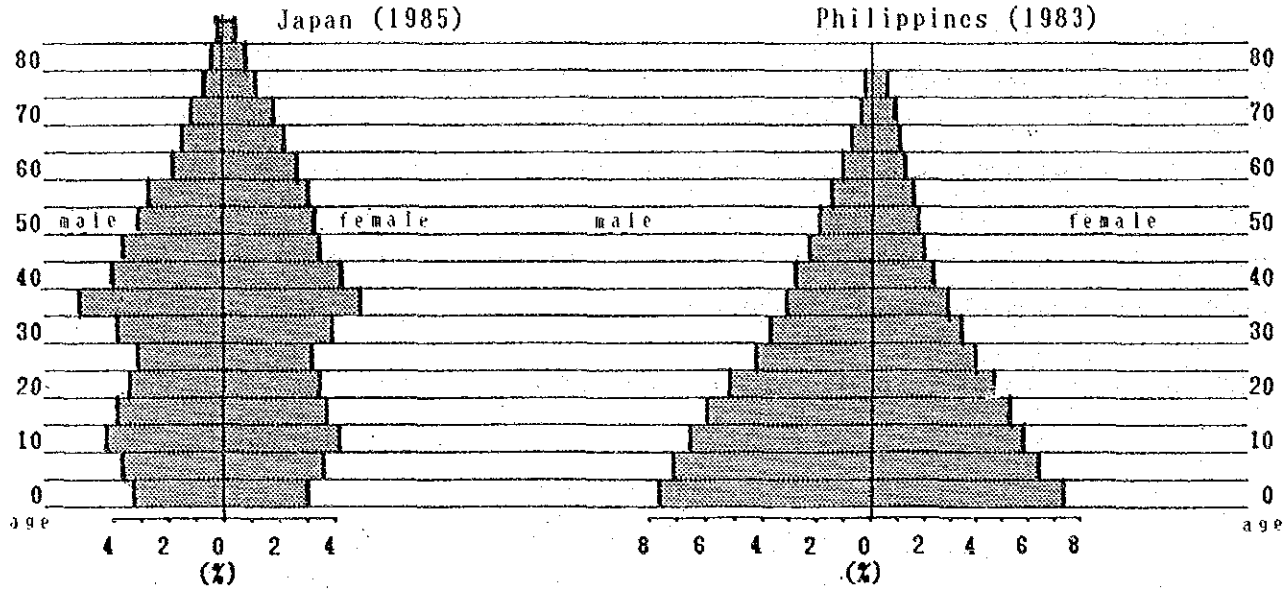
The provision of health, nutrition and family planning services was not very extensive due to the present budgetary constraints of the government. The funds assigned to those proportions were restrained below 5% of the total outlay during the period 1970 through 1985. Within this limitation, the priority of budgetary spending has been extended to the more urgent medical treatment in addition to grograms on health promotion and preventive measures against disease.

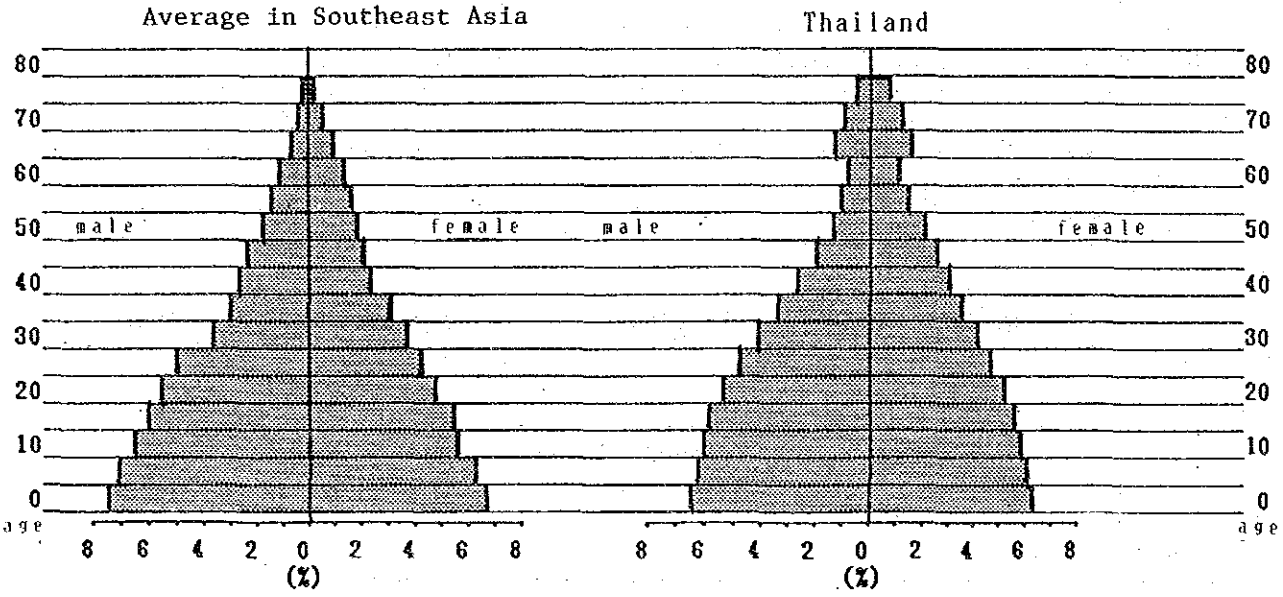
It is towards this endeavor that the newly established research institute, the RITM, has been addressing its programs. The present and prospective researches have been formulated with the end view of developing effective and feasible disease control measures, specifically against infectious tropical diseases, which are the leading causes of morbidity and mortality in the country.

2-1-2 Composite pattern of population

The population in 1983 of the Republic of the Philippines was 52,055,000, which may be broken down by age stratums as shown in a form of pyramid.

Population pattern





As can be seen from the preceding figure, the nation's population structure consists of predominently younger generation in comparison to the aged, the typical structural features of developing countries. The pyramid also reflects a high infant mortality rate with survival occurring by natural selection.

2-1-3 Health and medical standards

The Philippine health and sanitary conditions are still at a low. This can been seen in Tables 2-1 and 2-2, when the birth rate and mortality in the Philippines are compared with those of other countries. However, from the trends seen in Fig. 2-2, the high birth rate and high mortality rate have been on the decline since 1975. As the government health and medical care policy is promoted, the Philippine health and sanitary conditions should progressively improve.

Table 2-1 Birth Rates in the Philippines and an International Comparison

(Per 1,000 persons)

	1970	1975	1976	1977	1978	1980	1984
The whole Philippines	26.2	29.1	30.1	30.3	30.5	a)33.9	b)32.3
Metro Manila	(34.6)	(31.8)	33.6	36.3	34.4	-	-
Japan					14.9	13.6	12.5
Average in Southeast Asia						a)31.5	b)29.1

Table 2-2 Death Rates in the Philippines and an International Comparison

(Per 1,000 persons)

	1970	1975	1976	1977	1978	1980	1984
The whole Philippines	6.4	6.4	6.9	7.0	6.5	a)7.7	b)6.9
Metro Manila	(7.3)	(6.8)	7.8	9.1	7.2	-	-
Japan					6.1	6.2	6.2
Average in Southeast Asia						a)11.3	b)9.1

* a) The U.N estimates at 1975 - 1980 average
  b) The U.N estimates at 1980 - 1985 average
  Data: U.N Statistical Manual
  Philippine Statistical Yearbook 1982

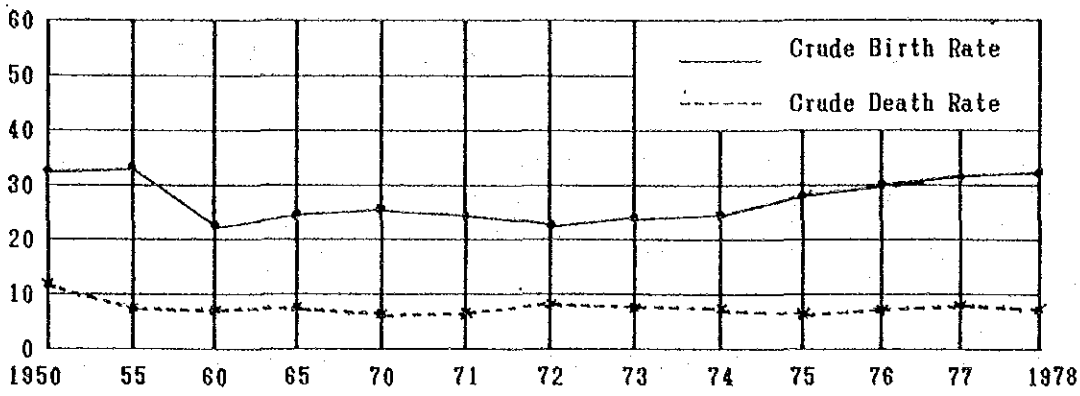


Fig. 2-2 Trends in Birth & Death Rates

According to Table 2-3 which shows the number of deaths and mortality by sex and age in the Philippines in 1985, the mortality of infants below the age of four accounts for 37% of the total. Thus, this shows that the medical care facilities at the lower income class have not improved.

Table 2-3 Number of Deaths by Sex and Age (1983)

Age	Number			Ratio			Metro Area		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
Total	297,034	169,332	127,702	100.0	100.0	100.0	40,468	23,732	16,736
1 or less	73,640	41,837	31,803	24.8	24.7	24.9	11,823	6,729	5,094
1 - 4	36,266	19,403	16,863	12.2	11.5	13.2	4,165	2,197	1,968
5 - 9	10,773	6,113	4,660	3.6	3.6	3.6	935	526	409
10 - 14	5,592	3,221	2,371	1.9	1.9	1.9	582	313	269
15 - 19	6,908	4,261	2,647	2.3	2.5	2.1	869	548	321
20 - 24	8,968	5,943	3,025	3.0	3.5	2.4	1,436	1,021	415
25 - 29	8,667	5,685	2,982	2.9	3.4	2.3	1,409	966	443
30 - 34	7,932	4,996	2,936	2.7	3.0	2.3	1,177	788	389
35 - 39	8,672	5,377	3,295	2.9	3.2	2.6	1,109	718	391
40 - 44	9,452	5,963	3,489	3.2	3.5	2.7	1,321	875	446
45 - 49	9,907	6,219	3,688	3.3	3.7	2.9	1,483	949	534
50 - 54	11,199	7,023	4,176	3.8	4.1	3.3	1,677	1,107	570
55 - 59	11,768	7,372	4,396	4.0	4.3	3.4	1,876	1,234	642
60 - 64	15,538	8,960	6,578	5.2	5.3	5.1	2,107	1,297	810
65 - 69	15,002	8,706	6,296	5.1	5.1	4.9	2,248	1,370	878
70 - 74	14,374	7,773	6,601	4.8	4.6	5.2	1,934	1,045	889
75 - 79	14,524	7,934	6,590	4.9	4.7	5.2	1,656	863	793
80 - 84	8,707	3,998	4,709	2.9	2.4	3.7	951	447	504
85 or more	17,758	7,684	10,074	6.0	4.5	7.9	1,507	610	897
Others	1,387	864	523	0.5	0.5	0.4	203	129	74

Table 2-4 Trend on Health Indicators

Indicators	1978	1979	1980	1981	1982	1983	1984
Crude birth rate	33.5	32.4	32.3	32.1	31.9	31.7	31.6
Crude death rate	8.5	8.4	8.3	8.1	7.9	7.7	7.6
Death rate for babies	67.9	65.5	63.2	61.9	60.6	59.3	58.0
Death rate for mothers	1.1	1.0	1.0	0.9	0.9	0.8	0.8
Death rate by infectious diseases	254.8	249.3	243.8	239.8	235.9	232.0	227.0
Death rate for people over 50	38.5	39.3	40.2	41.2	42.3	43.4	44.6
Average life expectancy	60.9	61.2	61.6	61.9	62.2	62.5	62.8
National population (1,000)	45,997	47,157	48,317	49,534	50,751	51,968	53,185

(Source: Ministry of Health)

2-1-4 Disease structure

The causes for diseases in the Philippines are shown in Table 2-5 according to the statistics in 1983, almost all these diseases are infectious diseases.

Table 2-5 Cause of Disease (per 100,000 persons)

Cause of disease	1983 No. of patients	1978-1982 (average) No. of patients
1) Upper respiratory tract disease and asthma	678.1	483.9
2) Diarrhea disease	529.2	451.8
3) Influenza	498.6	440.7
4) Pnuemonia	237.5	243.8
5) Tuberculosis disease	204.5	233.1
6) Malaria	105.7	79.5
7) Bacillary dysentery	90.8	59.9
8) Measles	84.1	60.2
9) Malignant neoplasm (tumor)	49.7	48.7
10) Whooping cough	33.4	33.0

According to the statistics of 1983, an increase in all diseases except Nos. 4 and 5 was shown, from the average of the 5 years between 1978 and 1982.

The causes of death in the Philippines are in Table 2-6 as follows:

Table 2-6 Death Rate and Causes (per 100,000 of population)

Causes	Death rate in 1983	Death rate 1978 - 1982 (average)
1) Pnuemonia	93.6	(94.9)
2) Heart disease	62.6	(64.6)
3) Tuberculosis	55.0	(56.6)
4) Disease of vascular system	51.9	(42.8)
5) Malignant Neoplasms	34.6	(32.6)
6) Diarrhea	29.0	(12.2)
7) Measles	17.9	(12.7)
8) Avitaminosis & other nutritional deficiency	13.6	(15.5)
9) Accidents	12.2	(20.2)
10) Nephritis, Nephrotic Syndrome Nephrosis	9.3	(8.9)

Deaths caused by geriatric diseases included No. 2, No. 4 and No. 5.

In Table 2-6, the three largest causes of death; pneumonia, cardiopathy and tuberculous; account for approx. 60% of the total. In comparison, in the Japanese three largest causes of disease, there are malignant neoplasm, cardiac disease and cerebral vessel disease, which account for 60% of the total deaths, the influence of different living surroundings makes a significant difference.

The cause of death of infants is shown in Table 2-7. For infant, the three main causes of death are pneumonia, enteritis, and nutrition deficiency which account for 43.5% of the total. This indicates that their death results from the low-levels of nutrition, sanitation and the low general living conditions.

Table 2-7 Number of Baby Deaths by Disease

Diseases	1972 ~ 1976 (at 5-year average)			1977		
	No. of deaths	Death rate	Babies' death rate	No. of deaths	Death rate	Babies' death rate
Bronchial pneumonia	17,200	15.3	25.5	18,070	13.4	23.7
Diseases of digestive organs	5,801	5.1	8.6	7,862	5.8	10.3
Malnutrition	6,599	5.9	9.8	7,354	5.5	9.6
Anoxia	3,937	3.5	5.8	4,875	3.6	6.4
Tetanus	2,916	2.6	4.3	2,750	2.0	3.6
Congenital heart diseases	2,351	2.1	3.5	2,636	2.0	3.5
Bronchitis & Pulmonary emphysema	2,726	2.4	4.0	1,944	1.4	2.5
Asthma	1,375	1.2	2.0	1,580	1.2	2.1
Measles	910	0.8	1.3	1,503	1.1	2.0
Suppurative	703	0.6	1.3	985	0.7	1.3

2-1-5 Present status of tropical medicine and infectious diseases in the Philippines

In many tropical countries there are a number of diseases peculiar to local climatic conditions or natural environment. Some typical examples are dengue fever in the Philippines and yellow fever in Latin America or Africa, both of which are a result of a virus carried by various wild animals. Furthermore, malaria caused by a parasite being transmitted from one person to another by the bite of anopheline mosquitoes and sleeping sickness transmitted by trypanosome through flies carrying the virus are still rampant and a menace to mankind.

In the Philippines, as shown in Table 2-7 which indicates the structure of diseases, tropical epidemics are regarded as the main source of many diseases. For example, diarrhea is caused by many bacteria, viruses and parasites. The morbidity rate of diarrhoea disease is, according to 1983 statistics, at a ratio of 620 persons (total of diarrhoea cases and dysentery cases) per 100,000 of population.

Malaria, one of many tropical diseases, has a high morbidity rate with a ranking of six. Malaria is generally not always fatal and can be cured if proper treatment by a doctor has been administered. However, once malaria affects a large group of people, it would be difficult to control it. In the Philippines it may be difficult to take appropriate measures against such diseases in their initial stages especially in areas other than Metro Manila or other large cities. This is the very reason for an increase in the morbidity rate to its highest level across the country. These tropical diseases can be prevented or eliminated by improving the living environment and by educating the people on public health. However, under the present circumstances it would be difficult to push forward these measures quickly.

In the meantime, chronic infectious respiratory organ diseases, such as tuberculosis, pnuemonia, bronchitis, and emphysema are increasing rapidly in number. As noted in Table 2-6 death rate and causes, the annual average figure was less in 1983 than in the preceding year. However, the rate of decrease is only slight and does not reflect the success of countermeasures that have been taken to prevent those diseases. The morbidity rate of infectious diseases, especially acute respiratory diseases, greatly affects younger people and this is apparently due to a lack of public health awareness and sanitation and may be a direct result of a lack of substantial and nutritious food, communities isolated from medical care or a lack of vaccination, etc. Earlier detection and medical care should be the most important factor to prevent the widespread outbreak of diseases at all times. Therefore, measures to enlist qualified professionals and staff in the medical services and to increase or expand the medical facilities are in urgent need of realization.

2-1-6 Medical care facilities

The following summarizes the present status of medical facilities within the Manila Metro Area and nationwide, based on a recent survey.

Table 2-8 Number of Hospitals and Beds by Region

District or region	Hospitals	Beds	Population in 1983	Ratio of beds to population
Nationwide	1,664	76,653	52,055,370	1:679
Metro Manila	133	19,183	6,540,181	1:341
1 Ilocos Region	144	5,562	3,754,390	1:675
2 Cagayan Valley	119	3,030	2,398,940	1:792
3 Central Luzon	189	6,675	5,195,858	1:778
4 Southern Luzon	223	7,702	6,703,443	1:870
5 Bicol Region	150	4,987	3,744,151	1:752
6 Western Visayas	77	4,951	4,866,120	1:983
7 Central Visayas	88	6,077	4,031,506	1:663
8 Eastern Visayas	67	2,801	2,963,455	1:1058
9 Western Visayas	75	2,986	2,734,070	1:916
10 Northern Mindanao	135	4,557	3,011,859	1:661
11 Southern Mindanao	184	5,272	3,644,840	1:691
12 Central Mindanao	80	2,875	2,466,559	1:858

Medical care facilities in Metro Manila make up 8% of the total number of hospitals in the Philippines and 25% of the total number of beds. Thus it is assumed that most of the large hospitals are located in Metro Manila. In addition there are more beds in public hopitals than in private hospitals. This indicates that public hospitals are also centralized in Metro manila.

The patients who use public hospitals belong mainly to the low income bracket. The standard family has 2 children and an annual incoem of 21,600 pesos or less (monthly 1,800 pesos). Families below this standard are authorized as charity patients. However, in 1985, the annual average income per family was just 19,993 pesos (approx. JYen 160,000); families with an annual income of less than 40,000 peses (approx. JYen 320,000) account for 80% of the total families. Judging from this , the number of families which can utilize the private hospitals, in which 100% of the treatment expenses must be paid by the patients, is limited.

Basically, only the consultation fees of first visit and return visit for the charity patients are free of charge. Medical care materials and medicine fees are not free of charge.

The patients who are not treated as charity patients must pay the aforementioned standard fee. In addition, the medicine fee, injection fee, intravenous drip infusion and other medical material cost must be borne by each non-charity patient.

Table 2-9 shows the number of medical health care facilities controlled by the Ministry of Health. The Philippine medical care facilities are composed mainly of smaller regional hospitals (rural health unit), regional health centers (Barangay health station), and main general and speciality hospitals. According to this table, the number of medical care facilities increas3d in the 3 years between 1980 and 1983. However, since 1983, it has remained at the same level.

Table 2-9 Health and Medical Facilities under the Jurisdiction of the Department of Health

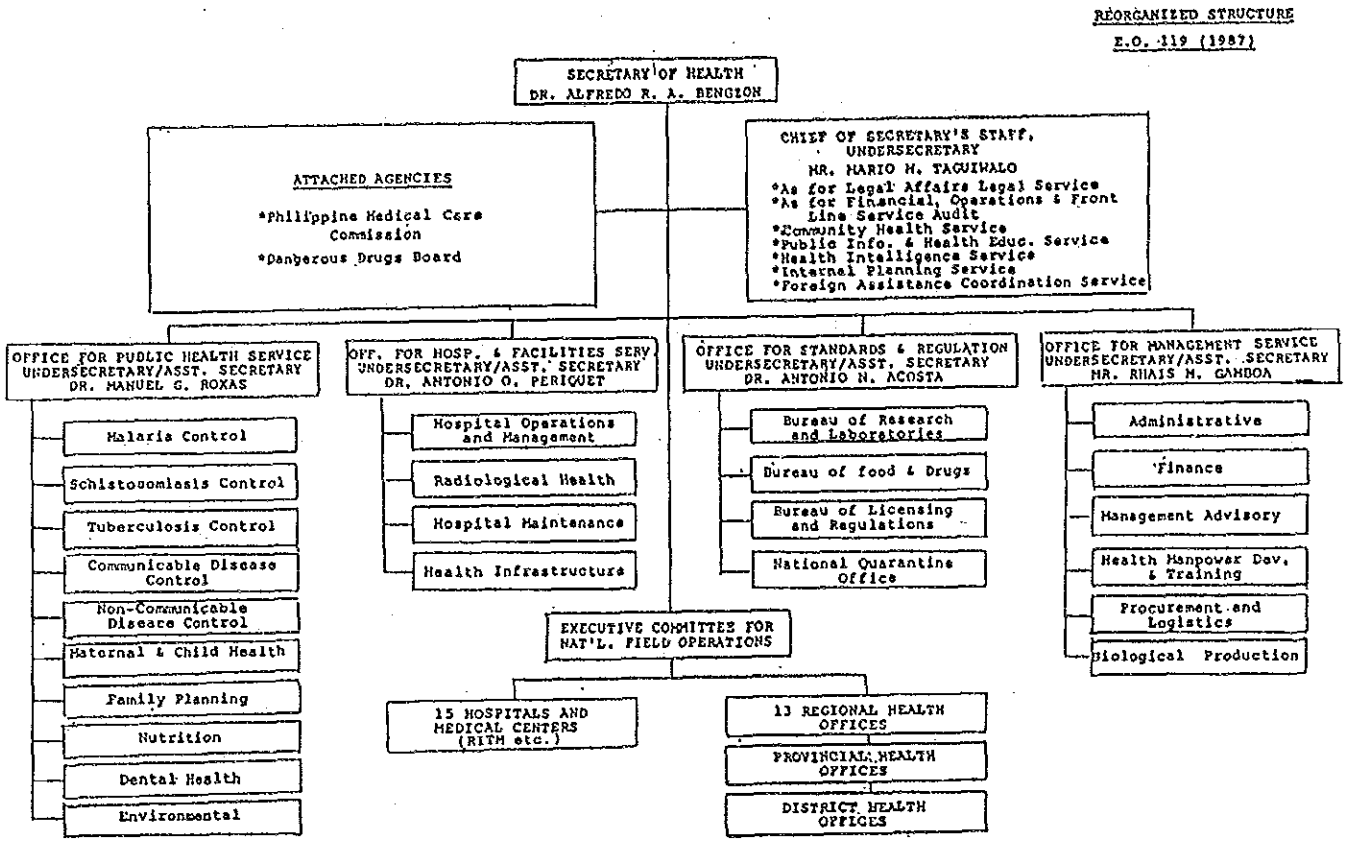
Facilities	1980	1983	1984
Total	12,314	13,219	13,192
Hospitals	345	369	367
Rural health units	1,991	1,991	1,991
Barangay health stations	7,353	7,991	7,991
Family plan clinics	1,743	1,842	1,842

The trends in the number of hospitals and beds in the Philippines should also be examined. The number of Public hospitals remain unchanged at about 350 since 1975, while the number of private hospitals rose sharply by 238 in 1979. This increase in the total number of hospitals did not reflect any proportional increase in total number of beds, which was still a low 4,700. This suggests that hospitals were built with only 20 beds each. The number of beds per 10,000 population declined from 17.8 beds per 10,000 at the peak in 1977 to 14.7 beds in 1980. The corresponding ratios for Thailand, Burma and Indonesia are 14, 7.8 and 5 respectively. It is obvious that there exists a striking gap when compared with the Japan's record of 122 beds per 10,000 population in 1984.

2-1-7 Administration system on health and medical services

The administrative agencies for health and medical services in the Republic of the Philippines are organized under the Department of Health as shown in the Chart hereunder.

Chart



The Research Institute for Tropical Medicine (RITM) is under the control of a divisional executive board, and ranks as one of the core agencies among the 15 principal hospitals and the Metro Medial Center. Its activities cover a wide range of functions including research on tropical medicine and educational training for the research staff. Efforts are being made to eradicate tropical diseases in close coordination with local health units, not to mention the cooperation with the 15 principal hospitals.

The RITM funds are furnished on the government-to-government grant basis, in addition to the national budgetary funds appropriated out of the budget for health and medical administration of the Government of the Republic of the Philippines.

The Tropical Medicine Research Fund established in November 1984 provides an additional support to the RITM. Through this institution, funds are available for initiation of research activities on dengue fever, AIDS and Hansen's disease by courtesy of various foreign donors, such as the U.S. National Academy of Science, Edna McConnel Clark Foundation, International Development Research Center and the Mission Administration Fund of the Canadian Government, etc. It is expected that this financial support will continue to supplement the funds provided by the very limited national budget.

2-1-8 Associated organizations and their activities

The San Lazaro Hospital and the U.P. Institute for Public Health are the major research institutions, in addition to the RITM, as research and training facilities for epidemicology. These institutions cooperate closely together and have a channel of communication between them for exchange of research information.

San Lazaro Hospital:

This provides facilities for the training in the clinical care of infectious diseases through a residency program.

The hospital, established in the 16th century, presently functions as a clinical care unit which deals mainly in infectious diseases and provides 500 to 600 beds, equipped with ICU apparatus. This facility, the equipment and apparatus is mostly outdated, resulting in much needed improvements to comply with the need to create a new medial environment.

The ORT Guidance Center as a result of a U.S. grant aid was constructed for use as a clinical care unit for the treatment of diarrhoea. Although small it is carefully designed with full consideration given to the patients' well being. Future medical achievements in this center are expected. Training of medical care is exercised in the clinical field.

Institute of Public Health, U.P.:

This provides training courses in public health; it includes bachelor and master's degree courses.

This institute serves as the main organization for policy-making on public health guidelines and administration on a nationwide scale, playing a key role as the basic educational institute for physicians and other professionals involved in the public health services.

The institute was established by foreign aid (the Rockfeller Fund of the U.S.A.), and has a fifty-year history as the leading research institute for public health. Although only a few of the existing facilities, equipment and apparatus are up-to-date in terms of design and sophistication, they are all available when required for educational training exercises. The building now in use has been retained and upgraded. Therefore, problems arise as to the adaptability of these facilities for the convenience of staff involved in research activities.

Because of the geographical environment of the Philippines, the institute's parasite laboratory is highly reputed and some graduates are now internationally noted researchers.

The institute is closely associated with the RITM and in particular, many of the trainees in the institute receive a post-graduate course at the RITM and many executives of the RITM are graduates from this institute.

RITM:

This provides facilities for the research and training of physicians on clinical study, and basic research on preventive medicine against infectious disease.

The three major institutions coordinate closely with similar research institutions both at home and abroad, with particular efforts being made to promote the spread of professional knowledge in the fields of the public health and bio-medicine. Efforts are also being made to enhance the organizational functions of the Department of Health. A training program is being developed and surveillance on diseases and investigation on epidemics carried out. The results of this research and study are provided to governmental policy-makers, administrators, public health service officers and scholars.

2-2 National Health & Medical Plan

The National Health & Medical Plan was devised as part of the Mid-term National Development Plan (1987 - 1992) of the Republic of the Philippines, with the aims of improving the health, sanitation and welfare of the people. The plan envisages betterment of regional health and sanitation, eradication of diseases, expansion of medical facilities and systems, improvement of sanitary environment and increase of physicians and medical personnel.

2-2-1 Objectives of the National Health and Medical Care Plan

The following 3 goals for the National Health and Medical Care plan have been set up by the Philippines:

- Improvement of health, medical care and nutritional conditions of the Philippine people
- Improvement of medical care services for all people by the year 2000 through primary health care (hereinafter referred to as P.H.C.) facilities
- Promotion of family planning for an improved family environment

2-2-2 Schedule of the Goals

In order to achieve these goals the Philippine Government is aiming to improve the P.H.C. plan, health impact plan, meal/nutrition plan, family planning, etc. and to penetrate these plans into the local areas. As a result, the index related to the health and medical care by 1992 is forecast as follows:

Items	1987	1992
Average life	63.7 of age	65.2 years
Neonatal mortality rate	54.2/1,000 persons	47.8/1,000 persons
Infact mortality	4.7/1,000 persons	3.7/1,000 persons
Crude mortality	7.6/1,000 persons	7.0/1,000 persons
Birth rate	31.3/1,000 persons	28.6/1,000 persons
Population growth rate	2.41%	2.21%
Nutrition improved Target	1,784 kcal	1,950 kcal

2-2-3 Policy

For efficient and effective execution of this national health and medical care plan, the Philippines have set up the following policy:

1) In order to effectively execute health, nutrition and family planning, this policy is intended for low income bracket people; children, women, laborers, veterans and aged people.

   a. Countermeasures for diarrhea, tuberculosis, malaria, schistosomiasis and epidemic disease are to be strengthened, thereby decreasing morbidity and lengthening average life.

   b. The clinic system organization is disseminated, thus producing a widespread effect a tthe minimum expenditure.

   c. The health insurance institution is developed, thereby reducing medical care expenses borne by patients.

2) Harmony within health, nutrition and family planning sectors and coordination with other sectors is achieved.

   a. By improving network service at the regional level, the coordination of the sectors is accomplished, thus producing a greater effect.

   b. The clinic system is utilized, making it possible to meet the regional medical treatment needs effectively.

   c. By activating sector to sector exchange, service efficiency is achieved.

3) Responsibilities are clearly shared for health, nutrition, and family planning.

4) Usage of intrinsic resources and technology is enhanced.

5) Cooperation with the private sector is strengthened.

6) Preventive medicine is utilized and improved nutrition is realized.

a. This project is to pinpoint diseases such as as diphteria, whooping cough, tetanus, poliomyelitis, measles, and tuberculosis, by improving water supplies, taking proper measures to better sanitation and implementing an action programm. This should encourage the field of preventive medicine.

7) Mother and child health is improved, promoting and strengthening family planning.

a. Infant and mother morbidity is reduced.

8) The position and role of women is strenthened.

a. The decrease in birthrate seems to be helpful in improving the health of mothers as well as infants.

b. The reduced time and labor resulting from smaller families encourage women to participate in regional activities and support them for improvement of their positions.

9) Environmental sanitation and labor safety rules are improved.

a. Environmental sanitation is improved by providing safe supply of water; effective treatment of domestic, agricultural and industrial wastes; industrial hygiene; countermeasures for the outflow of pollutants; and the supply of sanitary toilet facilities.

b. For improvement of the laborer's health, safe working conditions are to be insured and periodical health examinations are made mandatory to help prevent industrial diseases.

10) Increased governmental funds are distributed to health, nutrition, and family planning fields.

a. Development of a better relationship between the central and local governments is achieved, to activate and coordinate the planning.

11) The implementation of the Planning is promoted by utilizing technology and information.

12) Manpower development is promoted.

13) Improvement of services required for health, nutrition and family planning.

Improvement of the PGH, which is associated with U.P. Manila and of which the OPD is one department, contributes significantly to the overall national health and medical care plan.

Since the RITM makes its great contribution in the research activities in the field of measures against infectiuns diseases (referred to in the foregoing items of 1), 6), 11) and 12) out of the total of 13 items), it is very useful and significant for encouragement of implementation of this program to give adequate strength to the organization of RITM and its activities.

2-3 Foreign Assistance for Health and Medical Services

Japan and the United States are two main countries extending aid and assistance to the Republic of the Philippines, followed by West Germany and Australia. Whilst the assistance from Japan is occupied by a larger share of credit finance rather than grant-in-aid, assistance from the other countries is extended mainly on the basis of grant-in-aid. In the case of West Germany, most of grant-in-aid fund is appropriated for technical co-operation. The total value of the projects financed by the yen-credit amounted to about 490 billion yen as of September 1986 (on the E/N basis). The cumulative total of the grant funds reached about 55.1 billion yen as of September 1986. However, for economic cooperation provided to health and medical services, the granting of funds is allocated at a considerably small proportion than grants to other sectors. The following Table summarizes the number of projects and the total grants.

	No. of projects	Sum (Million dollars)	
		Grant aid	Loan
1. U.S.A.	2	46.3	27.93
2. IBRD/World Bank	7	-	78.53
3. ADB	3	-	1.82
4. Japan	7	38.96	-
5. UNICEF	1	10.0	-
6. WHO	1	4.8	-
7. Canada	1	5.0	-
8. Others	1	118.0	-
Total		223.06	108.28

Projects financed by foreign aid, excluding Japan, include, financing the primary health care project, assistance for preventive measures against schistosomiasis, population growth control plan and the vaccination program. These projects have yielded considerable achievements with particular emphasis being placed upon environmental health care and family planning.

The major projects financed by Japan's grant aid are represented by the construction of the Research Institute of Tropical Medicine (1979), renewal plan of equipment/apparatus in rural hospitals (1984), equipment and material supplies to the National Cancer Center (1984) and construction of the Foods & Drugs Test Institute (1986). All financial and technical assistance from Japan is highly esteemed among the Philippine people involved and has contributed toward the improvement of the health and medical care research and training. The purpose of this project, as requested, for the planned construction of an annexed training center to the RITM, is to research and investigate the infectious diseases on the respiratory organs and other infectious diseases related to tropical zone, both of which show a high fatality rate, and also to educate all persons engaged in this field. The project now attracts the attention and interest of the Department of Health and other relevant governmental agencies.

CHAPTER 3

PRESENT STATUS OF THE RESEARCH INSTITUTE FOR TROPICAL MEDICINE

CHAPTER 3 PRESENT STATUS OF THE RESEARCH INSTITUTE FOR TROPICAL MEDICINE

3-1 Organization and Research Activities

The Research Institute for Tropical Medicine (RITM) was established in May 1981 as one of the grant aid cooperation projects of the Government of Japan. In the organization of the Ministry of Health, the Government of the Philippines, it belongs to the Hospital and Medical Center Section under the Executive Committee for National Field Operations directly controlled by the Minister of Health. (See Fig. 2-3 Organizational Chart of the Ministry of Health.)

According to the Presidential Decree, the principal objectives envisaged in the establishment of the RITM are as follows:

1. To undertake research activities in the diagnosis, control, and prevention of pneumonia and tropical diseases that are major causes of mortality and morbidity in the Philippines.
2. To conduct clinical trials aimed at better understanding and control of tropical diseases.
3. To conduct regular training courses for medical and paramedical personnel in the control of common tropical diseases in the country.
4. To provide high-quality tertiary care to both in-patients and out-patients suffering from tropical diseases included within the scope of the RITM's research activities.
5. To participate in the technical cooperation program with the Japan International Cooperation Agency in research activities in the diagnosis, control, and prevention of pneumonia and tropical diseases.
6. To arrange for the participation of the national Science Technology Authority and the U.P. System Health Sciences Center in the planning and implementation of the programs of the RITM.
7. To perform such other related activities as may be assigned by the Ministry of Health.

To pursue the above-mentioned objectives, the major thrust of the RITM are the following:

1. Strengthening research manpower

The RITM should strengthen its cadre of researchers with expertise particularly in the fields of immunology, microbiology, epidemiology, pathology, parasitology, and entomology. This should be undertaken through grants and scholarships.

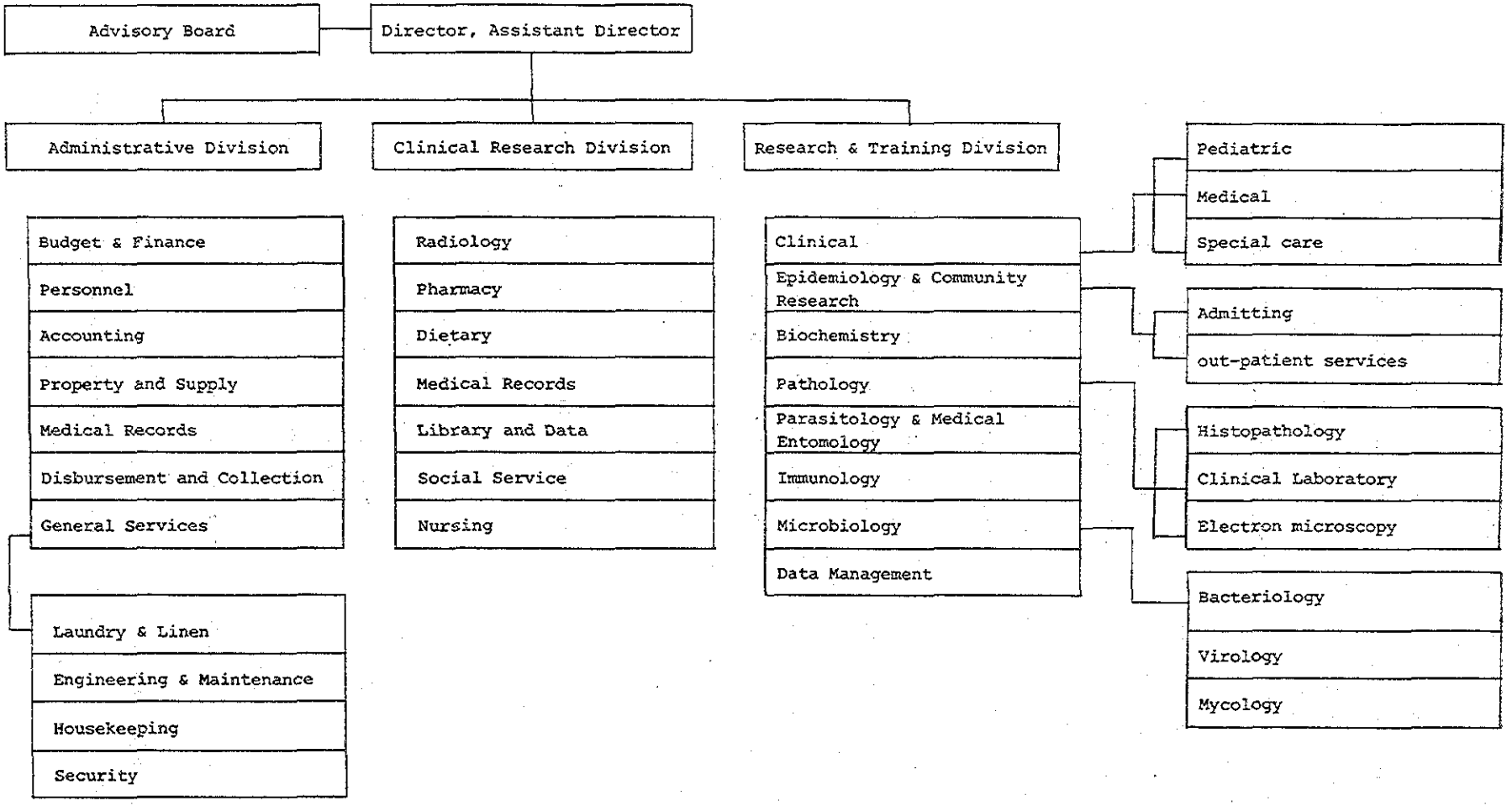
2. Expanding research programs

For the coming years, research projects should be continued on prevalent tropical diseases which are of public health importance and are major causes of mortality and morbidity.

3. Extending the health service network

Extension of health delivery network should start initially in the municipality of Muntinlupa, in coordination with the Metro Manila Commission, Muntinlupa Health Office, and private practitioners. The undertaking should provide more effective delivery of health services by instituting a Primary Health Care (PHC) system, while at the same time, providing a more receptive capacity for field researchers.

Fig. 3-1 Organization Chart of the Research Institute for Tropical Medicine



4. Developing a health information system

Recognizing that research output, unless immediately utilized and applied, will be wasted, the RITM should attempt to reach as wide an audience as possible.

5. Establishing and strengthening institutional linkages

The RITM recognizes the functions of university and training institutions as places of learning, domestically and abroad, and the importance of the experience to be obtained at such places, with the end view of enhancing its own capability and resources, as well as contributing to the collective efforts to combat diseases and to mankind's aspiration for a better quality of life.

The RITM is composed of three divisions: Administrative, Clinical Research, and Research and Training. The Clinical Research Division includes out-patient services and a clinic with 50 beds. (See Fig. 3-1 Organizational chart of the RITM.) Staff allocated to these three divisions was 192 at the time of establishing the Institute, but it has been increased as shown in Table 3-1 below. The number of staff has been increased especially in the Clinical Research and Research and Training Divisions.

Table 3-1 Changes in staff allocated to divisions

	1980	1981	1982	1983	1984	1985	1986
1) Administrative	108	109	111	111	97	89	88
2) Clinical Research	37	95	95	95	95	110	133
3) Research and Training	47	88	93	117	105	113	149
Total	192	292	299	323	297	312	370

The objectives of each division are as follows:

1) Administrative Division
   - To participate in the formulation of overall Institute policy and program planning.

- To be responsible for the preparation of the annual budget. The Administrative officers should represent the Director with full authority on budgetary matters before the budget hearings of the Ministry.
- To provide the Institute with economical, efficient, and effective services relating to budget and finance, personnel, medical records, engineering and maintenance, linen and laundry, and property and supplies.
- To supervise and control the division in the Administrative Service.

a. Budget and Finance Department
   - To prepare work and financial plans.
   - To collate final budgetary proposals of the different component units of the Institute.

b. Personnel Department
   - To advise the Director on personnel policy and administration.
   - To develop and administer a personnel program which should include selection and placement, classification and salaries, career and employment development, performance rating, employee relations, and welfare services,
   - To act on all matters concerning attendance, leave of absence, appointments, promotions, transfers, and other personnel matters.
   - To maintain personnel records and statistics.
   - To perform such other functions as may be provided by law.

c. Accounting Department
   - To control all the revenues, expenditures, assets, and other funds in an appropriate processing system.
   - To take procurement procedures.
   - To effect internal auditing.
   - To prepare financial allocation reports, financial report on debts, and other necessary reports.

d. Property and Supply Department
   - To provide policy guidance on the procurement and storage of supplies in accordance with the government standards.

d. - To procure, store, and distribute supplies and equipment of the Institute.
- To conduct periodic inventories of supplies and property of the Institute.
- To perform such other functions as may be provided by law.

e. Medical Records Department
- To encode and record the management of tropical diseases in clinics.
- To prepare statistical reports for the use of Management and for other uses.

f. General Services Department

* Laundry and Linen Section
- To provide adequate and clean linen to patients and staff.
- To minimize deterioration of, to prevent losses of, and to avoid spreading infection through linen.
- To maintain records and to conduct inventory control.
- To prepare periodic reports.

* Engineering and Maintenance Section
- To maintain, repair, and operate all equipment and machinery.
- To maintain and repair the below-mentioned items:

  Plumbing
  Steam and hot water supply
  Electrical system
  Fire detection, prevention, and fighting devices and methods
  Painting
  Communication and mechanical message system

* Housekeeping Section
- To conduct ordinary maintenance, gardening, and safety measures.
- To dispose of waste and garbage and to conduct cleaning and hygienic maintenance.

* Security Section
- To engage in maintaining security of the facilities.

2) Clinical Research Division

- To provide high-quality tertiary care to both inpatients and out-patients suffering from tropical diseases.
- To coordinate with the Research and Training Division in research activities requiring patients for the study of tropical diseases.
- To conduct clinical trials aimed at the better understanding of tropical diseases.
- To coordinate with local international agencies in programs directed at prevention and control of tropical diseases.
- To maintain effective relationship between the nursing service and other departments of the RITM.

a. Radiology Department
   - To provide routine diagnostic radiological services to patients.
   - To participate in the training and research programs of the RITM.

b. Pharmacy Department
   - To render efficient professional services in the provision of safe and appropriate drugs to patients.
   - To develop and maintain an inventory of drugs and medicine.

c. Dietary Department
   - To supply different kinds of appropriate diets for patients and personnel.
   - To select, procure, and store food and other necessary supplies.
   - To prepare and distribute food.
   - To maintain the cleanliness and safety of the department.

d. Medical Records Department
   - To plan, develop, install, and direct a medical record management system for the creation, maintenance, control, and disposition of medical records.
   - To prepare vital records of births, stillbirths, deaths, and other pertinent reports.

e. Library and Data Center Department

- To provide research background materials through the subscription of medical journals relevant to the study of tropical diseases.
- To maintain correspondence with institutions including the World Health Organization and the Canada Research Center (CRC) to ensure acquisition of periodic bulletins relevant to tropical diseases.

f. Nursing Department

- To provide the best attainable nursing care to patients.
- To participate in the selection, direction, and control of personnel and their organization.
- To maintain good relationship with other services.

3) Research and Training Division

- To undertake research activities in the diagnosis, control, and prevention of tropical diseases that are major causes of mortality and morbidity in the Philippines.
- To participate in the technical cooperation programs with the Japan International Cooperation Agency in research activities on the diagnosis, control, and prevention of tropical diseases.
- To assist the agencies of the Ministry of Health in research and investigation of those tropical diseases which are epidemic problems in various localities of the Philippines.
- To undertake programs to assist in public information activities of the Ministry of health which may be of benefit to patients with tropical diseases.

a. Clinical Department

- To apply medical and scientific procedures and techniques in the conduct of clinical research and the delivery of tertiary medical care to patients with tropical diseases including both in- and out-patients.
- To conduct pertinent scientific projects in tropical medicine in coordination with the laboratory research service.
- To establish clinical criteria for the evaluation of medical care through audits and mortality reviews.

b. Epidemiology and Community Research Department
   - To undertake community-based studies on the epidemiology of tropical diseases for the better understanding of them and to be able to design appropriate control programs.

c. Data management Department
   - To provide facilities and service in electronic data processing of research and clinical data.
   - To participate in data analysis of on-going research projects.

d. Parasitology and Medical Entomology Department
   - To provide facilities and services for the parasitologic examination of patients with tropical diseases admitted in the Institute.
   - To develop new techniques in parasitology and medical entomology and apply them to the study of tropical diseases.

e. Pathology Department
   - To undertake studies on anatomic pathology, including gross and histologic examination of specimens from patients admitted at the Institute and autopsy on patients who die in the Institute.
   - To provide routine diagnostic laboratory services for patients, hospital employees, and outside agency referrals.
   - To develop and apply new techniques such as electron microscopy and immunofluorescent microscopy in the study of patients.

f. Biochemistry Department
   - To provide facilities for biochemical studies of patients with tropical diseases admitted to the RITM.

g. Experimental Animal Laboratory Department
   - To keep and breed experimental animals.
   - To cooperate in the execution of experiments that use animals.

h. Immunology Department
   - To undertake studies on the immunologic response to tropical infectious diseases.

i. Microbiology Department

- To undertake microbiological studies of tropical diseases among patients admitted at the RITM.
- To develop and apply new techniques in microbiology, including those in bacteriology, urology, mycobacteriology, and mycology that will enable the RITM to study tropical diseases among admitted patients.

3-2 Present activities

The present activities of the RITM are described hereunder by dividing them into the subsections of a) research activities, b) training activities, c) clinical activities, and d) Japanese technical cooperation.

a) Research activities

The principal functions of the RITM include research activities which are an important part of public health care and necessary for curing and preventing tropical diseases. Results of such research activities are indispensable to establishing effective health care policy. Themes for such research cover a large variety of fields as listed below.

> Acute respiratory infectious diseases (ARI), diarrhea (DD), hydrophobia, hepatitis type B, dengue, meningitis, schistosomiasis, study of fine structures, malaria, parasitological research, AIDS, immune antigen, aflatoxin and malnutrition, and Hansen's disease

RITM has selected both ARI and DD as the main research themes out of the above-mentioned ones and have concentrated efforts on them. As seen in Table 2-5 "Number of patients and deaths at Clinical Research Division," ARI and DD occupy the first and the second positions in the causes of morbidity in the Philippines, also indicating an overwhelming majority in the number of patients in the RITM.

This selection may well be said to be natural and reasonable, judging from the research environment and the necessity of research activities of the RITM.

Table 3-2 Number of patient and death at Clinical Research Division of RITM, 1985

Diagnosis \ Age		0	1-4	5-14	15-	Total
			In-patient			
Central Nervous System		30	39	34	28	131
Cardiovascular					1	1
Respiratory		161	265	22	25	473
Digestive System		42	23	16	54	135
Genito-urinary System			2	1	8	11
Skin & subcutaneous tissue		3	3	5	10	21
Musculoskeletal System and connective tissues		1			5	6
Others		58	22	33	63	176
Total	No.	(295)	(354)	(111)	(194)	(954)
	%	30.9	37.2	11.6	20.3	100.0%
			Emergency			
Central Nervous System		35	60	43	37	175
Indocrine					1	1
Cardiovascular		3		1	38	42
Respiratory		378	593	136	158	1265
Genito-urinary		447	333	149	312	1241
Musculoskeletal		1		1	4	6
Dermatology		8	18	15	56	97
Others		137	234	186	310	867
Total	No.	(1009)	(1238)	(531)	(916)	(3694)
	%	14.9	32.4	16.9	35.8	100.0%
			Out-patient			
Central Nervous System		14	71	33	13	131
Indocrine				1	5	6
Cardiovascular		1	1	11	63	76
Respiratory		340	792	305	472	1901
Digestive system		156	200	111	215	682
Gento-urinary		10	34	21	94	159
Musculoskeletal			2	1	15	18
Dermatology		28	86	79	487	680
Others		91	203	162	175	631
Total	No.	(640)	(1389)	(724)	(1539)	(4292)
	%	27.3	33.5	14.4	24.8	100.0%
Grand total	No.	1944	2981	1366	2649	8940
	%	21.7	33.3	15.3	29.7	100.0

Table 3-3 Number of specimens according to laboratory at RITM, 1985

Specimen \ Lab.	Clinical Lab.	Parasit. Lab.	Histo. Lab.	Microbiology		
				ARI	DD	Virus
NPA/sputum				531		
Urinanalysis	2327			1652		500
Fecalysis	1190	1969			1154	
Hematology/blood	7560	114		2167		
Chemistry	10514					
Malaria smear	152	1404				
Others (CSF, Gram Fluid, Bloodsmear)	2655					500
Amoeba culture		85				
Criptosporidium		684				
Surgical path. & cytology			453			
Electron-micro.			52			
Rabies			69			
Autopsy			58			
Total	24398	4256	632	4350	1154	1000

The RITM incorporates a clinical section, and samples to be obtained from this section is of great help to its research activities, as demonstrated in the facts that the ratio of pathological anatomy reaches about 33% and that the number of specimens amounts to 35,000 per annum.

Some of the successful results of the RITM's research activities include clarification of the tendency to be seen in the ratio of patients of diarrhea showing positivity for more than one germ, clarification of infants positivity for measles HI antibody, and seroimmunological research of diphtheria, thereby the RITM being highly valued as a research laboratory taking the lead in the tropical medicine in the Philippines.

To facilitate expansion of programs for these research activities, funds have been offered by Australian Development Assistance Bureau (ADAB), Bureau of Scientific Technology International Development Department of the National Academy of Science, U.S.A. (BOSTID), the Edna McConnel Clark Foundation, the International Research and Development Center (IRDC), the Mission Control Fund of the Canadian Government, Upjohn Inc., and WHO in addition to the Ministry of Health, National Scientific Technological Agency (NSTA), as well as through Japanese technical cooperation.

This assistance testifies to the high value placed upon RITM's research capability by institutions and governments around the world.

As a result of initial research activities, field tests are carried out as a preliminary step for nation-wide execution of preventive health care of ARI, anhydrobiosis, schistosomiasis, malaria, and Hansen's disease. Good results are expected in these areas as an outcome of RITM's research activities.

b) Training activities

The training activities of the RITM include those for the RITM personnel and training courses by the RITM for outside institutions.

A considerable number of the RITM personnel have actively taken part in training held in Australia and Southeast Asian countries, and workshop seminars and study meetings held by WHO as well as training at institutions in the Philippines and in Japan. The total number of participants had reached 53 as of 1985.

Training courses carried out by the RITM for outside institutions include fellowship programs in infectious diseases, rural health practicing physician program in which clinical and experimental training are combined, and programs regarding the research themes of the RITM. The number of trainees reached 110 in 1985 and 137 in 1986.

Training programs offered by RITM to external agencies are as follows:

1. Post-Residency Fellowship in Infectious and Tropical Diseases

The post-residency fellowship in Infectious Diseases is a joint training program of the Section of Infectious Diseases of the Department of Medicine, UP College of Medicine (UP-PGH) and the Research Institute for Tropical Medicine (RITM). The two-year program aims to train the fellow in the systematic approach to the diagnosis and treatment of infectious and tropical diseases, provide him/her with basic research techniques, and encourage him/her to actively participate in the teaching of infectious and tropical diseases.

Physicians are eligible for training if they have finished three years of residency training in internal medicine or pediatrics as respectively accredited by the Philippine College of Physicians and the Philippine Pediatric Society. Initial screening of applicants is done by the post-graduate committee of the department of Medicine UP-PGH. The final selection is made by the Infectious Diseases faculty. Funding for the training is extended by RITM or by outside institutions and agencies. Since 1981, eleven physicians have graduated from the fellowship program. Presently, six fellows are undergoing training.

2. Rotating Residency in Infectious Diseases

Senior medical residents from affiliate hospitals are assigned to RITM for two months during which time they are trained in the systematic approach to the diagnosis and management of infectious and tropical diseases commonly seen among adult and pediatric patients. The training includes in-patient and out-patient services, infectious disease rounds conferences, bench work in diagnostic microbiology and parasitology, and participation in on-going clinical research projects.

3. Rural Health Practice Program (RHPP)

Since 1982 the Institute has participated in the program for rural health practicing physicians of the Ministry of Health. This program offers a unique combination of clinical exposure and experience in community medicine which allows trainees to interact directly with health center personnel at the primary care level. The duration of training is six months.

For the period July to December 1985, there were 5 post-Board physicians.

They accomplished two research papers (see Research Projects).

1. A Mass Immunization Program in a Periurban Community.

2. Schick Negative Rates of Children in a Philippine Peri-urban Community. This paper was done with Dr. Yoshinori Kaneko, JICA consultant to RITM.

Funding for the RHPP project was provided by JICA.

4. Dermatology Training Course

This is a three-year post-residency training program started in 1985 and co-sponsored by the Philippine Dermatologic Society and the Skin and Cancer Foundation. The training focuses on the diagnosis and management of leprosy as well as other infectious and non-infectious dermatological disorders among in-patients and out-patients seen at the Skin Clinic every Monday.

5. Medical Technology Internship

This is a 42-week internship training in Biochemistry, Hematology, Histopathology, Diagnostic Microbiology and Parasitology. An additional six weeks are spent on Blood banking Serology with affiliated institutions. The program is coordinated by the Clinical Laboratory Section of the Department of Pathology. At present, 6 medical technology interns are rotating in the different services.

6. Other Training Courses

Medical and paramedical personnel from other institutions are trained under preceptorship in selected departments with justification and approval of the department head and the Committee on Manpower Development and Training. The duration of training varies according to need.

Those institutes which dispatch trainees for participating in these trainings are medical institutions dispersed in each district of the Philippines as well as such typical institutions as UP-PGH, Manila Central Hospital, Macati Medical Center in the metropolis. When considering this variety of participating institutions together with the above-mentioned contents of the training courses, it may be said that the activities of the RITM make substantial contribution in terms of vast application of the RITM's research results for the purpose of taking appropriate measures against infectious diseases which form a vital problem in the health care in the Philippines.

Trainees are dispatched from Manila, Luzon Island, and other islands. Lack of appropriate dormitories near the RITM places a heavy burden upon the trainees in terms of money and time. As a result of the R/D executed between the Philippines and Japan in 1986, Third Country Training Programs should start in October 1987. These programs include training of the basic techniques in separating and cultivating bacteria, virus, parasites, and other causes of diseases which generate acute respiratory diseases and acute diarrhea. To accept trainees from Southeast Asian countries participating in these training courses, construction of dormitory facilities is indispensable.

Table 3-4 Number of trainees

	1982	1983	1984	1985	1986	1987	Total
Physicians	43	23	48	56	65	89	324
Nurses	9	18	-	-	-	30	57
Medical technicians	6	10	3	12	16	26	73
Trainees from outside institutions	51	112	80	48	96	65	452
RITM personnel as trainees	-	2	-	4	4	4	16
WHO workshops	20	20	-	-	80	35	165
Third country training	-	-	-	-	-	16	16
Total	129	185	131	120	261	265	1,091

c) Clinical activities

In response to the request from the Philippine side for research activities closely related with clinical and preventive medicine, and in expectation of the difficulties in collecting samples (especially, blood samples) from residents, and to effect trace survey of residents in field research, the clinical department was established. It is composed of an out-patient and in-patient clinic (with 50 beds), ancillary facilities. Actual clinical services were started in February 1982.

1) Clinical services for out- and in-patients

Table 3-5 shows the number of patients who were given clinical services at RITM between 1983 and 1986.

Table 3-5 Number of patent by age-growth and chinic, RITM

Year \ Age	0	1-4	5-14	15-	Total
1983					
In-patient	211	170	95	152	628
Out-patient	918	1,389	708	1,655	4,670
ER-patient	799	810	331	750	1,690
Total No.	1,928	2,369	1,134	2,557	7,988
%	24.1	29.7	14.2	32.0	100.0
1984					
In-patient	276	319	137	190	922
Out-patient	834	1,351	714	1,408	4,307
ER-patient	953	1,122	382	793	3,250
Total No.	2,063	2,792	1,233	2,391	8,479
%	24.3	33.0	14.5	28.2	100.0
1985					
In-patient	295	354	111	194	954
Out-patient	640	1,389	724	1,539	4,292
ER-patient	1,009	1,238	531	916	3,694
Total No.	1,944	2,981	1,366	2,649	8,940
%	21.7	33.3	15.3	29.7	100.0
1986					
In-patient	264	301	129	238	932
Out-patient	706	1,231	665	1,451	4,053
ER-patient	980	1,280	548	1,002	3,810
Total No.	1,950	2,812	1,342	2,691	8,795
%	22.1	32.0	15.3	30.6	100.0

a. Ordinary out-patients

Clinical services are given from 13:00 to 17:00 on Mondays, Wednesdays, and Fridays to ordinary out-patients, and 40 to 50 out-patients are treated every day. The majority are children with relatively mild cases.

The total number of out-patients was 4,670 in 1983, 4,307 in 1984, 4,292 in 1985, and 4,053 in 1986. About 80% were cases of infectious diseases, a figure which satisfies the initial objective of providing the right sample of patients with infectious diseases to the research departments.

The composition of diseases was: 44% for respiratory diseases, 16% for digestive diseases, 15% for skin diseases, and 3% for diseases of the central nervous systems (1985).

b. Emergency out-patients

This category includes out-patients requiring to consultation after 17:00, of which there were about 10 patients a day (or 30 to 40 patients if diarrhea is prevailing). The majority are children with relatively mild cases.

The Total number of emergency out-patients was 1,690 in 1983, 3,250 in 1984, 3,694 in 1985, and 3,810 in 1986, with about 15% being serious cases.

About 40% of people had digestive diseases and about 35% respiratory diseases.

c. In-patients

The RITM possesses 50 beds including two ICU beds.

The total number of in-patients was 628 in 1983, 922 in 1984, 954 in 1985, and 952 in 1986, and children with infectious diseases occupy 70 to 80% of the total number of the in-patients.

About 79% of the 954 in-patients in 1985 were those who satisfied the Institute's research objectives (infectious diseases), and a total of 2,502 in-patients were subjected to x-rays, and 89 to examination by means of ECG.

The Principal diseases of in-patients are bronchopneumonia (33.3%), measles (20.7%), meningitis (11.5%), typhoid fever (7.0%), septicemia (7.0%), and acute gastroenteritis (6.2%).

Principal causes of mortality of the in-patients were measles bronchopneumonia (35.6%), bronkitis (23.5%), septicemia (15%), osteomyelitis (7%), and infectious diarrhea (4%).

d) Japanese technical cooperation

R/D on technical cooperation was executed and implemented between the Government of the Republic of the Philippines and the Government of Japan on October 17, 1980 to ascertain the intended goals of the RITM. It was determined, as a part of the technical cooperation, that Philippine researchers should be trained in leading research laboratories in Japan and that Japanese experts should be accepted as consultants for the RITM. By 1986, therefore, 15 Philippine researchers were trained in Japan and 16 Japanese experts, including Dr. Kaneko, were dispatched to the RITM.

Instruments and equipment for virology, immunofluorescence, medical entomology, and electron microscopy were supplied under grants and an experimental animal laboratory was constructed under the technical cooperation.

Technical cooperation has been extended mainly to introduce basic techniques for carrying out research and has been effectively utilized in the fields of electron microscopy, ELISA, cell cultivation, separation of Bacillus diphteriae. Since the RITM has made striking progress in virology, it is now playing a leading role in the Philippines.

Overall consideration of these four activities is summarized as follows:

During the six years since its opening, the RITM has performed outstanding services in research activities in acute respiratory diseases and diarrhea. Such activities have been highly valued by the Minister of Health and other persons related to the health care field. The RITM may be said to be a leader today in the research of infectious diseases in the Philippines. Since the research activities have reached a high standard, diffusion of the knowledge obtained is being strongly demanded by various sectors of the community for the purpose of further developing public health and assisting in environmental hygiene policies in the country.