

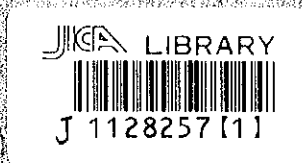
JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

No. 1

MINISTRY OF HEALTH
THE UNITED REPUBLIC OF TANZANIA

BASIC DESIGN STUDY REPORT
ON
THE MEDICAL EQUIPMENT SUPPLY PROJECT
FOR
THE NATIONAL REFERRAL HOSPITALS
IN
THE UNITED REPUBLIC OF TANZANIA

MARCH 1995



BINKO LTD.

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APAN INTERNATIONAL COOPERATION AGENCY (JICA)

MINISTRY OF HEALTH

THE UNITED REPUBLIC OF TANZANIA

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PREFACE

In response to a request from the Government of the United Republic of Tanzania, the Government of Japan decided to conduct a basic design study on the Medical Equipment Supply Project for the National Referral Hospitals and entrusted the study to the Japan International Cooperation Agency (JICA).

JICA sent to Tanzania a study team headed by Mr. Takashi Yoshida, Director, Second Project Management Division, Grant Aid Project Management Department, JICA and constituted by members of Binko Ltd., from 10 September 1994 to 24 October 1994.

The team held discussions with the officials concerned of the Government of Tanzania, and conducted field studies at the study areas. After the team returned to Japan, further studies were made. Then, a mission was sent to Tanzania in order to discuss a draft report, and as this result, the present report was finalized.

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

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

March 1995



Kimio Fujita
President

Japan International Cooperation Agency

March 1995

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

Letter of Transmittal

We are pleased to submit to you the basic design study report on the Medical Equipment Supply Project for the National Referral Hospitals in the United Republic of Tanzania.

This study was conducted by Binko Ltd., under a contract to JICA, during the period 7 September 1994 to 28 March 1995. In conducting the study, we have examined the feasibility and rationale of the project with due consideration of the present situation of Tanzania, and formulated the most appropriate basic design for the project under Japan's grant aid scheme.

We wish to take this opportunity to express our sincere gratitude to the officials concerned of JICA, the Ministry of Foreign Affairs, the Ministry of Health and Welfare and the Embassy of Tanzania in Japan. We would also like to express our deep gratitude to the officials concerned of the Ministry of Health of Tanzania, the JICA Tanzania office and the Embassy of Japan in Tanzania for their close cooperation and assistance throughout our field survey.

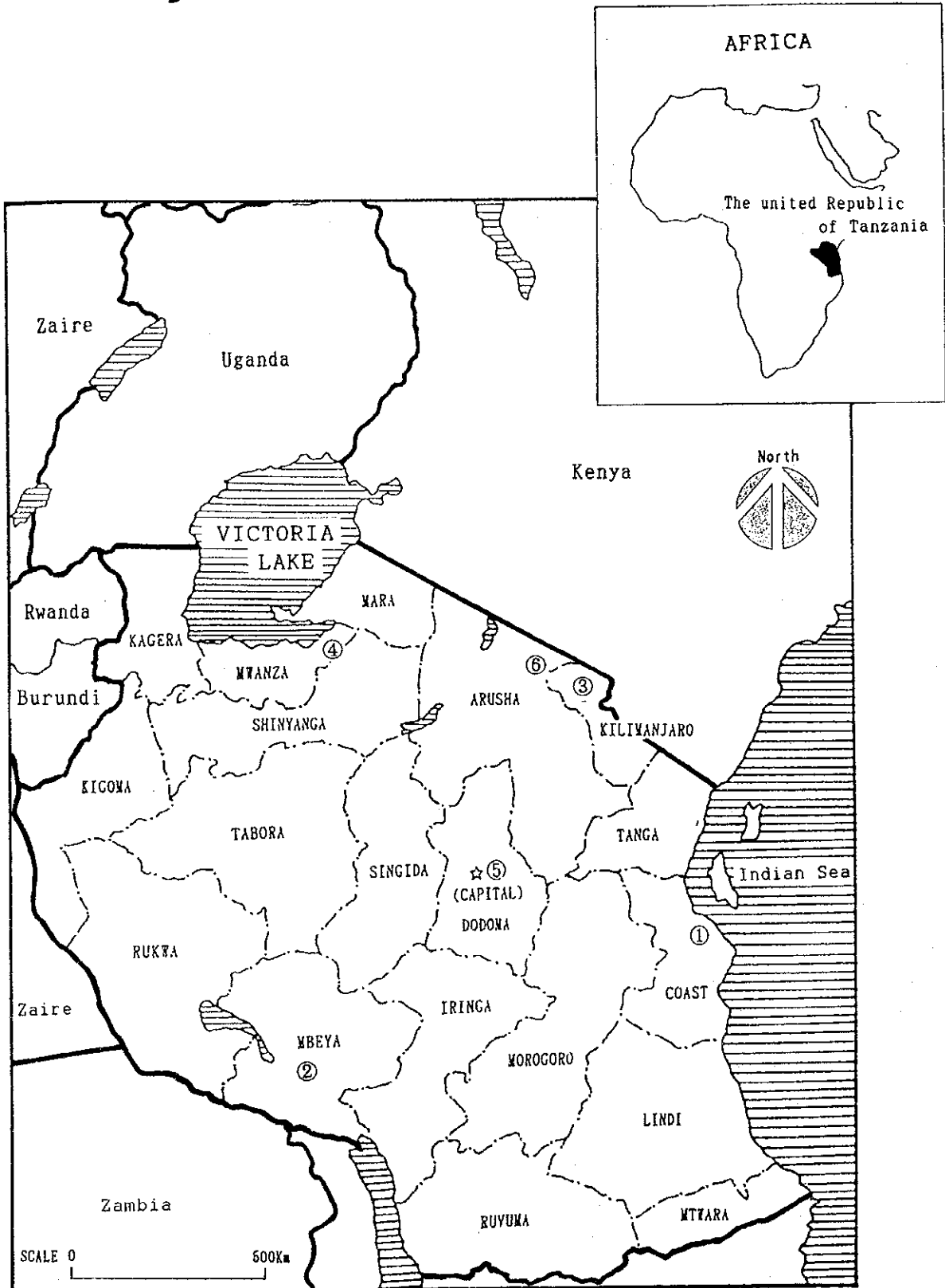
Finally, we hope that this report will contribute to further promotion of the project.

Very truly yours,

Shin-ichi Kimura
Project Manager
Basic design study team on
the Medical Equipment Supply Project for
the National Referral Hospitals

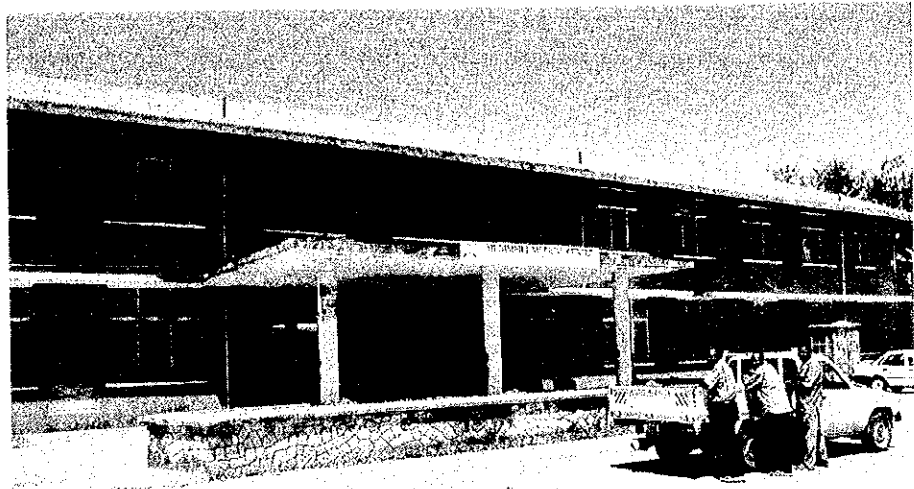
Binko Ltd.

Project site



- | | |
|---|--------------|
| ① Muhimbili Medical Centre (MMC) | Dar es Salam |
| ② Mbeya Referral Hospital (Mbeya) | Mbeya |
| ③ Kilimanjaro Christian Medical Centre (KCMC) | Moshi |
| ④ Bugando Medical Centre (BMC) | Mwanza |
| ⑤ Mirembe Hospital (MIR) | Dodoma |
| ⑥ Kibong'oto National Tuberculosis Hospital (KIB) | Moshi |

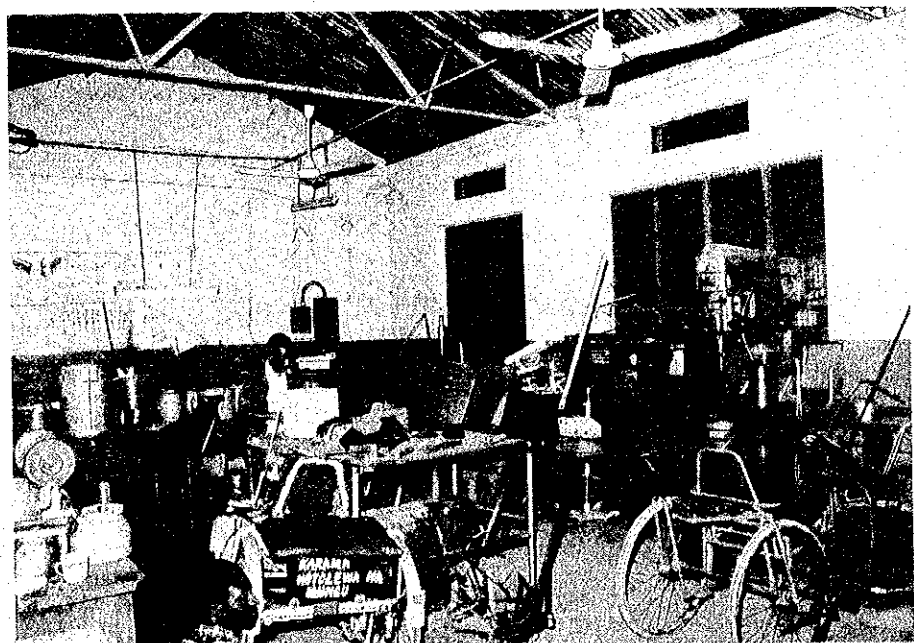
Muhimbili Medical Centre
(MMC)



Front
(Outpatient Entrance)



Main Operation Theatre

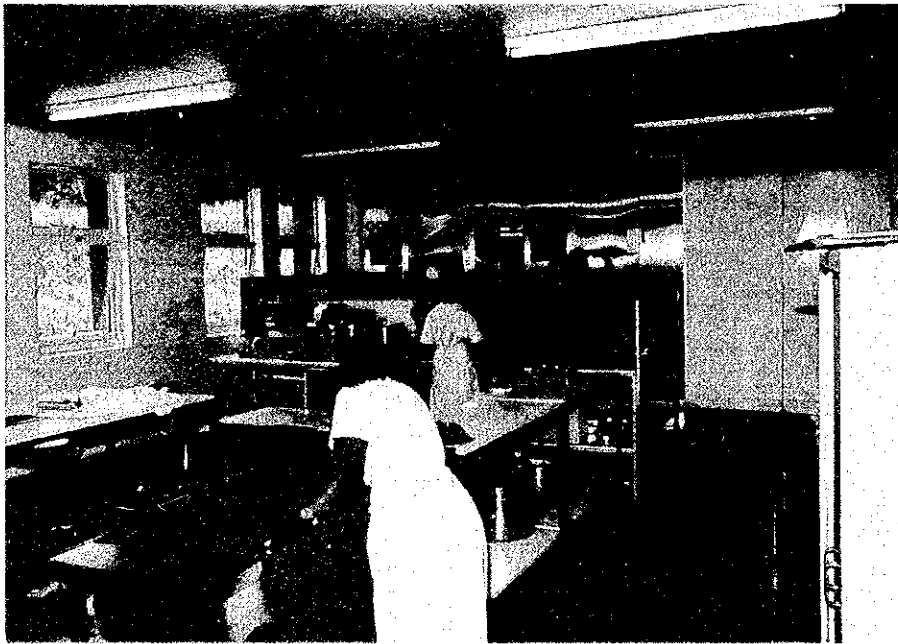


Workshop



2. Mbeya Referral
Hospital (Mbeya)

Entrance

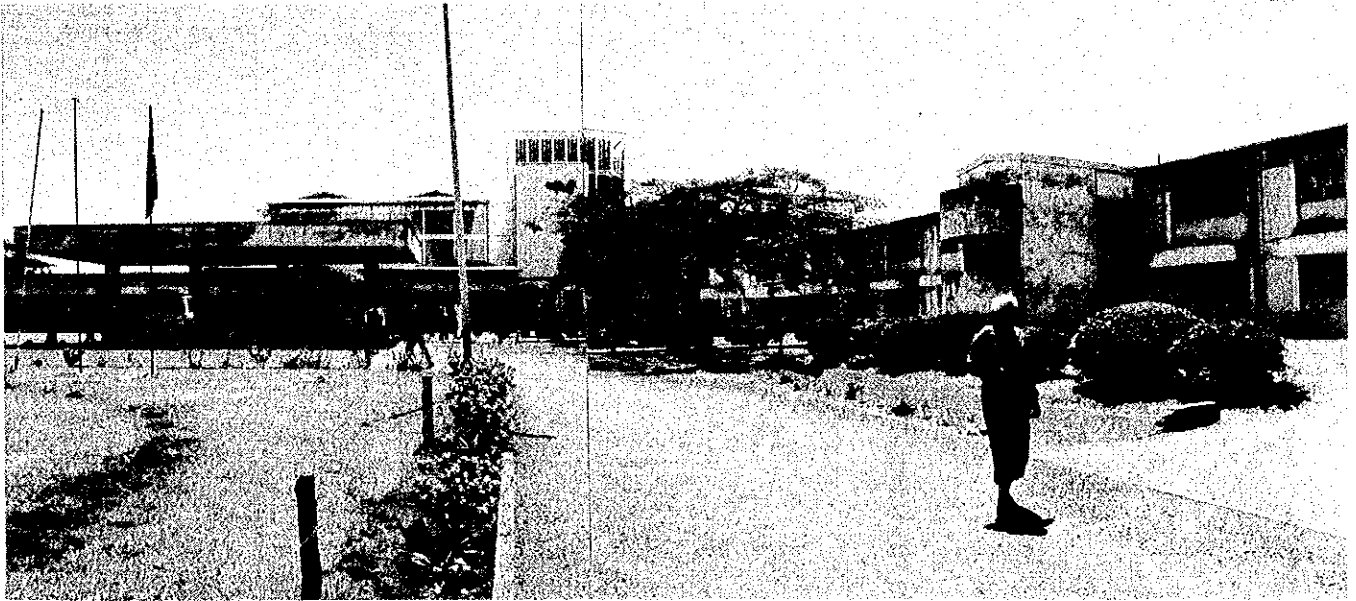


Central Sterilized
Supply Department

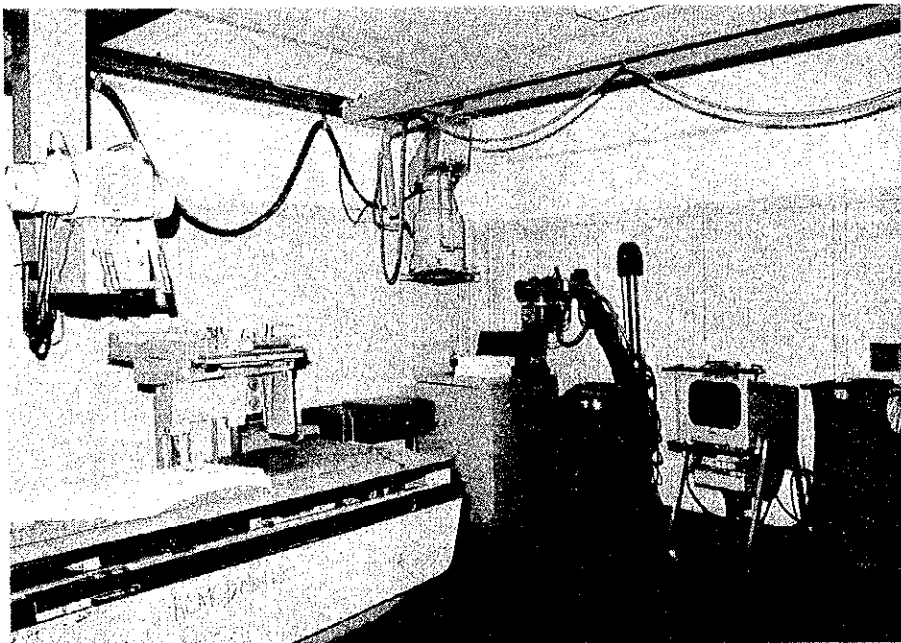


Sewage Disposal

3. Kilimanjaro Christian Medical Centre (KCMC)

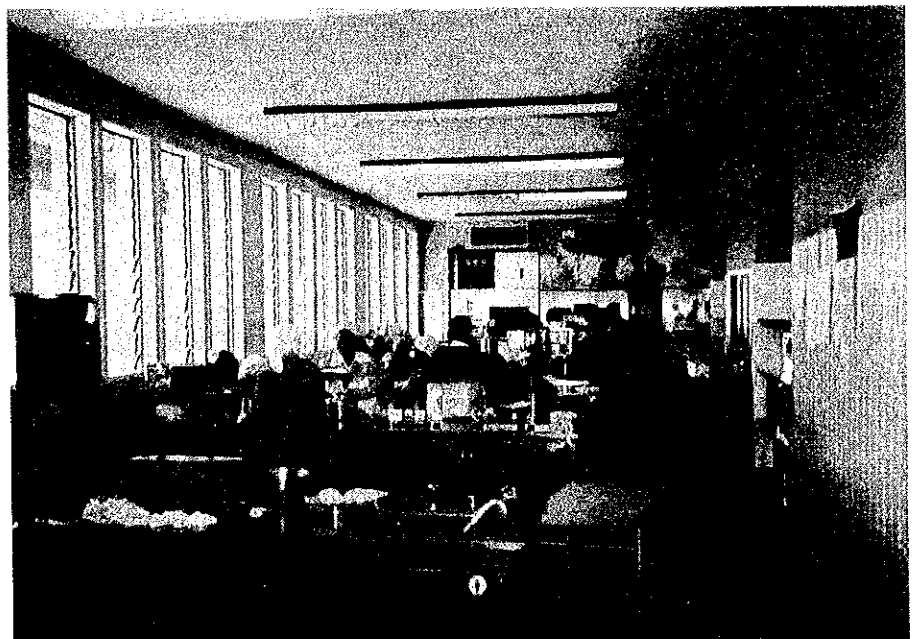


Front Panoramic View

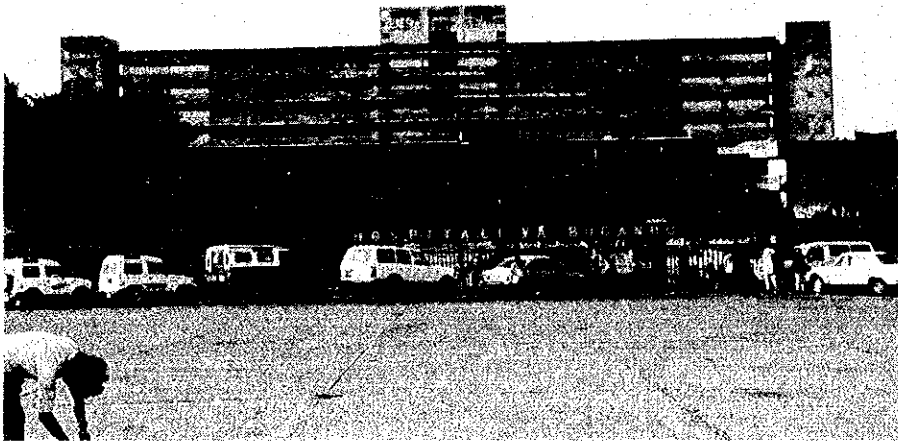


X-ray Room

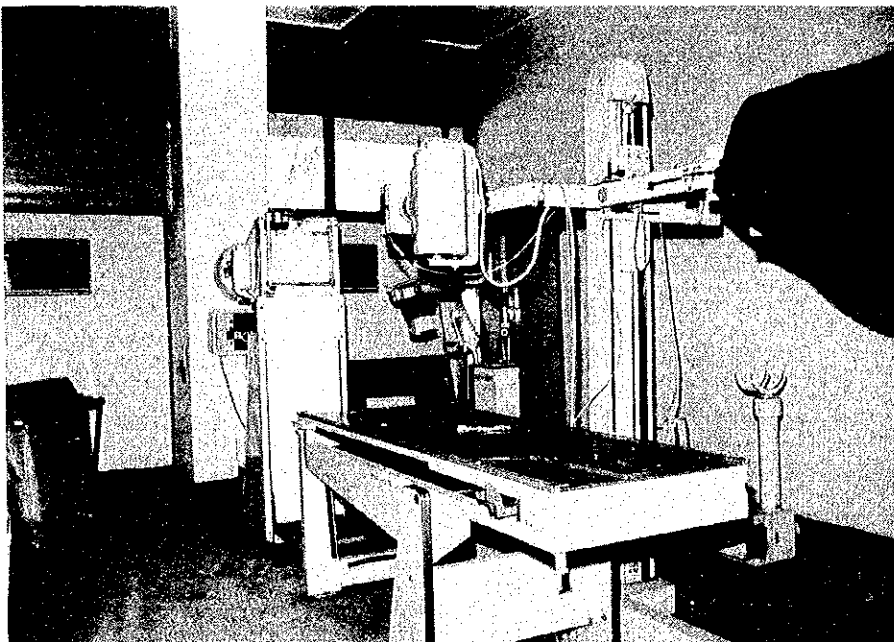
Central Sterilized
Supply Department



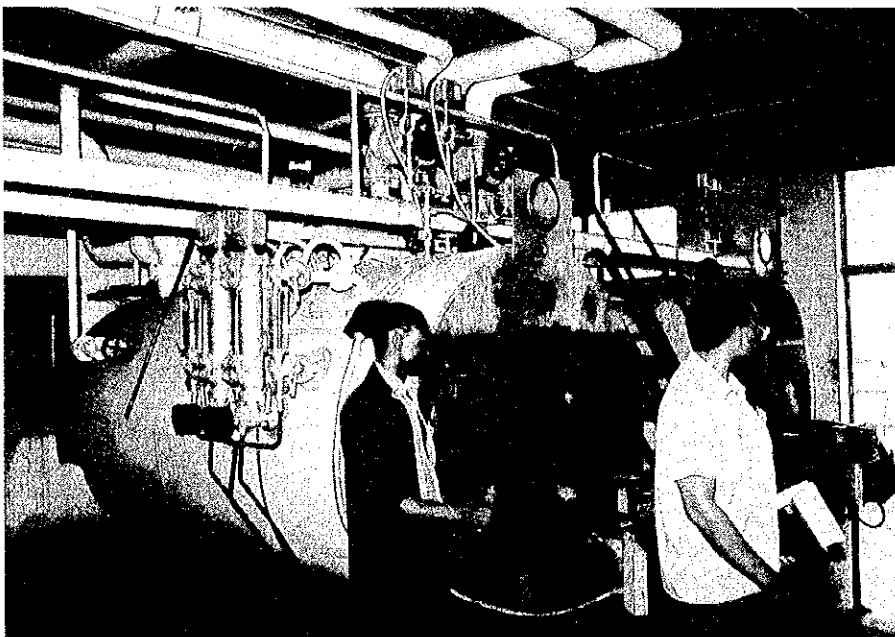
4. Bugando Medical
Centre (BMC)



Front Panoramic View



X-ray Room

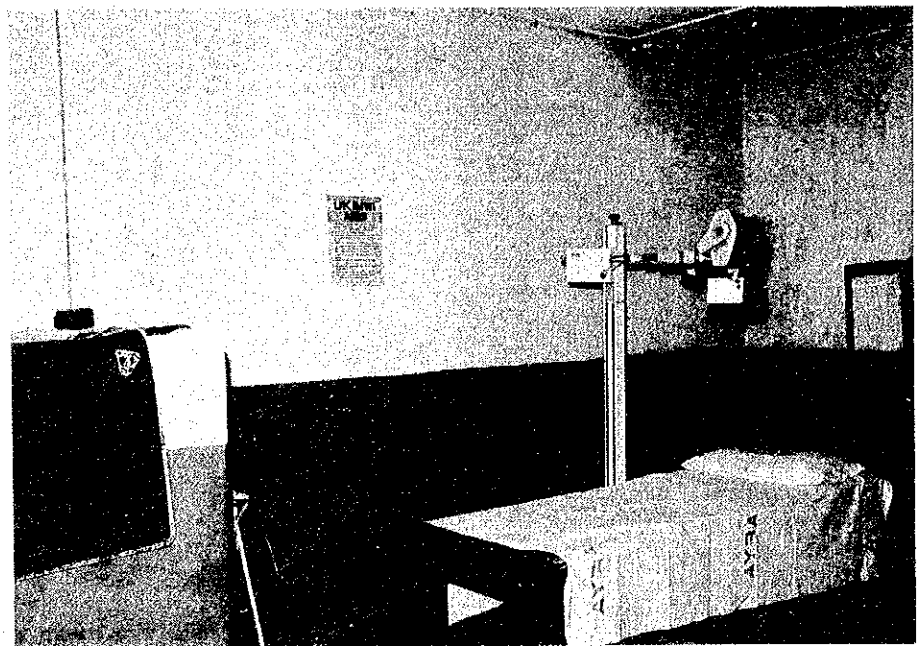


Boiler Room

5. Mirembe Hospital (MIR)



Panoramic View



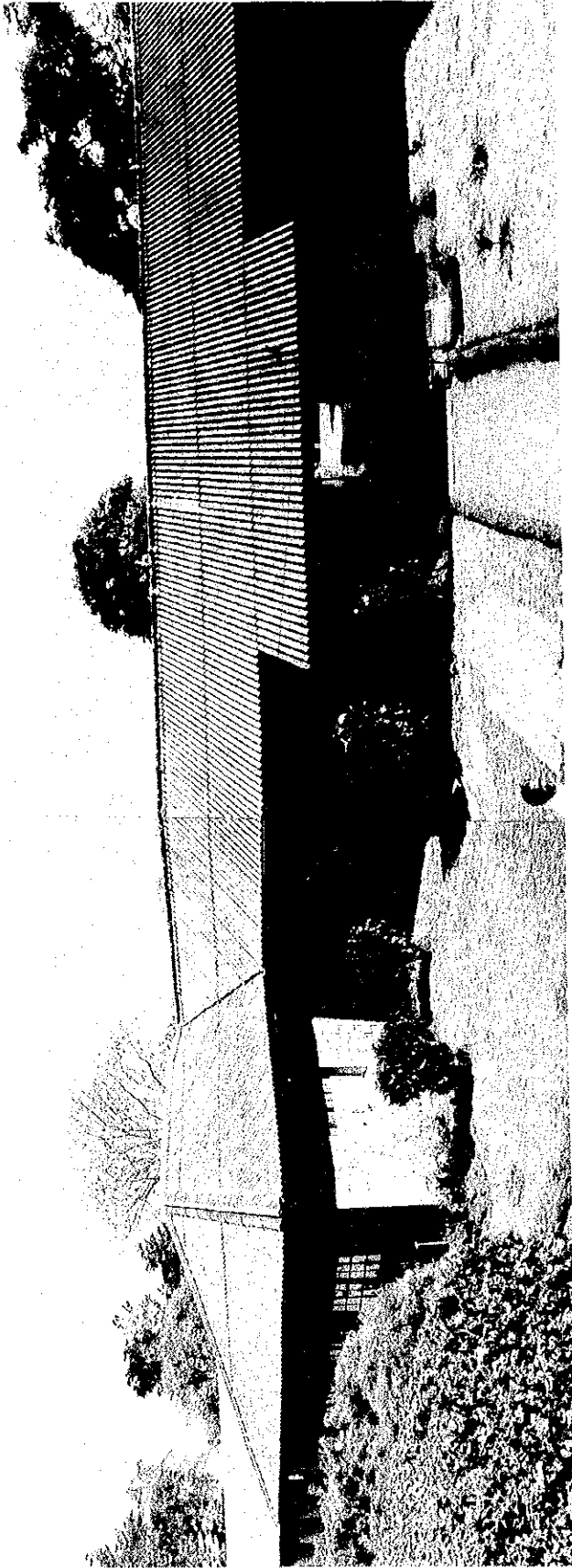
X-ray Room



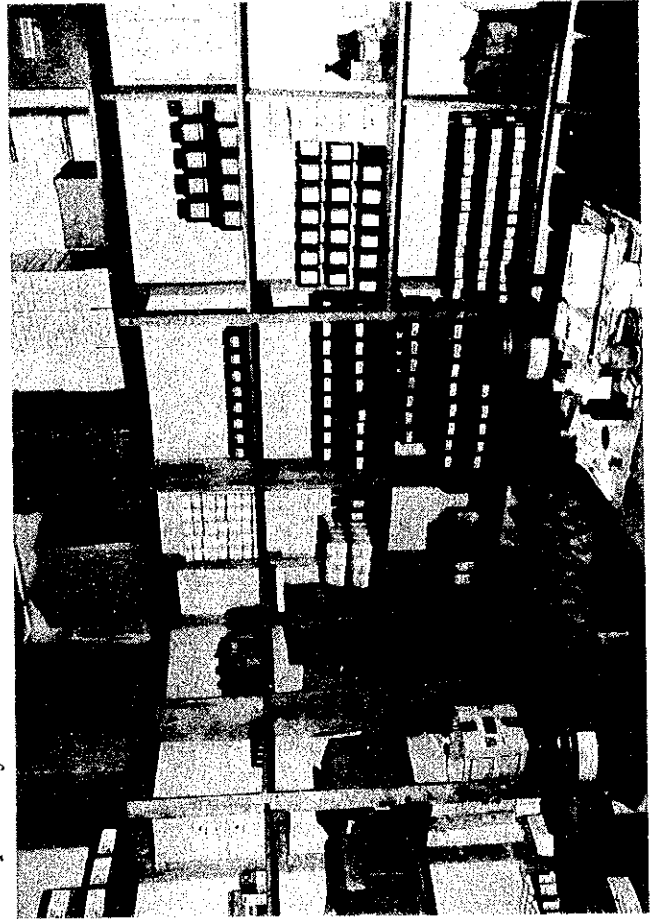
Operation Theatre

6. Kibong'oto National Tuberculosis Hospital
(KIB)

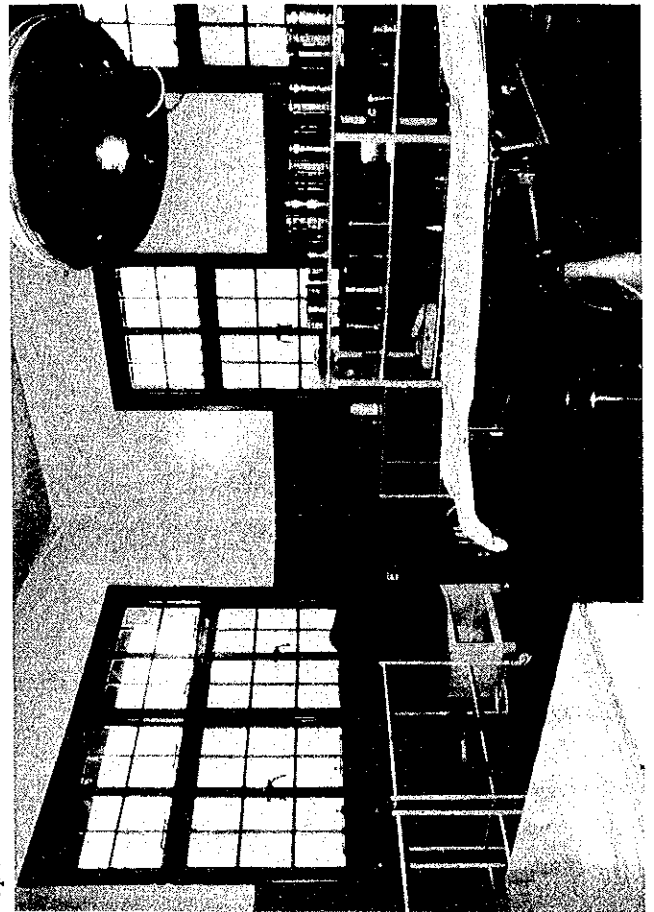
Panoramic View



Dispensary



Operation Theatre



Summary

The United Republic of Tanzania (27,286,000 population, 1993) is furthering the "Rolling Plan" (1993/94-1995/96), the cause of positive improvements by relying on participation of citizens even in the social services fields of education, medicare and water supply, in addition to agriculture, transportation and communication. However since this country's economy has such destabilizing elements as deterioration of the trade balance, advancing inflation accompanying a swelling currency supply, a long lasting financial deficit etc., its economic level is low at \$120 GDP per capita (1991), which makes it difficult to implement the Rolling Plan.

The level of health care in Tanzania is very low with an infant mortality rate of 111 per 1000, a mortality rate of 114 per 1000 for children under five, and a life expectancy of 51 years (1993). It is recognized that shortage of medical facilities and medical staff both in quality and quantity, and slack improvement of medical service system are responsible for these figures. In the country as a whole, only 76% of the population benefit from health services, this rate differing greatly between urban and rural areas, being as high as 99% in urban areas and as low as 72% in rural areas.

As for the health services, Governmental medical institutions are categorized into 6 levels of National, Regional, District, Division, Ward Village etc., and they are so designed that patients should be referred to hospitals of successively higher levels in accordance with their type of disease and the difficulty of testing. The 6 National Referral Hospitals are ranked at the highest level in the health referral system of Tanzania and are divided into 4 general hospitals and 2 special hospitals according to their specialities. Since the activities of the general hospitals are also aimed at conducting medical education and study in addition to the treatment of patients, they are also known as consultant hospitals. Each general hospital is a large medical centre holding approximately 500 to 1,500 sickbeds and treating 1,000 to 1,300 outpatients a day. The special hospitals consist of a mental institution and a TB sanatorium. They are

smaller, with approximately 150 to 250 sickbeds and 180 to 250 outpatients a day, but they are the only medical institutions of their kind in Tanzania.

However, notwithstanding these institutions are supposed to provide high level medical service and are competent to conduct training of medical staff and studies, medical equipment has not been replenished or updated for a long time and is almost obsolete or unusable. Thus they cannot function as tertiary health facilities which were originally planned, and patients with complicated diseases must be sent abroad for tests and treatment.

Under such situation, the Government of Tanzania has requested from the government of Japan a grant aid for the procurement of the most urgently needed equipment for the 6 top referral hospitals in the country.

In response to this request, the Government of Japan decided to conduct a basic design study concerning Japan's Grant Aid, and in September 1994, Japan International Cooperation Agency (JICA) dispatched a Basic Design Study Team to Tanzania. The team held discussions on the background and content of the project with the government officials of Tanzania while collecting information, and following the subsequent analysis and on-site explanation of the draft report executed in December 1994, the basic design study report has been framed.

As a result of the study, the functional restoration of the proposed institutions is expected through the implementation of the project judging from the facts that the proposed hospitals are the highest level medical institutions in the project sites where there are no other medical facilities of the level to which the local people are able to access, that the proposed hospital's equipment is obsolete and deteriorating in functional terms and thus is in need of urgent renewal and supplementation, and that these institutions are now in action and allowed a necessary budget for their operation. Given that the scope and scale of the project is within the bounds of Japan's Grant Aid framework, the implementation of the project is appropriate. Further an effort to establish workshops for maintenance service system will ensure the maintenance and management of the

equipment after procurement.

The requested equipments are those: diagnosis apparatus for daily medical treatment, operation units, examination apparatus, laundry equipment, ambulance, maintenance equipment, and the subjected facilities are the following 6 referral hospitals.

The objective of the project lies in the functional restoration of these hospitals which they originally had.

Subjected Facilities

| Name of Facilities | Location |
|---|---------------|
| General hospitals (consultant hospitals) | |
| Muhimbili Medical Centre (MMC) | Dar es Salaam |
| Mbeya Referral Hospital (MBEYA) | Mbeya |
| Kilimanjaro Christian Medical Centre (KCMC) | Moshi |
| Bugando Medical Centre (BMC) | Mwanza |
| Special hospitals | |
| Mirembe Hospital (MIR) | Dodoma |
| Kibong'oto National Tuberculosis Hospital (KIR) | Moshi |

Based on the following basic principles, equipment to be procured has been selected.

- 1) The size of the project should fall in the range corresponding to the operation control capacity of each hospital proposed by the project, and it also should fall in the range in which its financially and technically independent development could be ensured.
- 2) The problem for medical service in the proposed hospitals lies in the quantitative shortage of and functional deterioration in the existing equipment, therefore this project should be aimed at achieving the "restoration of clinical care function", which is needed by the majority of the patients among those medical service activities being

provided by the proposed hospitals, and of which refurbishing is most critically wanted.

- 3) The equipment procured is to be not for so called high level therapy nor special diseases, but for supporting the basic medical care for the diagnosis and therapy of general diseases of high occurrence rate in the area. The chosen equipment is also to be operated, maintained and controlled within the existing technological and budgetary bounds by way of analysing the disease trends, case numbers and present status of available equipment at the hospitals.
- 4) This project is to be designed on the basis of achieving the improvement of equipment for those departments such as the surgical, central laboratory, central sterilized supply department, maintenance workshop etc., which are able to provide both directly and indirectly wide ranging benefits, and are fundamental of all medical activities.
- 5) In consideration of easiness and certainty of maintaining the equipment after being procured, and the equipment which the hospital currently possesses, part of the equipment should be available in Tanzania and other countries.
- 6) On the technical side, the equipment should be the same level as the existing equipment and easy to operate, of simple and durable construction, and be able to cope with the unstable state of electricity and tropical climate of high temperature and humidity in Tanzania. It should also be so arranged that spare parts can be supplied for the maintenance by the hands of Tanzanian side and technical guidance for maintenance should be given at the time of procurement.

Designed Main Equipment by Division

| Equipment | MNC | MBEYA | KCMC | BMC | MIR | KIR | Total |
|--------------------------------------|-----|-------|------|-----|-----|-----|-------|
| Outpatient & Casualty | | | | | | | |
| E. N. T. Treatment Chair | 1 | 1 | 1 | 1 | - | - | 4 |
| E. N. T. Treatment Unit | 1 | 1 | 1 | 1 | - | - | 4 |
| Fundus Camera | 1 | - | 1 | 1 | - | - | 4 |
| Operating Microscope | 1 | - | 1 | 1 | - | - | 3 |
| Defibrillator | 1 | 1 | 1 | 1 | - | - | 4 |
| Anaesthesiology & Theatre | | | | | | | |
| Operating Table for General Surgery | 2 | 1 | 2 | 2 | - | - | 7 |
| Anaesthesia Machine with Ventilater | 2 | 1 | 2 | 2 | - | - | 7 |
| Electro-surgical Unit | 2 | 1 | 2 | 2 | - | - | 7 |
| ECG Monitor | 2 | 1 | 2 | 2 | - | - | 7 |
| Upper Gastrofiberscope | 1 | 1 | 1 | 1 | - | - | 4 |
| Bedside Monitor | 3 | 2 | 2 | 2 | - | - | 9 |
| Autoclave | 2 | 2 | 2 | 2 | - | - | 8 |
| Flame Photometer | 1 | - | - | - | - | - | 1 |
| X-ray Diagnostic Equipment | | | | | | | |
| X-ray Unit, Battery type | - | - | - | - | 1 | 1 | 2 |
| X-ray Unit, AC Power | 1 | 1 | 1 | 1 | - | - | 4 |
| Ultrasound Machine | 1 | 1 | 1 | 1 | 1 | - | 4 |
| Mobile X-ray Machine | 1 | 1 | 1 | 1 | - | - | 4 |
| Surgical X-ray Unit | 1 | - | - | - | - | - | 1 |
| Automatic Film Processor | 1 | - | - | - | - | - | 1 |
| Maintenance Workshop Tool | | | | | | | |
| Mobile Workshop Vehicle | 1 | 1 | 1 | 1 | - | - | 4 |
| Other | | | | | | | |
| Mortuary Refrigerator | 2 | 2 | 2 | 2 | 1 | 1 | 10 |
| Ambulance | 1 | 1 | 1 | 1 | 1 | 1 | 6 |
| Pick-up car | 1 | - | - | - | - | - | 1 |

The project is expected to be completed within 11.7 months after conclusion of supply contract.

The implementation body of the project is the Ministry of Health of Tanzania. The Assistant Chief Medical Officer of the Hospital Services Department will take the overall responsibility for carrying out the work. After procurement, the maintenance workshop of Muhimbili Medical Centre will lead other workshops as the core of maintenance system in maintenance of the equipment.

The project has selected equipment which the existing maintenance setup is able to cope with, or local agents are able to handle, so it is considered that no major problems will arise concerning the setup for maintenance and upkeep after completion of the work. Moreover, the hospitals are operating the Cost Sharing System (a system of charged treatment) in order to cover maintenance costs, which is expected to produce some 206 million Tsh per year as total income of the 6 referral hospitals, and in the case of equipment which needs high operational and maintenance costs, the Cost Sharing System is appropriated to cover the costs, so there will not arise major problems. As for the Tanzanian side contribution regarding this project, since water supply and drainage facilities are already in place, no more facility improvement costs should arise. The operation costs such as medical gas charges, consumables are estimated to be around 113.2 million Tsh and the maintenance costs including periodical replacement parts around 16.2 million Tsh per year. These costs are within the bounds of the current budget for medical supplies and materials. However, since the warranty period for some of the high level medical equipment will be one year, an estimated cost of about 12.2 million Tsh for binding maintenance service contracts for future maintenance will need to be borne by the Tanzanian side.

The subjected facilities are located in the capital and the central cities of Tanzania and of great importance as public medical facilities providing tertiary medical services for low income group. The implementation of the project is expected to restore the medical level of

the facilities and to expand the opportunity of the general public for access to medical services. Specifically, 320,000 people at Muhimbili Medical Centre, 270,000 at Mbeya Referral Hospital, 310,000 at Kilimanjaro Christian Medical Centre, 340,000 at Bugando Medical Centre, 46,000 at Mirembe Hospital and 62,000 at Kibong'oto National Tuberculosis Hospital will benefit from high quality medical services. Furthermore, the students at the university medical department and the nurses will be able to learn with the procured equipment, and a great contribution is expected to be made in training of medical personnel. The scale and scope of medical activities are also expected to be broadened at the proposed hospitals through the procurement of new equipment. At the same time the introduction of new equipment will restore the effectiveness of medical services, which enables much more reception of patients with the Cost Sharing System.

Therefore, in light of the expected wide-range effects stated above, and the fact that maintenance will be possible, the implementation of this project is considered to be appropriate.

In order to enhance effectiveness of this project, it is important for both Tanzanian and Japanese side to take the following actions:

- 1) According to the initiative of the MOH to reform the maintenance system, expansion of operation and maintenance system, a recording system of equipment registration, periodical inspection and puntual report of repair work should be implemented in Muhimbili Medical Centre as this Basic Design Study Report suggests. Making the most of private maintenance services by making maintenance contract and a responsible system of the organization should also be encouraged.
- 2) A part of the equipment procured under this project includes equipment of which the periodically replaced parts and consumables need to be imported from oversea countries. In order to ensure the availability of these consumables, a system to monitor the number of patients and the type of medical service should be established with the corresponding financial plan to cover the consumable purchasing

programme, taking into consideration the revenue from the Cost Sharing System and donation.

- 3) Among the equipment scheduled for procurement under this project, there are some high level medical items which require advanced maintenance checks through maintenance service contracts with the manufacturer. To cover such costs, an adequate budget plan should be taken.
- 4) In order to enhance the effectiveness of the project, it is desired that the re-organization of the operation and maintenance system be furthered by recruiting technical experts in charge of maintenance, regardless of inside or outside of the country.

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Chapter 1 Background of the Request

Chapter 1 Background of the Request

1. Background of the request

The Tanzanian government has been furthering the cause of positive improvements in the social services sector such as medical and health, education and water supply in addition to agriculture, transportation and communication in the "Rolling Plan" (1993-96) which is now being implemented. However, this country is in dire economic straits with long lasting financial deficits due to deteriorated trade balance and advancing inflation.

Under these circumstances, in the 6 referral hospitals which play a pivotal role in their country's health services, the mechanical equipment for medicare and testing has not been renewed or overhauled for a long time, and the obsolescence of the existing equipment is notable, many being in an almost unusable state.

The Tanzanian Government has tackled in an attempt to achieve their functional restoration and asked Japan for a grant aid in connection with the mechanical equipment and instruments which need emergency upkeep in the 6 referral hospitals.

On the other hand, in part of the facilities (Muhimbili Medical Centre) a rehabilitation project (the addition or reconstruction of facilities and upkeep of sophisticated mechanical equipment for medicare) is scheduled to be implemented under the aegis of African Development Bank, but the request to Japan is so designed as not to overlap with this project.

2 . Outline of the request and main components

(1) Object of the request

The functional restoration of basic health services activities by undertaking the renewal and overhaul of mechanical equipment for medicare, to fill the emergency needs in these top referral hospitals, is the aim of the request.

(2) Implementation Body

The implementation body of the project is the Ministry of Health, Tanzania, and the Principal Secretary of the Ministry of Health is

responsible for the project. The proposed facilities are under direct control of Hospital Services Department. Actual works shall be done by the Assistant Chief Medical Officer of Hospital Services Department.

(3) Content of the request

1) Subjected facilities

The subjected facilities of the project are the 6 hospitals as follows.

| | |
|--|--------------|
| 1. Muhimbili Medical Centre (MMC) | Dar es Salam |
| 2. Mbeya Referral Hospital (Mbeya) | Mbeya |
| 3. Kilimanjaro Christian Medical Centre (KCMC) | Moshi |
| 4. Bugando Medical Centre (BMC) | Mwanza |
| 5. Mirembe Hospital (MIR) | Dodoma |
| 6. Kibong'oto National Tuberculosis Hospital (KIB) | Moshi |

2) Requested equipment

The equipment requested to be improved with the project are 473 items and the main equipment of the same as follows.

1. Out-patient & Casualty

Sphygmomanometer, Digital Clinical Thermometer, Stethoscope, Laryngoscope, Manual Resuscitator, Examination Light, Electrocardiograph, Halogen Diagnostic set, Laundry Cart, Suction Unit, High Pressure Steam Sterilizer, Laparoscope, Labour Bed, Infant Ventilator, Doppler Fetal Heart Detector, Suction (ENT), E.N.T. Treatment Chair, E.N.T. Treatment Unit, Bicycle Exerciser, Standing Table, Low Frequency Therapy Apparatus, Infrared Ray Lamp, Ultrasonic Therapy Apparatus, etc.

2. Anaesthesiology & Theatre

Operation Lamp, Operating Table, Anaesthetic Machines, Electro-surgical Unit, Suction Machine, ECG Monitors, Defibrillators, Upper Gastrofiberscope, Blood Gas Analyser, Autoclave, Image Intensifier Operating, Non Invasive BP Monitor, Electroencephalograph, Serum Electrolyte Analyser (Na,K,Ca,Cl), Slit Lamp Microscope, Uterine Dialators,

Obstetric Instrument, Obstetric Forceps, Cesarean Incision Set, Operating Knife, Standard Operating Scissors, Allis Intestinal Forceps, Operating Instrument Set, Nephrectomy Instrument Set, Appendectomy Instrument Set, Retractor, Nerve Stimulator, Microsurgery Instrument, Lylabeltaining Brain Batrator, Motor Nurve, Fundus Camera, Ultrasound, Vitrectomy Set, Laser Machine, Microsurgery Set for Ophthalmology, etc.

3. Orthopedics

Pelvic Reduction Forceps, Semitubular Plate, Quick Coupling, Universal Chuck, Connector, Drill Bit, Cancellous Bone Screws, Femoral component Cemented, Acetabular Cups Cemented, etc.

4. Laboratory

Spectrophotometer, Centrifuge Haemocrit, Autoclave, Flame Photometer, Automatic Slide Stainer, Platelet Counter, Coagulometer, Microscope, Teaching Microscope, Hot Air Oven, Anaerobic Jar, Incubator, etc.

5. X-ray Diagnostic Equipment

Basic X-ray Unit (BRS), Ultrasound Machines, Mobile X-ray Machine, Automatic Processor, etc.

6. Maintenance Workshop Tools

Dual Trace Ocilloscope, Tester, Signal Generator, Dosemeter, Automatic Winding Machine, Hexagon Driver Set, Weller Soldering Equipment, Bench Magnifier, Feeler Gauges, Screw Extractor, etc.

7. Maternity

Gynecological Examination Unit, Infusion Pump, Photo Therapy Unit, Infant Incubator, Suction Unit, etc.

8. Other Equipment

Ambulance, Mobile Workshop Vehicles, Air Conditioner, Automatic Washer, Drying Tumbler, Spinner, Generator, Mortuary Refrigerator, Deep Freezer, Computer, etc.

Chapter 2 Circumstances of the Project

Chapter 2 Circumstances of the Project

1. Overview of Medical and Health Sector

1-1 Health Condition in General

(1) Overview of Health Status

At the time of independence (1964), the health index of the population was very low, reflected in an average life expectancy of only about 40 years. As was true throughout most of Africa at the time, health services had been largely concentrated in urban areas, and the bulk of the population living in rural areas was without access to primary health care (PHC).

After independence, the Government committed itself to providing basic health services to the population, free of charge. While in the early development plans the expansion of health system was mainly directed to rural areas, the Government was not initially able to translate its stated intentions into reality because of its tight financial conditions, and the bulk of health expenditures continued to go toward urban, hospital-based curative care, primarily in Dar es Salaam. Therefore, the health system in rural areas was not well-established, and the disparity between urban and rural got remarkable.

Following the Arusha Declaration in 1967, and a critical review of development expenditures in 1971, a health plan was adopted which set out explicit targets for reaching the rural population. It called for the opening of 25 new rural health centres (RHC) and 100 new dispensaries each year, to be staffed by a new cadre of auxiliary health workers, with the intention of reaching population-per-facility ratio of 50,000 for RHC and 6,500 for dispensary by 1980.

Throughout the 1970s, good progress was made in achieving the annual target, and by the early 1980s over 200 RHCs and 2,200 dispensaries had been constructed and staffed. It is currently estimated that over 90 percent of the population lives within 10km of health facilities. Although it seems that the nationwide health system is established, the persistent economic slump keeps these facilities from enough budget for medical activities.

(2) Problems of Health Policy

Two factors threaten to hamper the Tanzania's efforts to achieve the WHO target, "Health for all by the year 2000". The first is the rapid rate of population growth and the second factor is poor economic management in the past ten years, which gradually squeezed out recurrent resources (for pharmaceuticals, medical supplies, salaries) that are required if facilities are to function as designed.

The lack of drugs and medical supplies has reached crisis proportions, particularly in referral hospitals. The government has recognized the importance of both factors and is actively pursuing strategies to address both issues as part of its referral programme. The Ministry of Health is making efforts to promote a programme of essential drug supplies to Dispensaries under SDC support.

(3) Health Index

The health status of the community remains generally poor as in other developing countries in the region. The major health problems in Tanzania, consist mainly of infectious and parasitic diseases, malnutrition and pregnancy-related conditions. Anaemia is particularly severe along the coast and low-land areas, affecting mainly the vulnerable groups. Patients affected by diseases related to pregnancy and childbirth account for about 16% of all the hospital admission. HIV/AIDS epidemic and related diseases also present a major health problem.

The health situation in remote areas which each referral hospital takes charge of is further aggravated by the continuous decline of the socio-economic status of the country as the GNP per capita plummeted from US\$280 in 1961 to US\$110 in 1992. (Source: Mr. Kibona, Minister of State, President's office, Planning Commission, June 1992). The massive depreciation of the Tanzanian shilling against the US dollar from Tsh 18 in June 1986 to Tsh 300 in June 1992 and the persistent high rate of inflation of around 30% have had serious impact on the living standards and health status of the remote and local areas.

Table 2-1 Selected Health Indicators

| Category | Country-Wide | Urban | Rural |
|---|--------------|-------|-------|
| One year-olds(%)fully immunised against the 6 EPI target diseases | 83% | - | - |
| Access to health services(% of pop.) | 76% | 99% | 72% |
| Access to safe water (% of pop.) | 56% | 90% | 42% |
| Access to adequate sanitation (% of pop.) | 68% | 93% | 58% |
| Maternal Mortality rate per 100,000 live birth | 200~300 | | |

Source: UNICEF, Annual report, 1990, Dar es Salaam. Morbidity, Mortality and Epedemiological trends.

Table 2-2 shows health index in Tanzania in comparison with neighboring countries. It shows that Tanzania health index is lower than one for Kenya, but almost same as Uganda. This is due to the facts that the national state of the health and hygiene environment is insufficient, that the medical system is ill equipped and that nearly 38% of the population are living in poverty and suffer from a chronically poor state of nutrition.

Table 2-2 Health Index in Comparison with

| Population | Tanzania | Kenya | Uganda |
|------------------------------|-----------------|-----------------|-----------------|
| Population: | 25,965,000 (92) | 27,372,000 (93) | 19,344,000 (93) |
| Increase rate in population: | 2.8% (93) | 3.2% (93) | 2.7% (93) |
| Life expectancy at birth: | 51(93) | 59 (92) | 42 (92) |
| Crude birth rate: | 50.3/1000 (90) | 44/1000 (92) | 51/1000 (92) |
| Crude death rate: | 13.9/1000 (90) | 10/1000 (92) | 14/1000 (92) |
| Infant mortality: | 111/1000 (90) | 51/1000 (92) | 111/1000 (92) |

Source: African Development Fund (AfDF), 1993.

1-2 State of Illnesses

(1) Tendency of Diseases

Table 2-3 shows change of diseases tendency. It can be seen that Malaria and upper respiratory infection patients account for 70% of total numbers. These are not only for poor medical service system, but for insufficiency of public health infrastructure. Malaria has the highest incidence. This means that Malaria actually exists in many cases, but also because of misdiagnosis for febrile diseases of unknown origin.

Table 2-3 Tendency of Main Diseases 1989-1991

| | 1989 | | 1990 | | 1991 | |
|-----------------------------------|--------------|--------|--------------|--------|--------------|--------|
| | Cases Number | % | Cases Number | % | Cases Number | % |
| Malaria | 5,125,378 | 37.59 | 7,111,200 | 39.43 | 5,960,527 | 43.01 |
| Upper Respiratory Infection | 1,879,629 | 13.79 | 2,618,348 | 14.52 | 1,835,361 | 13.24 |
| Diarrhoeas Diseases | 1,364,278 | 10.01 | 1,651,602 | 9.16 | 1,234,138 | 8.91 |
| Intestinal Worms | 734,099 | 5.38 | 947,778 | 5.26 | 541,826 | 3.91 |
| Eye Diseases | 724,146 | 5.31 | 908,996 | 5.04 | 670,081 | 4.84 |
| Pneumonias | 711,098 | 5.22 | 1,126,180 | 6.24 | 665,091 | 4.80 |
| Skin Diseases | 558,701 | 4.10 | 719,181 | 3.99 | 606,106 | 4.37 |
| Accidents(incl. burns, fractures) | 359,799 | 2.64 | 504,970 | 2.80 | 338,199 | 2.44 |
| Gonorrhoea | 314,728 | 2.31 | 365,312 | 2.03 | 254,149 | 1.83 |
| Symptoms & Ill Def. Conditions | 1,862,017 | 13.66 | 2,080,161 | 11.53 | 1,753,408 | 12.65 |
| Total | 13,633,873 | 100.00 | 18,033,728 | 100.00 | 13,858,886 | 100.00 |

Table 2-4 shows the number of outpatients in health centre and dispensary for the last two years. Almost no change is seen in number in both facilities. Most of the diseases are caused by infectious diseases.

Table 2-4 Number of outpatients at HC, Disp.

| Disease | 1986 | | | 1987 | | |
|-------------------|-----------|---------|------|-----------|---------|------|
| | Reported | Patient | % | Reported | Patient | % |
| Malaria | HC 674 | 385,187 | 30.7 | HC 665 | 460,905 | 33.2 |
| | DISP 1544 | 426,246 | 28.0 | DISP 1463 | 442,763 | 30.4 |
| Upper Respiratory | HC 674 | 205,840 | 16.4 | HC 665 | 211,336 | 15.2 |
| | DISP 1544 | 22,814 | 14.6 | DISP 1463 | 209,559 | 14.4 |
| Diarrhoeal | HC 674 | 94,604 | 7.5 | HC 665 | 110,426 | 7.9 |
| | DISP 1544 | 139,474 | 9.1 | DISP 1465 | 130,584 | 9.0 |
| Skin Disease | HC 674 | 43,557 | 3.5 | HC 665 | 45,425 | 3.3 |
| | DISP 1644 | 58,005 | 3.8 | DISP 1463 | 55,977 | 3.8 |

Source: MOH 1989.

Table 2-5 shows the leading causes of death of inpatients, one of modern disease of heart disease appears at the lower rank.

Table 2-5 Leading causes of death in health facilities 1991

| Disease | Frequency (%) |
|--------------------------------|---------------|
| 1. Malaria | 14 |
| 2. Pneumonia | 10 |
| 3. Diarrhoeal diseases | 10 |
| 4. Nutritional disorders | 7 |
| 5. Conditions of early infancy | 5 |
| 6. Anaemia | 4 |
| 7. Tuberculosis | 3 |
| 8. Cardiac diseases | 3 |
| 9. Tecanus | 2 |
| 10. Cancer | 2 |
| Others | 40 |

Source: Ministry of Health, Dar es Salaam

(2) Main Diseases and Measures

○ Malaria

Malaria remains the biggest public health problem and highly epidemic in over 80% of the country. It is the commonest cause of morbidity accounting for about 25% of all the outpatients in the rural health facilities.

The problem of Malaria is aggravated not only by its high prevalence but the rapidly increasing resistance to antimalarial and the severity of malaria-related complications, particularly anaemia.

Malaria resistance to chloroquine is currently estimated to be around 22% in adults and about 30% amongst primary school children. A high rate of up to 80% in infants has been recorded. A national malaria control programme is currently being implemented with particular emphasis on community involvement and education.

○ HIV/AIDS

Tanzania has the second highest HIV/AIDS prevalence in East Africa. In 1983 the reported cases were only 3 persons, however, 34,605 cases were reported in May 1992. It is estimated that the number will reach 800,000 cases by the year 2000. HIV seroprevalence in the general population is estimated to be 4.3% with a range of 2.3% to 21.0% among pregnant women attending ante-natal clinics. It is projected that by the year 2000 the number of HIV infected persons will be about 2.4 million.

The actual extent of the HIV/AIDS in the community has not been determined. However, it is generally recognized the epidemic causes an impediment to the development of the socio-economic sectors.

○ Tuberculosis

One of the most serious HIV/AIDS-related diseases seen in Tanzania has been the rapid resurgence of Tuberculosis, a disease condition that had been fairly well controlled and stabilized. During the last eight years, the number of reported cases of tuberculosis has increased from 11,812 in 1983 to 25,605 in 1992.

○ Malnutrition

During the last few decade high rates of mortality from malnutrition have been seen among children under five years and women, particularly pregnant mothers. Like other developing countries in sub-Saharan Africa, the major nutritional problems are Protein-Energy Deficiency (PED), and deficiencies of micronutrients like Iron, Iodine and Vitamin A. The manifestations of these deficiencies vary considerably depending on severity, age and other factors. Currently there are national programmes for the control of the above deficiencies.

Table 2-6 Nutrient deficiencies in Tanzania according to Population groups

| Population Group | Type of deficiency and % affected | | | |
|-------------------------|-----------------------------------|---------|------|------|
| | PED | Anaemia | IDD | VAD |
| Children under five | 52.0 | 45.0 | 13.0 | 30.0 |
| Pregnant and Lct. women | 13.0 | 80.0 | 52.0 | 0.7 |
| Others | 20.0 | 20.0 | 40.0 | 0.1 |
| General population | 28.0 | 32.0 | 25.0 | 6.1 |

Source: Kavishe FP (1987), TFNC Report No 1215.

Apart from the above major nutritional deficiency disorders there are some nutrient excess disorders. These include fluorsis in the northern, north-west and central parts of the mainland and the problem of overweight and obesity which appears to be increasing in some population groups in the community. Some recent community studies have shown that the problem of diet related non-communicable disease and its associated factors is getting relatively considerable.

Table 2-7 Prevalence (%) of diet-related non-communicable diseases in three regions of Tanzania.

| Disease | Prevalence (%) |
|-----------------------------|----------------|
| 1. Hypertension | 3.0 ~ 12.8 |
| 2. Diabetes mellitus | 0.5 ~ 1.1 |
| 3. Obesity (BMI>30) | 1.1 ~ 10.8 |
| 4. Smoking | 1.3 ~ 42.0 |
| 5. Alcohol consumption | 4.1 ~ 78.0 |
| 6. High blood cholesterol | 0.6 ~ 7.8 |
| 7. High blood triglycerides | 7.9 ~ 13.3 |

Source: Swai et al, 1990(88)

○ Anaemia

Anaemia has become one of the commonest causes of morbidity and mortality both directly and indirectly, and the number one killer in children.

Community based surveys indicate the prevalence of anaemia is between 0-100% depending on population group and geographical area. It is highest along the coast and other lowland areas and lowest in the high altitude areas. It is estimated that about 32% of the population suffers from nutritional anaemia.

Recent hospital-based studies in the mainland reveal that anaemia accounted for 20-80% of admission in children's wards and 18-87% in pregnant women. While anaemia was the direct cause of 5% of maternal deaths, it was the underlying cause of 63-73% of all the deaths. Records at Muhimbili Medical Centre show that anaemia was the number one killer causing 26% of deaths in the children's wards in 1988/89. The high prevalence and severity of anaemia is also a reflection of the severity of malaria and malnutrition in the community. (Source: Tanzania Food and Nutrition Centre, Dar es Salaam, 1991)

○ Maternal Mortality

Despite the well-established network of maternal and child health services, maternal mortality is high with insufficient medical activities because of the shortage of human and material resources; currently estimated to be between 200-300 per 100,000 live births. The trend of maternal mortality in Tanzania indicates some gradual decline from 450 per 100,000 live births at 1961 to about 200-300 since 1975. This is because over 50% of these could be saved by improved maternal and obstetric care.

○ EPI Target Diseases

One of the success stories in Tanzania is the achievement of high vaccination coverage. With the national vaccination coverage of 80%, the incidences of the EPI target diseases, particularly measles, whooping cough, tetanus and polio are reported to have declined substantially during the last five years.

1-3 Medical and Health Administration

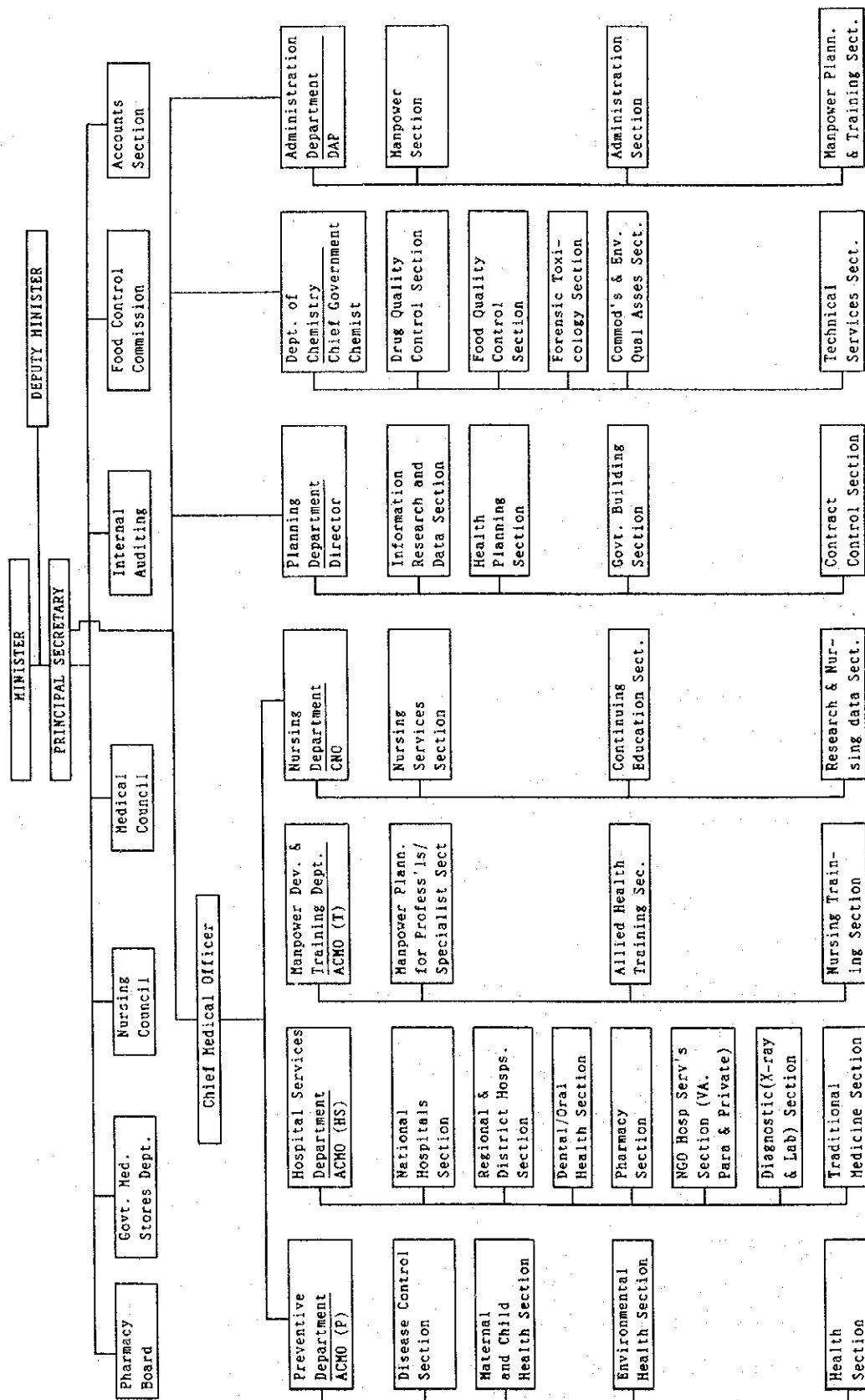
(1) Medical and Health Sectors and Mechanism

The GOT has organized its national health care system through decentralized levels as follows: national, regional, district, division, ward and village. The Ministry of Health (MOH) has overall responsibility for the organization and management of the health sector, in terms of formulating policies and developing strategies and plans for their implementation, setting guidelines and standards, and providing technical support for all levels of service. The MOH portfolio also includes the management of vertical programmes as well as the administration of one teaching hospital, the Muhimbili Medical Centre and five other tertiary/specialized hospitals. Other medical facilities are under control of the health department of the state governments.

The operating costs are allotted to the top referral hospitals directly from the budget of the MOH, and indirectly to other medical facilities, through the state governments.

Figure 2-1 shows the structure of the Ministry of Health.

Fig. 2-1 ORGANIZATION CHART OF THE MINISTRY OF HEALTH TANZANIA



(2) Medical and Health Setup

1) Setup

The national medical service system in Tanzania is divided into 6 categories of national, regional, district division, ward, village, providing primary, secondary and tertiary services according to the scale and function of the facilities.

The primary health care is made through approximately 2,914 MOH (including 696 non-MOH) dispensaries and 276 health centres, which have around 5740 beds in total.

Secondary medical facilities consist of 74 MOH (plus 79 non-MOH) district hospitals in addition to 17 regional hospitals.

Tertiary medical facilities are one teaching and major consultant hospital, 3 other consultant hospitals and 2 special hospitals. An estimated number of beds at the secondary and tertiary levels is around 25,630.

Putting the 6 referral hospitals on the top of medical health service system, there are 17 regional hospitals, 153 district hospitals which are accompanied by 6 urban & rural health centres respectively, and each health centre supervises 5 dispensaries. Patients can refer to upper rank facilities in accordance with difficulty of their disease.

All medical facilities including private hospitals are organised into the referral system.

The top referral hospitals are placed at each zone, and each region has its regional hospital as district hospital is at each district.

Table 2-8 Referral System in Tanzania(1987)

| Medical Service | Administrative area | Number of areas | Type of Health facility | Number of Health facilities |
|---------------------------|---------------------|------------------|------------------------------|-----------------------------|
| Tertiary Medical Service | Zone | 6 | Consultant Hosp. | 4 |
| | | | Special Hosp. | 2 |
| Secondary Medical Service | Region | 20 | Regional Hosp. | 17 |
| | District | 104 | District Hosp. | 54 |
| | | | Designated D Hosp. | 20 |
| | | | *(Voluntary A Hosp.) | 59 |
| | | | *(Parastatal Hosp.) | 5 |
| | | *(Private Hosp.) | 15 | |
| Primary Medical Service | Division | 300 | Urban & Rural Health Centres | 276 |
| | Ward | 2,139 | Dispensary | 2,914 |
| | | | | 3,365 |

Source: Ministry of Health, Dar es Salaam(1992)

Note : Voluntary Agency (VA)

The Ministry of Health controls the whole medical service, dividing the country into 6 zone. Dispensary, where beds are furnished but no doctor is stationed, provides primary medical service. Secondary and tertiary medical services are covered by regional hospitals, district hospitals, private bodies and voluntary hospitals. However these facilities are not sufficient enough to carry out tertiary medical services. Only top referral hospitals can provide these tertiary medical services.

The population of Tanzania is over 27 million. However, considering its population, there are only 4 tertiary medical facilities except for the special hospitals. That indicates the medical system in Tanzania is not satisfactory at present.

2) Structure

Medical and health facilities in Tanzania can be roughly divided into national and public (local government) bodies and private bodies.

According to statistics, the number of facilities increased by about 3.5 times during the last few decades. However the facilities are not sufficient, and a declining tendency has been seen recently.

Table 2-9 Number of Public Health Facilities 1961-1991

| | 1961 | 1971 | 1981 | 1991 | Ratio/30 years |
|-------------------|------|-------|-------|-------|----------------|
| Hospital | 120 | 120 | 149 | 170 | 1.41 |
| District Hospital | 22 | 80 | 239 | 300 | 13.63 |
| Health Centre | 831 | 1,500 | 2,600 | 3,000 | 3.50 |
| Total | 937 | 1,700 | 2,988 | 3,384 | 3.47 |

Source: MOH

Table 2-10 shows distribution of facilities and patient bed. A larger number of hospitals as well as patient beds are distributed to main cities. It shows that there is a big gap for health services between urban and rural.

Table 2-10 Republic of Tanzania
 Muhimbili teaching hospital rehabilitation project
 distribution of health facilities and hospital beds

| Distribution of Health Facilities | | | | | | Distribution of Hospital Beds | | | | |
|-----------------------------------|--------------|---------------|---------------|----------------|----------------|-------------------------------|-----------------|---------------|---------------|-----------------|
| Regions | Tertiary | Secndry | Hc | Disp | Total | Gov | NGO | Parastl | Other | Total |
| Arusha | 0 | 13 | 11 | 180 | 204 | 683 | 622 | 0 | 0 | 1305 |
| Coast | 0 | 6 | 10 | 113 | 129 | 411 | 55 | 141 | 0 | 607 |
| DarSM | 1 | 12 | 6 | 146 | 165 | 1936 | 30 | 0 | 38 | 2004 |
| Dodoma | 1 | 5 | 17 | 172 | 195 | 1461 | 250 | 0 | 0 | 1711 |
| Iringa | 0 | 13 | 16 | 141 | 170 | 629 | 909 | 66 | 0 | 1604 |
| Kagera | 0 | 11 | 12 | 145 | 168 | 250 | 1409 | 50 | 0 | 1709 |
| Kigoma | 0 | 5 | 10 | 109 | 124 | 387 | 200 | 0 | 0 | 587 |
| Kilimanjro | 1 | 12 | 17 | 135 | 165 | 730 | 1079 | 91 | 1 | 1901 |
| Lindi | 0 | 7 | 12 | 100 | 119 | 515 | 294 | 0 | 0 | 809 |
| Mara | 0 | 7 | 11 | 123 | 141 | 406 | 386 | 0 | 0 | 792 |
| Mbeya | 1 | 10 | 17 | 186 | 214 | 794 | 712 | 0 | 0 | 1506 |
| Morogoro | 0 | 11 | 17 | 183 | 211 | 621 | 678 | 220 | 0 | 1519 |
| Miwara | 0 | 5 | 13 | 112 | 130 | 743 | 500 | 0 | 0 | 1243 |
| Mwanza | 1 | 10 | 26 | 238 | 275 | 480 | 1720 | 0 | 0 | 2200 |
| Rukwa | 0 | 3 | 12 | 88 | 103 | 354 | 45 | 0 | 0 | 399 |
| Ruvuma | 0 | 7 | 13 | 129 | 149 | 347 | 933 | 0 | 0 | 1280 |
| Shinynga | 0 | 7 | 18 | 176 | 201 | 835 | 350 | 0 | 0 | 1185 |
| Singida | 0 | 6 | 12 | 129 | 147 | 376 | 290 | 0 | 0 | 666 |
| Tabora | 0 | 7 | 11 | 106 | 124 | 612 | 421 | 0 | 0 | 1033 |
| Tanga | 1 | 11 | 15 | 203 | 230 | 945 | 554 | 0 | 72 | 1571 |
| TOTAL | 6 | 168 | 276 | 2914 | 3364 | 13515 | 11437 | 568 | 111 | 25631 |

~~are regions for project site.~~

(3) Referral System

The referral structure in the medical service system is fairly well established from village level to the top referral hospitals.

At the village level there are supposed to be two Village Health Workers (VHW), preferably a male and a female. As well as preventive health promotion they are entitled to provide first aid. It is

estimated that about 5,500 VHWs have been trained in 2,750 villages during the last eight years.

Dispensary at the ward level is the lowest authorized health facility in the health system hierarchy and provide basic curative and preventive care.

Urban and Rural Health Centre (RHC) has about 15 beds for short-term inpatient care. It is designed to be a springboard for community health promotion and the intermediate referral point between dispensary and district hospital. It is also supposed to supervise an average of 5 dispensaries in the division.

The district level is the focal point for integrated health promotion and management and provides the technical backstopping for the health facilities in the district.

Regional hospital with a capacity of about 300 beds provides specialist services at least in internal medicine, general surgery, paediatrics and obstetrics/gynaecology. It also provides psychiatric, dental and ophthalmic services. The hospital also serves as district hospital for the district/s (urban/rural) where the hospital is situated. Regional hospital is supposed to provide technical backstopping to an average of about 5 districts in the region. A public health specialist is supposed to coordinate and promote public health services in the region.

Consultant hospital provides a wide range of advanced and specialised medical services. It also serves as a regional hospital for about five regions, providing technical backstopping.

In the referral system Muhimbili Medical Centre is the largest consultant hospital in the zone and the country.

Parastatal and private hospitals are not organised into the referral systems.

(4) State of Medical Staff

Table 2-13 shows medical personnel state. The total number of doctors was 1,637 as of 1991/92, which means there are 15,500 persons to one doctor, twice as many as the number of 7,300 of the neighboring country, Kenya, indicating the low number of the per capita doctor. On

the other hand, in Tanzania, medical assistants who can perform medical treatment in place of doctors are assigned and make up for the shortage of doctors. Although medical assistants are not licensed officially, they are allowed to perform every medical treatment except operation. Including medical assistants, the total number of doctors is about 3,800, which shows there are 1.85 doctors per 10,000 population. It is a higher rate of doctors than 1.40 doctors of Kenya.

Table 2-11 State of Medical Staff

| | Number | Survey year | No. / 10,000 pop. |
|-----------------------------------|--------|-------------|-------------------|
| •Doctor (MD, AMO, ADO) | 1,637 | (1991/92) | 0.63 |
| •Medical Assistants | 3,195 | (1988) | 1.22 |
| •Dentist | 5,391 | (1988) | 2.07 |
| •Nurse Grade "A" | 2,825 | (1988) | 1.08 |
| •Midwife | 8,066 | (1988) | 3.10 |
| •MCHA | 4,110 | (1988) | 1.58 |
| •Pharmacist | 64 | (1993) | 0.02 |
| •Health Officers | 590 | | 0.23 |
| •Administrator (Health Secretary) | 113 | (1993) | 0.04 |
| •Others | 11,644 | | |

(5) Training of Medical Staff

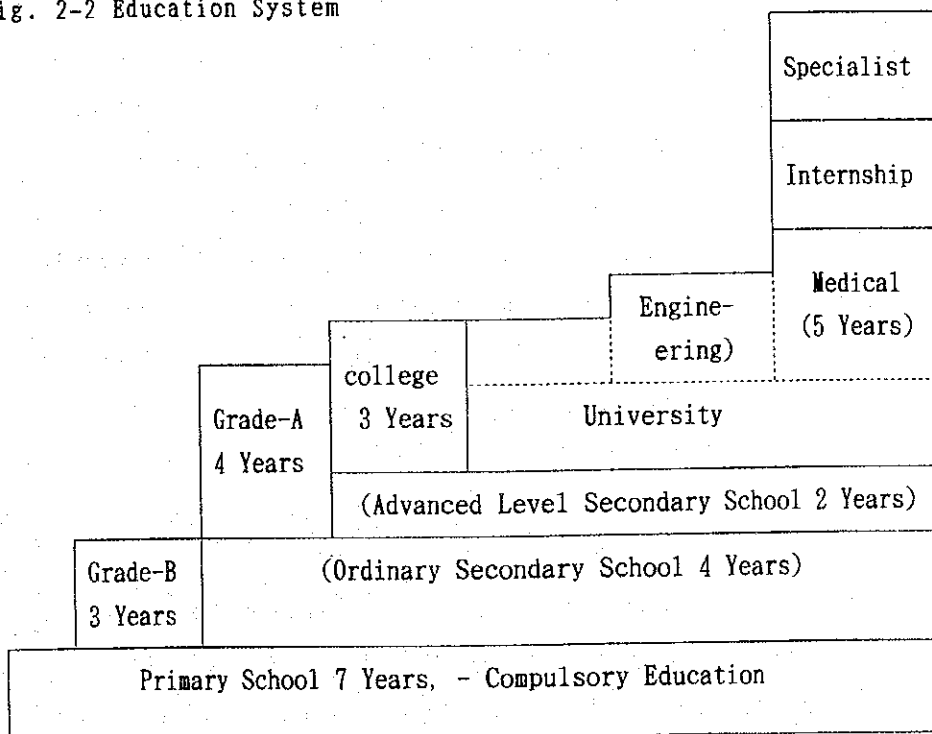
General education is provided through 7-4-2 system, which includes seven years at primary school, four years at secondary school, two years at advanced level secondary school, and after that further education of four years at university or three years at a special college is provided.

For becoming a doctor, the educational process entails five-year course of school of medicine at university after completing advanced level secondary school. After the five-year medical course, there is one year of internship education. Nurse, X-ray radiologist, and laboratory technician need to receive a three-year training programme at a medical training college. Enrolled Nurse is required to take a

four-year course at a medical training college after graduating from primary school. Medical assistants need to take a two-year special education after college, and are basically assigned to an institution subordinate to the consultant hospitals.

Students for doctor course are educated currently at the Muhimbili University, School of Medicine, which gives about 45 graduates each year. Paramedical education is provided in each consultant hospital and special hospital in addition to the above Muhimbili University. Registered and enrolled nurses, medical assistants, radiologists, clinical examiners, medical work therapists, and medical physiotherapists are also trained at these training facilities.

Fig. 2-2 Education System



Medical doctor requires 19 years education starting from primary school, and further 3-4 years for specialist.

(6) Supply System for Medical Consumables and Medicine

The expendable medical parts, medical supplies, etc. for the public medical institutions are provided by the Medical Store Department (M. S. D. for short). The Medical Store Department had so far been acting as the Central Medical Store, an organ under direct control of the Ministry of Health. However, the organization and management system were reformed in July, 1994 as a government affiliated autonomous body.

Adopting the self-supporting accounting system in the management, the commodities are all purchased in bulk. Then a list of price, containing the purchase cost, a certain margin (8.6%), etc., is distributed. The public medical organizations purchase the required items according to the distributed price list. The payment method differs according to the type of the medical organization, for example, the consultant hospital can make a direct payment by using the budget delivered by the Ministry of Health, whereas in the case of the medical organizations under control of regional governments, the payment had been normally made by regional government, to which the budget is allotted. However, because of unfavorable economic situation, the money delivered by the governments has come to be used in recent years for purposes other than the expendable medical parts, medical supplies, etc. Hence, the recent reformation of the Department made a system through which the Financial Bureau of the Ministry of Finance deposits the money directly with the Medical Store, which clears off the payment of each medical organization. It is reported that the adoption of this system has contributed to stabilization of prices, and ensured smooth supply of commodities to the medical organizations. The Medical Store has six distribution stations throughout the country--one in each zone--ensuring prompt and smooth supply. Furthermore, in addition to the supply of expendable medical parts, medical supplies, etc., the Medical Store is also dealing with the supply of basic medical appliances not needing high-level maintenance and control such as beds for patients, high-pressure autoclave, portable operating light, etc.

(7) Cost Sharing System

The Ministry of Health has introduced the Cost Sharing System since

July, 1994 in order to ensure sustainability of medical facilities. The following table shows the details of examination fee. According to an estimate by the MOH, 10-13 percent of the recurrent expenditure of each facility is expected to recover after full implementation of this system. On the other hand, since the examination fee is set at rather low price for the benefit of the low income bracket, improvement of the management status of facilities cannot rely on the above system. The Government is under consideration of increasing fee gradually in accordance with the solvency of patients.

Table 3-12 Cost Sharing System

| ITEM | Examination Fee | |
|-------------------------------------|-------------------|--------------|
| | Tanzania shilling | Japanese yen |
| Fee for a first visit (per patient) | Tsh 100 | some 20 |
| Hospital charge (per admission) | | |
| room for 8-20 patients (Grade 3) | 500 | 100 |
| room for 1-2 patients (Grade 1) | 1,000 | 200 |
| Medicine (per disease) | | |
| Examination | | |
| X-ray (per disease) | 500 | 100 |
| Ultrasound (per disease) | 500 | 100 |
| Clinical (per disease) | 1,000 | 200 |
| Eye clinic (per disease) | 1,000 | 200 |
| General Surgery | | |
| Major operation | 15,000 | 3,000 |
| Minor operation | 3,000 | 600 |
| Orthopedic | | |
| Major operation | 15,000 | 3,000 |
| Minor operation | 3,000 | 600 |
| Gynecology | | |
| Major operation | 15,000 | 3,000 |
| Minor operation | 4,000 | 800 |
| Brain | | |
| Major operation | 40,000 | 8,000 |
| Minor operation | 10,000 | 2,000 |

| ITEM | Examination Fee | |
|---------------------|-------------------|--------------|
| | Tanzania shilling | Japanese yen |
| Kidney, Urology | | |
| Major operation | 8,000 | 1,600 |
| Minor operation | 3,000 | 600 |
| E. N. T. | | |
| Major operation | 7,500 | 1,500 |
| Minor operation | 1,500 | 300 |
| Ophthalmology | | |
| Major operation | 15,000 | 3,000 |
| Minor operation | 2,000 | 400 |
| Delivery | | |
| Consultant Hospital | 400 | 80 |
| Regional Hospital | 300 | 60 |
| District Hospital | 100 | 20 |

(8) Regulation of X-ray Protection

The X-ray units in Tanzania are basically operated according to the standard specified by the International Atomic Energy Association (IAEA). In order to introduce a new X-ray unit in Tanzania, one must submit documents to the National Radiation Commission (NRC) indicating the type of the said unit, output, structure and the size of the installation site, qualification of the operator, etc. before getting the purchase (import) license. The license from NRC is also needed for renewing the existing X-ray unit. When introducing an X-ray unit of larger or different model, the room where the unit is to be installed must be reformed according to the specification to get the license from NRC. No new license is needed for installing a unit with capacity equivalent to or lower than the existing X-ray unit.

1-4 National Health Plan

The National Programme of Action (NPA) was drafted in 1993, setting the following nine objectives for improving the health and medical situation to be accomplished by the year 2000.

- ① Reduction of the death rate of infants (sucklings) from 111 persons per 1000 persons to 50 persons per 1000 persons
- ② Reduction of the death rate of infants under 5 years old from 114 persons per 1000 persons to 70 persons per 1000 persons
- ③ Reduction of the death rate of pregnant women by half: from 200-400 persons per 100,000 persons in 1990 to 100 persons-200 persons per 100,000 persons
- ④ Reduction of the excessively underfed children from 6% in 1985 to below 2%
- ⑤ Reduction of the lightly underfed children from 45% in 1985 to below 22%
- ⑥ Spread of safe drinking water and sanitary toilets
- ⑦ Spread of basic education to all children of school age
- ⑧ Reduction of the illiteracy rate of adults, particularly of women
- ⑨ Providing protection to the children under miserable predicament

In order to achieve these objectives, the following seven priority programmes are set in the National Programme of Action.

- ① Intensification of organisation
- ② Spread of education
- ③ Improvement in nourishment
- ④ Improvement in medical service
- ⑤ Improvement in drinking water and sanitation
- ⑥ Economic development of the poor
- ⑦ Protection of the children under miserable predicament

Out of these priority programmes the programme for improvement in medical service has the following sub-programmes set.

- ① Reduction of new AIDs patients by the year 1995
- ② Annihilation of infantile paralysis
- ③ Providing all pregnant women with pre-delivery care, care by midwives, and access to the medical facilities in case of abnormal pregnancy
- ④ Providing all couples with appropriate information and service to prevent pregnancies at an excessively early age, pregnancies at excessively short intervals, pregnancies at an excessively advanced age, and excessively large number of pregnancies
- ⑤ Raising the measles vaccination rate to 90% by 1995
- ⑥ Reducing the death rate from the measles to below 2% of the total death
- ⑦ Reducing the outbreak of malaria by 25%
- ⑧ Reducing the death rate of the infants under 5 years old from malaria by 50%
- ⑨ Reducing the outbreak of diarrhea by 25%
- ⑩ Annihilation of tetanus on newly born babies by 1995
- ⑪ Raising the vaccination rates of infantile paralysis, tuberculosis, diphtheria, whooping cough, tetanus and measles for the infants under 1 year old to 90%
- ⑫ Reducing by one-third the death rate of the infants under 5 years old due to respiratory disease

In order to successfully carry out the medical service improvement project, the "Priority Social Action Programme" and "Rolling Plan", in which the diffusion of basic health service and the provision of safe water are advocated, are promoted.

1-5 Financial Situation

(1) Health budget

1) Operating budget

Table 2-14 shows the details of expenditures in the working budget of the Ministry of Health for the fiscal years 1988/1989. Because of the inadequate information and data, it is practically impossible to evaluate the relative and optimum ratios between preventive and treatment activities.

The expenditure related to hospital service covers 68% of the

budget, out of which 77% is the government grants and subsidies, distributed to 17 designated regional hospitals (amounting to Tsh 298 million), volunteer hospitals (Tsh 69 million), Muhimbili Medical Centre (Tsh 783 million), Consultant Hospitals in Bugando and Kilimanjaro (Tsh 285 million).

The money allotted for preventive activity in hospitals such as vaccination and injection, etc. is 5.9% of the budget. The expenditure for education and training, covering 10% of the budget, goes almost entirely for the health care workers involved in primary medical service.

The responsibility for preventive health care lies practically with the urban and rural authorities, and the expenditures for these activities are, therefore, covered by the working budget of the district. However, the health budget of the district government covers the district hospitals as well as the regional hospitals, and is mostly allotted for treatment and care.

Table 2-12 Working Expenditure Budget of the Ministry of Health for Fiscal Years 1988/1989

| Expenditure item | Amount (Unit: 1000 Tsh) | % of total budget |
|---|-------------------------|-------------------|
| Administration cost and general expenses | 51,923.6 | 1.9 |
| Cost related to hospital service, etc. | 1,875,643.3 | 67.6 |
| Preventive medical activities | 162,980.6 | 5.9 |
| Education and training programmes for people involved in medical activities | 290,440.6 | 10.5 |
| Supply of expendable medical goods | 33,347.6 | 1.2 |
| Public sanitation program | 3,268.5 | 0.1 |
| Medical Supplies Research Centre | 41,162.2 | 1.5 |
| Social welfare | 309,258.2 | 11.1 |
| National Food Control Committee | 6,049.8 | 0.2 |
| Total | 2,774,074.4 | 100.0 |

From: The Working Expenditure Budget for 1989/1990, the Ministry of Health of the United Republic of Tanzania

(2) Budget plan

The gross national budget of Tanzania for 1991-1996 shows an average increase of about Tsh 26 billion per year, almost equivalent to an annual 8% growth. Based on this calculation, the national budget for 1997/1998 is estimated to amount to Tsh 330 billion.

The budget allotted for health in Tanzania is estimated to be 6% of the national budget on average. (The Ministry of Health set this figure 10%-13% as its target. The average figure of African countries in sub-Saharan Africa is estimated to be 4%-5%.)

Hence, the total budget allotted to the Ministry of Health comes to be 6% of Tsh 330 billion = Tsh 19.8 billion. The Ministry of Health uses 20% of its budget (= Tsh 4 billion) for development programmes, and the rest (= Tsh 15.8 billion) for working expenditures.

Table 2-13 National Budget (Expenditure)

Unit: Mil. Tsh

| Item | 1991/92 | 1992/93 | 1993/94 | 1994/95 | 1995/96 |
|-------------|---------|---------|---------|---------|---------|
| Recurrent | 149,866 | 171,728 | 200,377 | 226,135 | 250,643 |
| Development | 11,365 | 30,000 | 23,490 | 18,342 | 13,812 |

Source: MOH

2. Health Development Plan

"Providing its citizens with basic social services" has been a consistent policy of the government of Tanzania since the 1960s. Right from the early stage of this programme it has been the top priority to spread the primary education, to provide health care service to people residing in villages and remote areas, and to supply clean, drinking water to all citizens.

However, the economic recession and slump over a period of more than 10 years has seriously hit Tanzania, eating little by little into the objectives of social sectors that, otherwise, could have been achieved at an early stage.

The "Priority Social Action Programme (PSAP)" has been advocated as

part of the "Economic Social Action Programme (ESAP)" in the "Economic Restoration Project" in order to reverse the flow of economic slump and to settle the economic chaos caused by economic reformation.

(1) Priority Social Action Programme

The Priority Social Action Programme contains practical options to fulfil the following objectives: to mobilise resources to prevent further deterioration of the social sectors and restore performance in the short run; to move towards a more sustainable social service delivery system in the medium term; and to ensure an improved system of food self-sufficiency and raise the levels of employment. More specifically the objectives are subdivided into the following.

- (i) to improve efficiency and responsibility of community support and to make institutional and management reforms which can improve the delivery of social services;
- (ii) to restore an adequate supply of and effective demand for basic instructional materials in schools and to improve the learning environment;
- (iii) to restore an adequate supply of essential drugs and health care equipment in order to ensure the universal basic health services;
- (iv) to rehabilitate and improve maintenance of existing water facilities in order to provide improved access to safe water;
- (v) to improve the distribution of food from surplus to deficit areas so as to reduce the wide gap between producer and consumer prices for staple foodstuffs;
- (vi) to support community-based public work schemes to create employment opportunities for low income people and improve their access to food and other essential goods and services, with preference being given to women;
- (vii) to provide a nutritional "safety-net" if necessary for families who are unable to earn enough to buy adequate food.

Table 2-14 Priority Social Action Programme: Health Funding

(US\$ Millions)

| | 1989/1990 | 1990/1992 | 1991/1992 | TOTAL |
|--|--------------|--------------|--------------|---------------|
| TOTAL REQUIREMENTS | 45.50 | 50.00 | 57.50 | 153.00 |
| Drugs | 26.00 | 27.50 | 29.00 | 82.50 |
| Equipment/Suppliers | 8.00 | 7.00 | 5.00 | 21.00 |
| Em. Ref. Transp. | 2.40 | 2.40 | 2.40 | 7.20 |
| AIDS Control | 1.00 | 1.00 | 1.00 | 3.00 |
| Health Finan. Schemes | 0.40 | 0.40 | 0.40 | 1.20 |
| Health Fac. Rehab | 2.00 | 4.00 | 7.00 | 13.00 |
| Health Magmt. Trg. | 0.70 | 0.70 | 0.70 | 2.10 |
| Village BEN Init. | 3.00 | 7.00 | 11.00 | 23.00 |
| EXTERNAL SUPPORT ALREADY IDENTIFIED | 26.00 | 33.20 | 36.60 | 96.30 |
| Drugs | 18.30 | 22.00 | 22.50 | 62.80 |
| Equipment/Suppliers | 6.00 | 2.10 | 2.40 | 5.50 |
| Em. Ref. Transp. | 0.00 | 0.00 | 0.00 | 0.00 |
| AIDS Control | 1.00 | 1.00 | 1.00 | 3.00 |
| Health Finan. Schemes | 0.30 | 0.20 | 0.10 | 0.50 |
| Health Fac. Rehab | 1.20 | 2.40 | 3.20 | 6.80 |
| Health Magmt. Trg. | 0.50 | 0.70 | 0.60 | 1.80 |
| UNFUNDED GAP | 19.50 | 16.30 | 20.90 | 56.70 |
| Drugs | 7.70 | 5.50 | 6.50 | 19.70 |
| Equipment/Suppliers | 7.00 | 4.90 | 3.60 | 15.50 |
| Em. Ref. Transp. | 2.40 | 2.40 | 2.40 | 7.20 |
| AIDS Control | 0.00 | 0.00 | 0.00 | 0.00 |
| Health Finan. Schemes | 0.10 | 0.20 | 0.30 | 0.60 |
| Health Fac. Rehab | 0.80 | 1.60 | 3.80 | 6.20 |
| Health Magmt. Trg. | 0.20 | 0.00 | 0.10 | 0.30 |
| Village BEN Init. | 1.30 | 1.70 | 4.20 | 7.20 |

Source: World Bank report No.8217-TA
Health and Nutrition Project Feb 1990

(2) Development Budget

Table 2-15 shows the shares of the planned sector of total expenditures in the 3 year Rolling Plan (1991-1994). Prospectively, MOH budgetary plan shows an increase of the planned sector share for recurrent expenditure in health from 9.7% to around 14%. While the past trend of recurrent expenditure showed a decline from 11% (1991/92) to 9.7% (1992/93), that for development showed increments for the same period (6.8% to 7.2%). The Tanzanian government is planning to restrict the expenditure to minimal increase for 1993/94 (7.3%) through 1995/96 (7.5%).

Table 2-15 MOH Budget 3 year Rolling Plan
GOT Planned Sector Shares for Health (%)

| Expenditure | 1991/92 | 1992/93 | 1993/94 | 1994/95 | 1995/96 |
|-------------|---------|---------|---------|---------|---------|
| Recurrent | 11.0 | 9.7 | 10.8 | 12.0 | 13.8 |
| Development | 6.8 | 7.2 | 7.3 | 7.4 | 7.5 |

Source: MOH

There was a statistical decline of health share of total GOT expenditures between 1991/92 and 1992/93 (4.9% to 4.24%) with prospective increments for 1993/94, 1994/95, 1995/96 (4.74%, 5.25% and 6.05%, respectively).

Table 2-16 % of Social Sector of Total GOT Expenditure

| Social Services | 1991/92 | 1992/93 | 1993/94 | 1994/95 | 1995/96 |
|-------------------------------------|---------|---------|---------|---------|---------|
| Health | 4.92 | 4.24 | 4.74 | 5.25 | 6.05 |
| Education | 5.24 | 4.51 | 4.81 | 5.42 | 6.04 |
| Community Dev., Women & Children | 0.50 | 0.39 | 0.40 | 0.49 | 0.49 |
| Labor & Youth | 0.90 | 0.69 | 0.71 | 0.80 | 0.99 |

Source: MOF

3. Programmes of International Aid Organization and Other Donors

Table 2-17 shows recent assistance from Aid Organizations for medical and health sector.

Table 2-17 Bilateral and Multilateral Assistance
in Medical and Health Sector

| Country | Name of Project | Term | Area |
|----------------|---|------------------------------|--|
| United Kingdom | 1. Family Health Project | 1992-1994 | Mbeya(urban area) |
| | 2. Project for population, Health, Nutrition | 1992-1994 | Mbeya(rural area) |
| Germany | 1. Family Health Project | 1990-1995 | Bagamoya, Rombo, Lushoto, Muheza na Pemba. |
| Denmark | 1. Primary Health care Promoting Project | 1994-2000 | Pwani, Shinyanga, Mbeya, Rukwa. |
| | -Project for essential medicine supply | | Nationwide |
| | 2. Rehabilitation Project of Kogera Regional Hospital | | Kegera. |
| | 3. Dental Health Project | | Nationwide |
| Japan | 1. Malaria Control Programme | | Dar Es Salaam, Tanga |
| UNICEF | 1. Nutrition Improvement Project | | Iringa |
| | 2. Infants Relief Project | | Mtwara, Lindi, Ruvuma, Kagera, Iringa, Morogoro, Singidana Kilimanjaro. |
| WHO | Financial Assistance to Health Organization | | Rural area |
| World Bank | Health/Nutrition Project | 1990-95 US\$47.5 mil. | 10 areas: Liwale, Nachingwea, Lindi, Kilwa, Iramba, Igunga, Nzega, Kibona, Kasulu. |

4. Record of Aid from Japan

Table 2-18 shows Japan's Aid Activities during the past five years. For medical and health sector, Malaria Control Programme was implemented.

Table 2-18 Aid Activities According to Year and Project Type

| F. Y. | Grant Aid | (Hundred Million Yen) |
|---|--|--|
| 1989 | • Project for Improvement of Agricultural Storage and Transportation System | (4.80) |
| | • Development Project for Medium Wave Radio Broadcasting Network | (8.70) |
| | • Telecommunications Network Rehabilitation Project in Dar es Salaam Area | (6.10) |
| | • Non-Project Grant Aid | (20.00) |
| | • Food Aid | (3.00) |
| | • Aid for Increased Food Production | (5.92) |
| | • Debt Relief | (12.03) |
| | • Small-Scale Grant Aid (1 project) | (0.04) |
| | 1990 | • Development Project for Medium Wave Radio Broadcasting Network |
| • Telecommunications Network Rehabilitation Project in Dar es Salaam Area | | (4.94) |
| • Malaria Control Programme | | (3.00) |
| • Agricultural Transportation Reinforcement Project | | (8.00) |
| • Food Aid | | (3.00) |
| • Aid for Increased Food Production | | (5.50) |
| • Debt Relief | | (8.31) |
| • Emergency Relief(Deluge) | | (0.20) |
| • Small-Scale Grant Aid (1 project) | | (0.05) |
| 1991 | • Rehabilitation Project for Urban Road Network | (8.96) |
| | • Malaria Control Programme | (3.04) |
| | • Non-Project Grant Aid | (35.00) |
| | • Food Aid | (2.00) |
| | • Aid for Increased Food Production | (5.50) |
| | • Debt Relief | (4.70) |
| | • Debt Relief | (4.46) |
| | • Small-Scale Grant Aid (1 project) | (0.05) |
| 1992 | • Rehabilitation Project for Urban Road Network | (9.87) |
| | • Project for Electric Power Distribution Network in Dar es Salaam | (7.92) |
| | • Nutrition Improvement Project | (3.00) |
| | • Non-Project Grant Aid | (25.00) |
| | • Food Aid | (3.00) |
| | • Aid for Increased Food Production | (6.50) |
| | • Emergency Relief (Deluge)(Provided with emergency relief supplies from JICA) | (0.13) |
| | • Debt Relief | (6.08) |
| | • Debt Relief | (5.32) |
| • Small-Scale Grant Aid (1 project) | (0.10) | |
| 1993 | • Rehabilitation Project for Urban Road Network | (13.33) |
| | • Project for Road Rehabilitation and Maintenance | (3.65) |
| | • Telecommunications Network Rehabilitation Project in Dar es Salaam Area | (9.79) |
| | • Malaria Control Programme | (6.74) |
| | • Food Aid | (2.00) |
| | • Food Aid | (3.00) |
| | • Aid for Increased Food Production | (7.50) |
| | • Debt Relief | (6.04) |
| | • Debt Relief | (5.98) |
| • Small-Scale Grant Aid (1 project) | (0.20) | |