

Chapter 3 Implementation Plan

Chapter 3 Implementation Plan

3-1 Implementation Plan

3-1-1 Implementation Concept

This project is to be implemented in conformance to the framework of the grant aid that is extended by the Japanese government. The project is to be officially implemented after it is approved by the governments of the two countries and an Exchange of Notes is concluded. Subsequently, the government of Swaziland will select a Japanese consultant and the detail design work for implementation of the project will commence. When the detailed design documents are completed, a equipment procurement contractor who is incorporated in Japan and has been selected through tendering will procure the equipment and install them.

It is to be noted that the basic points and matters that should be noted in regard to the implementation of this project are as follows.

(1) Implementation system

In implementing this project, the Ministry of Health and Social Welfare will have the ultimate responsibility to perform overall management of the project.

(2) Consultant

After the Exchange of Notes is concluded by the governments of the two countries, the Japanese consultant will immediately conclude a consulting agreement with the Ministry of Health and Social Welfare in conformance to the procedural protocol imposed upon the Grant Aid, which is implemented by the Japanese government. This agreement will become valid after verification by the Japanese government and, based upon the agreement, the consultant will carry out the following services.

1. Detail design stage: preparation of Tender document, detail design specifications and other technical reference material
2. Tendering stage: cooperate in selecting a equipment procurement contractor and in preparing a procurement contract
3. Procurement stage: supervision of equipment procurement work, installation and training in operation and maintenance

(3) Equipment procurement contractor

The equipment procurement contractor will be selected through tendering and will sign a contract with the government of Swaziland. This contract, too, will become valid after verification by the Japanese government and the contractor will procure and deliver the required equipment based upon the contract. In addition, the contractor will provide the recipient institution in Swaziland with

technical training in regard to installation operation and maintenance of those equipment.

(4) Japan International Cooperation Agency

The Grant Aid Project Management Department of the Japan International Cooperation Agency will extend guidance to the consultant and the procurement contractor to ensure that this project is implemented correctly in conformance to the system of the Grant Aid. In addition, whenever necessity arises, it will hold talks with the Swaziland government to promote the implementation of the project.

3-1-2 Implementation Conditions

(1) Renovation and expansion plan for individual recipient hospitals

There seems to be no particular problems arising in regard to the work undertaken during the first phase of the project. However, procurement of the second phase equipment is to be implemented only on condition that the hospital renovation and expansion plan at the recipient hospital shall be carried out on schedule by the Swaziland side to secure installation locations for the equipment to be procured.

(2) Work undertaken by the Ministry of Health and Social Welfare and the individual hospital

In consideration of the fact that the equipment procured in Japan first reach Durban in South Africa for transportation to further destinations, arrangement beforehand must be made to ensure that the equipment is allowed to go through the customs at Durban and at the Swaziland border without any unnecessary delay and that the procedural steps required to apply for exemption from customs tariffs and other import restrictions in Swaziland can be carried out in a smooth manner.

3-1-3 Scope of work

(1) Scope of work of the Japanese side

The Japanese side will be responsible for carrying out the following tasks in regard to the equipment procurement and installation in this project.

1. Consultant services

- * Preparation of tender documents and tendering instructions with respect to the equipment within the scope of this project
- * Selection of the procurement contractor and extending cooperation to ensure the smooth conclusion of the contract
- * Supervision of work related to the procurement of equipment

2. Equipment procurement and installation

- * Procurement of equipment within the scope of this project and transportation and

delivery thereof to the recipient medical facilities

- * Installation and adjustment of the equipment within the scope of this project during test operations

Providing instructions and guidance with respect to the operating methods and maintenance methods for the equipment within the scope of this project.

Table 3-1 Renovation and Expansion Plan of Hospital

| HOSPITAL | CONTENTS |
|--------------------|-----------------------------------------------|
| MBABANE HOSPITAL | Expansion of CT Room, Renovation of Radiology |
| PIGGSPEAK HOSPITAL | Expansion of Hospital |
| MANKAYANE HOSPITAL | Expansion of Hospital |

(2) Scope of work of the Swaziland side

The Swaziland side will carry out the tasks related to renovation and expansion of facilities that are not included within the responsibility of the Japanese grant aid. The details of the works to be assumed by the Swaziland side are as follows.

- 1 Renovation and expansion of facilities
- 2 Work related to installation of equipment
 - * Relocation or removal of existing equipment
 - * Provision of temporary storage space for equipment within the site
 - * Securing a equipment delivery path
 - * Preparing the installation locations
 - * Facility preparation work required for the installation of equipment (electrical wiring to the installation locations, water supply and waste water piping, outlets and exhaust vents)

3-1-4 Consultant Supervision

Based upon the policy of the Grant Aid set forth by the Japanese government, the consultant organizes a project team to ensure that the project is carried out in a smooth manner while being fully cognizant of the objectives of the basic design.

The following are consultant supervision guidelines.

- (1) By establishing close communication with the relevant personnel involved in the project in the related agencies of both countries, the consultant will make the utmost effort to ensure prompt completion of equipment supply.
- (2) The consultant will extend prompt and appropriate guidance and advice to those who are involved in the actual installation work while maintaining a neutral and fair stance.
- (3) The consultant will verify that the equipment are installed properly and that all the

requirements of the contract have been met, and then the consultant will witness the hand over of the equipment before completing his tasks by obtaining approval upon receiving of the equipment from the Swaziland side.

3-1-5 Procurement Plan

(1) Methods for the selection of a contractor and type of contract

In order to select a contractor who is to be responsible for the procurement of the equipment, a public tender solicitation will be made for the participation of Japanese corporations in Japan and the final selection will be made based on the evaluations of individual tender offers.

The contract will be one lot contract with the types of equipment specified in the contract. The responsibilities of the contractor will encompass the entire range of work from supply, manufacture and delivery of the equipment in the contract, guidance in regard to installation, adjustment and test operation and technical guidance in regard to operation and maintenance.

(2) Procurement of equipment

In principle, the equipment that are to be acquired to execute this project will be procured in Japan. However, the requirements listed below will be fully deliberated in order to select equipment that are deemed better acquired locally or procured from a third country due to such factors as price, performance, ease of maintenance (locally available after-sales service, etc.) and familiarity of the users in Swaziland with respect to the operation thereof.

1. There are manufacturer dealerships or branches in Swaziland or South Africa
2. Maintenance and inspection can be performed easily and maintenance systems are well established.
3. Procurement and delivery can be implemented within the term of E /N.

(3) Method of transportation

1The equipment procured in Japan will be transported over land by vehicle in Japan and from Japan to Durban in South Africa they will be transported by sea. They will be transported by vehicle from Durban to the project site.

2The equipment to be procured locally and the equipment to be procured from a third country will be transported directly to the project site.

3-1-6 Implementation Schedule

(1) Implementation schedule

This project will be executed upon approval by the Japanese cabinet and

implementation procedure to be taken after the Exchange of Notes between the two countries is concluded, are as follows.

1. Conclude an agreement between the recipient ministry and a Japanese foreign exchange bank in regard to payment of required for the implementation of the project.
2. Conclude a consultant agreement between the recipient ministry and a Japanese consultant.
3. Verification of the agreement in (2.) above by the Japanese government.
4. Preparation of tender documents and detail design by the consultant.
5. Approval of the tender documents by the recipient ministry and preparation of tendering by the consultant.
6. Implementation of tendering and evaluation of the offers.
7. Conclude a contract between the recipient ministry and a corporation registered in Japan in regard to procurement of equipment.
8. Verification of the contract in (7.) above by the Japanese government.
9. Carrying out the procurement by the contractor and supervising work related to procurement by the consultant.
10. Hand-over of installed equipment upon completion.

(2) Implementation periods

The period of time required for various types of work to be performed in Japan after concluding the Exchange of Notes is approximately 11 months for both the first and second phases as shown in Table 3-2.

Table 3-2 Time and Contents (1. and 2. Phase)

| CONTENTS | TIME (Approx) |
|-----------------------------------------------|---------------|
| a) Consultant Agreement / Detail Design | 0.8 Month |
| b) Detail Design / Preparing Tender Documents | 1.5 Months |
| c) Approval of Tender Documents | 0.5 Month |
| d) Tender / Evaluation / Procurement Contract | 1.2 Months |
| e) Manufacture of Equipment | 5.0 Months |
| f) Transportation | 1.0 Month |
| g) Installation | 1.0 Month |
| TOTAL | 11.0 Months |

Figure 3-1 an implementation schedule diagram corresponding to the schedule shown above is given in the next page.

Fig 3-1 Implementation Schedule

Phase 1 Implementation Timetable

| Year | 1997 | | | | | | | | | | | | 1998 | | | | | | | | | | | | 1999 | | | | | | | | | | | | 2000 | | |
|------------------------------------------|------|---|---|---|---|---|----|----|----|---|---|---|------|---|---|---|---|---|----|----|----|---|---|---|------|---|---|---|---|---|----|----|----|---|---|---|------|--|--|
| Fiscal Year | 1997 | | | | | | | | | | | | 1998 | | | | | | | | | | | | 1999 | | | | | | | | | | | | 2000 | | |
| Month | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 1 | 2 | 3 | | | |
| Project Month | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 1 | 2 | 3 | | | |
| Detail Design | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Conclusion of E/N | | | | | * | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Consultant Agreement | | | | | ■ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Detail Design | | | | | | □ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Preparation of Tender | | | | | | | ■ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Approval of Tender documents | | | | | | | | □ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Tender Preparation | | | | | | | | | ■ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Tender/Evaluation/Contract with Supplier | | | | | | | | | | ■ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Procurement | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Equipment Procurement | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Transportation | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Installation & Completion | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Phase 2 Implementation Timetable

| Year | 1997 | | | | | | | | | | | | 1998 | | | | | | | | | | | | 1999 | | | | | | | | | | | | 2000 | | |
|------------------------------------------|------|---|---|---|---|---|----|----|----|---|---|---|------|---|---|---|---|---|----|----|----|---|---|---|------|---|---|---|---|---|----|----|----|---|---|---|------|--|--|
| Fiscal Year | 1997 | | | | | | | | | | | | 1998 | | | | | | | | | | | | 1999 | | | | | | | | | | | | 2000 | | |
| Month | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 1 | 2 | 3 | | | |
| Project Month | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 1 | 2 | 3 | | | |
| Detail Design | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Conclusion of E/N | | | | | | | | | | | | | | | | | | | * | | | | | | | | | | | | | | | | | | | | |
| Consultant Agreement | | | | | | | | | | | | | | | | | | | | ■ | | | | | | | | | | | | | | | | | | | |
| Detail Design | | | | | | | | | | | | | | | | | | | | | □ | | | | | | | | | | | | | | | | | | |
| Preparation of Tender | | | | | | | | | | | | | | | | | | | | | | ■ | | | | | | | | | | | | | | | | | |
| Approval of Tender documents | | | | | | | | | | | | | | | | | | | | | | | □ | | | | | | | | | | | | | | | | |
| Tender Preparation | | | | | | | | | | | | | | | | | | | | | | | | ■ | | | | | | | | | | | | | | | |
| Tender/Evaluation/Contract with Supplier | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Procurement | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Equipment Procurement | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Transportation | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Installation & Completion | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

□ In Japan ■ In Swaziland

Swaziland Side Implementation Timetable of Hospital Expansion Plan

| Fiscal Year | 1997 | | | | | | | | | | | | 1998 | | | | | | | | | | | | 1999 | | | | | | | | | | | |
|--------------------|----------------|---|---|---|---|---|----|----|----|---|---|---|-----------------|---|---|---|---|---|----|----|----|---|---|---|-----------------|---|---|---|---|---|----|----|----|---|---|---|
| Month | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 1 | 2 | 3 |
| Phase | ← Phase 1 → | | | | | | | | | | | | ← Phase 2 → | | | | | | | | | | | | | | | | | | | | | | | |
| MBABANE HOSPITAL | □ | | | | | | | | | | | | □ | | | | | | | | | | | | □ | | | | | | | | | | | |
| PIGGSPEAK HOSPITAL | □ | | | | | | | | | | | | □ | | | | | | | | | | | | □ | | | | | | | | | | | |
| MANKAYANE HOSPITAL | □ | | | | | | | | | | | | □ | | | | | | | | | | | | □ | | | | | | | | | | | |
| | Total 9 months | | | | | | | | | | | | Total 20 months | | | | | | | | | | | | Total 28 months | | | | | | | | | | | |

□ Detail Design ▨ Expansion Plan

3-1-7 Obligations of recipient country

A Grant Aid will be extended by Japan on condition that the recipient country fulfills the following obligations.

(1) Budget procurement

A budget of approximately 8,400,000 Emalangeni (approximately 252 million yen) required for the local work which must be executed for the implementation of this project shall be procured.

(2) Personnel procurement

A doctor specializing in x-ray radiography who is capable of analyzing diagnostic images shall be acquired to utilize a CT scanner to be installed at the Mbabane Hospital in the second phase of the project.

A surgeon and a clinical laboratory technician shall be acquired to utilize equipment in operation theater and equipment for clinical examination to be installed at Mankayane Hospital in the second phase of the project. A specialist in radiology department shall be acquired to utilize fluoroscopy x-ray unit.

(3) Necessity to observe the renovation / expansion work schedule

No particular problem is foreseen in regard to the facilities where equipment is to be installed during the first phase of the project. However, the second phase of the project can be only implemented on condition that the renovation and expansion plan for facilities at the recipient hospitals (see Table 3-3) shall be carried out on schedule, it is essential that the work plan shall be implemented in a smooth manner. Therefore, the procurement of the budget for carrying out the work plan, the details of the plan (implementation schedule diagrams, design drawings, etc.) shall be reported to the JICA office in South Africa as necessary, and the Japanese side will make decisions as to whether or not the second phase of the project is to be implemented and also as to when the second phase is to be implemented.

Table 3-3 Outline of the Renovation and Expansion Plan

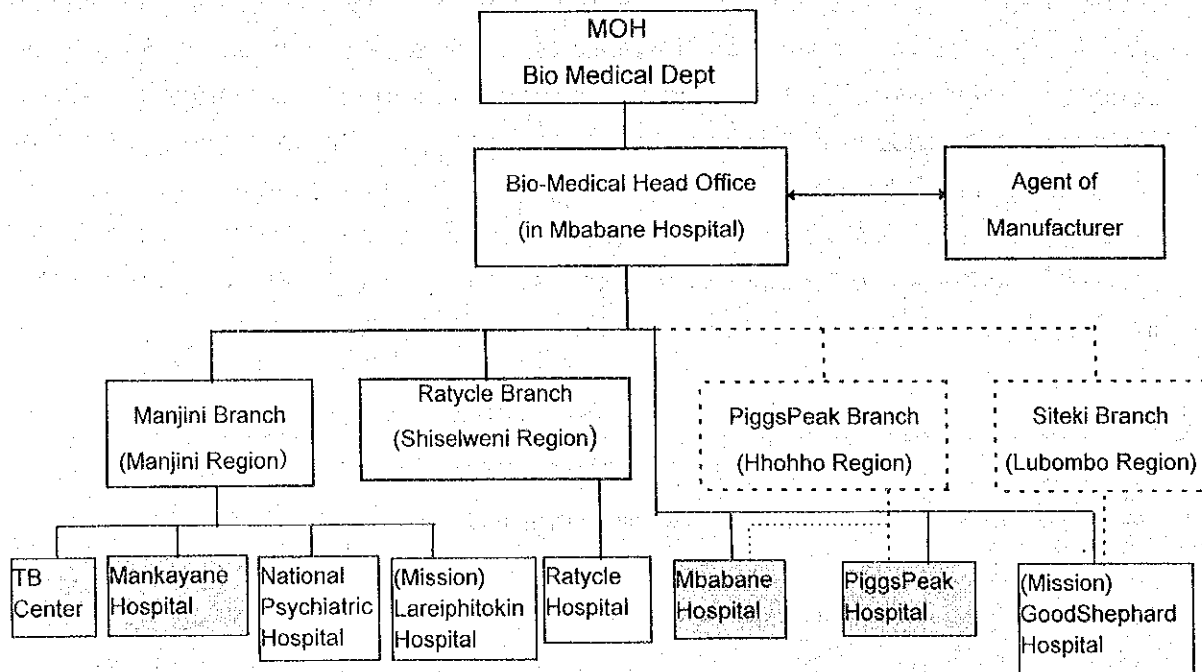
| HOSPITAL | CONTENTS OF EXPANSION PLAN | BUDGET |
|--------------------|-----------------------------------------------|------------------------------------------|
| MBABANE HOSPITAL | Expansion of CT Room, Renovation of Radiology | Total E1,000,000 (Approx ¥30,000,000) |
| PIGGSPEAK HOSPITAL | Expansion of General Facility of Hospital | E 5,000,000 (Approx ¥150,000,000) |
| MANKAYANE HOSPITAL | Expansion of General Facility of Hospital | E 2,400,000 (Approx ¥72,000,000) |
| TOTAL | | E 8,400,000 (Approx ¥252,000,000) |

3-2 Operation and Maintenance Plan

(1) Operation and maintenance system

The Biomedical Department of the Ministry of Health and Social Welfare is in charge of operation and maintenance of the equipment at the recipient hospitals where the project is to be carried out. Currently, the Biomedical Head Office is located at the Mbabane Hospital and is equipped with a workshop and a warehouse for housing equipment. It is operated by a total of 28 staff members including three University-educated engineers, 10 high school-educated technicians, drivers, etc. The head office has two Branch Offices, i.e., the Manzini Branch Office (Manzini region) and Latikulu Branch Office (Shiselweni region). The Manzini Branch Office handles operation and maintenance work for equipment at the TB Center and the Mankayane Hospital and the head office directly handles operation and maintenance work for the equipment at the Mbabane Hospital and the Piggs Peak Hospital. Two more branch offices are scheduled to be opened in 1998. Figure 3-2 illustrates the system under which Biomedical Department performs operation and maintenance work.

Fig 3-2 System of Operation and Maintenance



(2) Functions of the Biomedical Head Office

The Biomedical Head Office has the following main tasks

- * Dispatch technical personnel from the head office to perform renovation of equipment in response to requests for equipment renovation issued by the director of the hospital.
- * Provide technical advice for the purchase of new equipment and assist in the purchasing procedures.
- * Work related to maintenance contracts concluded with equipment manufacturer dealerships in South Africa.
- * Order replacement parts and request renovations of equipment by manufacturer dealerships or manufacturers in South Africa.
- * Store and manage equipment manuals, replacement parts, etc.
- * Dispatch head office personnel to participate in technical training seminars held by equipment manufacturers overseas.
- * Invite technical personnel from equipment manufacturers to hold daily-inspection seminars and the like to achieve an improvement in equipment operating expertise including inspections to be held before and after operation of equipment held on behalf of operators of equipment such as doctors and nurses.

(3) Level of technical expertise at the Biomedical Head Office

Major equipment at the hospitals is registered and managed by the head office computer. In addition, replacement parts for various equipment are entered in the ledger for management and the operating manuals for the major equipment are kept in an organized manner. While their workshop is equipped with regular tools, repair tools and measuring equipment such as testers and synchroscopes, they entrust regular inspection and emergency renovation of x-ray equipment and clinical test equipment to equipment manufacturers or dealers in South Africa under maintenance contracts since these equipment require an advanced expertise in renovation. Many of the technical personnel at the head office have had experience in participating in training seminars held by the equipment manufacturer dealerships in South Africa.

Although some of the items to be procured in implementation of the project will require service by the equipment manufacturer dealerships in South Africa under maintenance contracts (x-ray equipment and some of the clinical test equipment) the technical personnel at the head office is expected to be able to service other items.

(2) Operation and maintenance budget

The implementation of this project will necessitate an increase in the budget of a total of 19,473,600 (approximately 649,120 Emalangeni) to operate and maintain the newly procured equipment, with the expected expenses for operating and maintaining the items to be procured during the first phase amounting to 10,586,950 (approximately 352,900 Emalangeni) annually and the expenses for operating and maintaining the items to be procured during the second phase expected to amount to 8,886,650 (296,220 Emalangeni) annually (see Table 4-4). Of the entire budget of the Ministry of Health and Social Welfare, 2.4 ~ 2.5% is allotted to the Biomedical Head Office, which oversees the operation and maintenance of the medical equipment, as shown in Table 3-5.

When this project is completed, the operation and maintenance costs for the items procured in the implementation of the project will account for more than 21% of the overall budget of the Biomedical Head Office. However, the budget allotted to the Biomedical Head Office has been increasing by approximately 15% every year and in consideration of the fact that the expenses necessitated by the completion of the project only account for 0.5% of the budget of the Ministry of Health and Social Welfare that the Biomedical Head Office has been successfully operating and maintaining the existing x-ray equipment and the like through maintenance contracts by allotting expenses appropriately for acquiring such contracted maintenance services, it can be safely assumed that the items to be procured through implementation of the project will also be operated and maintained without problems. It is to be noted that the vice minister of the Ministry of Health and Social Welfare made a firm commitment to the basic design study team that a sufficient portion of the budget will be allotted to operate and maintain the equipment to be procured through implementation of the project.

Table 3-4 Maintenance Fee (Annual)

| HOSPITAL | PHASE 1 | PHASE 2 | TOTAL |
|--------------------|---------------|--------------|---------------|
| MBABANE HOSPITAL | ¥6,432,650.- | ¥5,252,000. | ¥11,684,650.- |
| TB CENTER | ¥7,200.- | | ¥7,200.- |
| PIGGSPEAK HOSPITAL | ¥3,845,800.- | ¥46,400.- | ¥3,892,200.- |
| MANKAYANE HOSPITAL | ¥301,300.- | ¥3,588,250.- | ¥3,889,550.- |
| TOTAL(¥) | ¥10,586,950.- | ¥8,886,650.- | ¥19,473,600.- |
| TOTAL(E) | E 352,900 | E 296,222.- | E 649,120.- |

Table 3-5 Budget of Bio-Medical Dept

| CONTENTS | 1996 | 1997 | Ratio |
|----------------------------------|--------------------|--------------------|--------------|
| Transportation Expenses | 29,260 | 33,649 | 1.15% |
| Postage | 39,148 | 44,202 | 1.13% |
| Service Charge (Maintenance Fee) | 2,097,160 | 2,421,733 | 1.15% |
| Consumables | 12,600 | 14,490 | 1.15% |
| Equipment, Spare Parts | 455,744 | 522,316 | 1.15% |
| Other | 54,408 | 49,860 | 0.92% |
| Total | 2,688,320 | 3,086,250 | 1.15% |
| Percentage | (2.4%) | (2.5%) | |
| Budget of MOH | 113,844,043 | 125,722,262 | 1.10% |

(Currency : Emalangeni)

Chapter 4 Project Evaluation and Recommendation

Chapter 4 Project Evaluation and Recommendations

4-1 Effects of the project

Based upon the factors listed below, such as its significance in relation to basic policy of health of Swaziland, it would be very appropriate to provide grant aid for this project.

- (1) The implementation of this project will fulfill the objectives of the Health Care Development Plan, such as upgrading the primary medical facilities and reinforcing the functions of the secondary and tertiary hospitals, which are set forth as specific goals to be achieved in the national health care plan being set forth in order to promote national health through implementation of preventive medical care and the promotion thereof and implementation of vital medical services in Swaziland.
- (2) The recipient hospitals where new equipment is to be installed are now assigned to conduct medical care in secondary and tertiary capacities. However, due to financial difficulties, the existing equipment is superannuated and cannot fulfill its intended function because repair or renovation of equipment and facilities have not been performed for many years. This causes problems in providing daily medical services and therefore procurement of such equipment is urgent.
- (3) In this project, replenishing and replacing equipment at recipient hospitals will be the main task to be performed, and after the project is completed, the new equipment will be expected to be adequately operated, maintained within the means that the recipients can afford in regard to budget, personnel, technical expertise and so forth.
- (4) No particular difficulty is foreseen in implementation of the project and, in regard to the scale of the project and the schedule of implementation, it can be handled with ease through the Japanese Grant Aid system.

It is concluded that the implementation of this project is justified and beneficial, since it is expected to achieve great improvement in medical services at the recipient hospitals, and to contribute to the training of new medical personnel in the recipient country, and to result in an improvement in health and medical services offered to the people of Swaziland.

4-2 Recommendations

It is recommendable that the following measures will be taken for the individual recipient hospitals to take full advantage of the equipment procured through the implementation of the project and in order for them to achieve an improvement both in medical service functions and in establishing a well balanced financial standing.

- (1) Some of the consumables required by the equipment to be procured must be imported from other countries. Prior to the implementation of the project, it is necessary to establish an effective consumable control and management system to ensure that these consumables can be acquired smoothly.
- (2) Some of the equipment that are to be procured through the implementation of the project will require maintenance service performed by the manufacturers or their dealerships. Consequently, in regard to maintenance work to be performed after the warranty period expires, it is necessary to conclude maintenance contracts with the contractor, and specific budget allowances must be prepared to secure the required funds.
- (3) A regular report on the performance of the individual departments where new equipment are installed through the implementation of this project and the operating states of the procured equipment shall be submitted to the Japanese side in order to clarify the advantages and problems resulting from the implementation of the project.
- (4) It was observed that in Piggs Peak Hospital and Mankayane Hospital the specimen for biopsy was not disposed by sewerage. Therefore it is advisable that improvement should be made for the disposal of specimen by way of the installation of independent disposal vessel at the time of the expansion of the said hospitals.
- (5) The objective of this project is to replace worn-out equipment and supply more new equipment in order to assist the Ministry of Health and Social Welfare in improving medical service. To use equipment procured, operators at the hospitals covered under the project will be given appropriate technical guidance in operation and maintenance when the equipment is installed. To improve the technology for maintaining procured equipment and to ensure that maintenance is effective and efficient, after this project is implemented, maintenance technology should be improved through maintenance of procured equipment by engineers of the

biomedical office of the Ministry of Health and Social Welfare. The maintenance system should also be upgraded by dispatching, in the future medical equipment maintenance personnel from hospitals covered by this project to the manufacturers to study repair and maintenance technology.

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Appendices

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|------------------------------------------------------|-------------|
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1. Member List of Survey Team

Member List of the Survey Team

- | | | |
|-----------------------------------------|-----------------|------------------------------------------------------------------------------------------------------------------------|
| 1. Leader | Mr. K. MIURA | First Project Study Division Grant Aid Project Study Department Japan International Cooperation Agency (JICA) |
| 2. Technical Advisor | Dr. M. HOJO | Bureau of International Cooperation, International Medical Center of Japan, Ministry of Health and Welfare |
| 3. Project Manager | Mr. Y. ISHIKAWA | International Total Engineering Corporation (ITEC) |
| 4. Equipment Planner/ Cost Estimator | Mr. Y. FURUYA | International Total Engineering Corporation (ITEC) |
| 5. Architect and Facility Planner | Mr. K. IYOGI | International Total Engineering Corporation (ITEC) |

2. Survey Schedule

Survey Schedule

| No | Member (Period) Date | Government Member | Project Manager/ Procurement Planner | Equipment Planner/ Cost Estimator | Architect & Facility Planner |
|----|--------------------------------|------------------------------------------------------------------------------------------------------------------|-------------------------------------------|----------------------------------------|-----------------------------------------|
| | | Mr. K. MIURA Dr. M. HOJO (14 days) | Y. ISHIKAWA (25 days) | Y. FURUYA (25 days) | K. IYOGI (25 days) |
| 1 | Mar. 2 Sun | Lv. NRT (17:40 / CX505) → Ar. HKG (21:40) Lv. HKG (23:00 / CX749) → JNB | | | |
| 2 | Mar. 3 Mon | → Ar. JNB (05:50) Courtesy call to Embassy of Japan in Pretoria Lv. JNB (15:45 / BA6301) → Ar. MTS (16:50) | | | |
| 3 | Mar. 4 Tue | Courtesy call and meeting with Ministry of Economic Planning & Development, Ministry of Health. | | | |
| 4 | Mar. 5 Wed | Site Survey and Discussion in MBABANE Hospital | | | |
| 5 | Mar. 6 Thu | Site Survey and Discussion in PIGGS PEAK Hospital | | | |
| 6 | Mar. 7 Fri | Site Survey and Discussion in MANKAYANE Hospital and TB Center | | | |
| 7 | Mar. 8 Sat | Site Survey of Referral facilities | | | |
| 8 | Mar. 9 Sun | Team Meeting / Study of Data | | | |
| 9 | Mar. 10 Mon | Site Survey and Discussion in MBABANE Hospital Courtesy Call to Minister of Health | | | |
| 10 | Mar. 11 Tue | Discussion for "Minutes of Discussions" | | | |
| 11 | Mar. 12 Wed | Signing of "Minutes of Discussions" | | | |
| | | Lv. MTS(17:30/BA6300) → Ar. JNB (18:35) | Discussion on answers of Questionnaire | Survey and Discussions of Equipment | Survey and Discussions of Facilities |
| 12 | Mar. 13 Thu | Reporting to Embassy of Japan Lv. JNB (13:45/CX748) | | | |
| | | | Discussion on answers of Questionnaire | Survey and Discussions of Equipment | Survey and Discussions of Facilities |
| 13 | Mar. 14 Fri | → Ar. HKG(08:40) | | | |
| | | | Discussion on answers of Questionnaire | Survey and Discussions of Equipment | Survey and Discussions of Facilities |
| 14 | Mar. 15 Sat | Lv. HKG(10:05/CX504) → → Ar. NRT (14:40) | | | |
| 15 | Mar. 16 Sun | Team Meeting / Study of Data | | | |
| | | Lv. MBB → JNB by Car | | | |

Survey Schedule

| No | Member (Period) Date | Government Member <u>Mr. K. MIURA</u> <u>Dr. M. HOJO</u> (14 days) | Project Manager/ Procurement Planner <u>Y. ISHIKAWA</u> (25 days) | Equipment Planner/ Cost Estimator <u>Y. FURUYA</u> (25 days) | Architect & Facility Planner <u>K. IYOGI</u> (25 days) |
|----|----------------------------|-----------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------|-----------------------------------------------------------------|
| 16 | Mar. 17 Mon | | Local Agent Survey in JNB. | Local Agent Survey in MTS. Survey of Maintenance System. | Study of Quotation of Facility Renovation Work. |
| 17 | Mar. 18 Tue | | Local Agent Survey in JNB. Lv. JNB → MBB by Car | Local Agent Survey in MTS. | Study of Quotation of Facility Renovation Work. |
| 18 | Mar. 19 Wed | | Discussion with Ministry of Health Courtesy call and meeting with International Agency and UN Organization. | | |
| 19 | Mar. 20 Thu | | Reporting to Ministry of Health Lv. MTS (17:15 / ZC 015) → Ar. JNB (18:00) | | |
| 20 | Mar. 21 Fri | | Local Agent Survey and Collecting Quotation of Equipment in JNB. | | |
| 21 | Mar. 22 Sat | | Local Agent Survey and Collecting Quotation of Equipment in JNB. Team Meeting / Study of Data | | |
| 22 | Mar. 23 Sun | | Team Meeting / Study of Data | | |
| 23 | Mar. 24 Mon | | Reporting to Embassy of Japan in Pretoria. Collecting Quotation of Equipment Lv. JNB (20:15 / BA056) → LHR | | |
| 24 | Mar. 25 Tue | | → Ar. LHR (05:25). Lv. LHR (14:30 / BA007) → NRT | | |
| 25 | Mar. 26 Wed | | → Ar. NRT (11:20) | | |

3. List of Party Concerned of Swaziland

List of Party Concerned of Swaziland

Ministry of Economic Planning & Development

| | | |
|---------------------------------------------|---|-------------------------|
| Principal Secretary | : | Mr. Ephraim M. Hlophe |
| Consultant, External Assistant Coordination | : | Mr. Datianus R. Ishenda |

Ministry of Health & Social Welfare

| | | |
|-----------------------------|---|-------------------------|
| Minister | : | Dr. Phetsile K. Dlamini |
| Principal Secretary | : | Mr. Almon M. Mbingo |
| Under Secretary | : | Mr. Sandle Mdziniso |
| Director of Health Services | : | Dr. John J. M. Mbambo |
| Assistant Planning Officer | : | Mr. Thulani Matsgbula |
| Bio-Medical Engineer | : | Mr. Bheki J. Ntshangase |
| Bio-Medical Engineer | : | Mr. Leonard M. Zwane |

MBABANE Hospital

| | | |
|-----------------------------|---|---------------------|
| Senior Medical Officer | : | Dr. J. M. Kunene |
| Surgeon | : | Dr. Prahalaph |
| Surgeon / Urologist | : | Dr. Mohamed |
| Ophthalmologist | : | Dr. Dlamini |
| Gynecologist / Obstetrician | : | Dr. A. Y. Dery |
| Dentist | : | Dr. L. Ahmadi |
| Chief Radiology Technician | : | Mr. Elliot Maseko |
| Chief Laboratory Technician | : | Mr. Richard Walwema |

PIGGS PEAK Hospital

| | | |
|------------------------|---|--------------------|
| Senior Medical Officer | : | Dr. L. T. Kanya |
| Administrator | : | Mr. Khumalo Mkhosi |
| Nursing Sister | : | Ms. Betty Simelane |
| Dentist | : | Dr. Dube |
| Radiologist | : | Ms. Jabu Mdluli |
| Matron | : | Ms. Joan B. Hlanze |

MANKAYANE Hospital

Medical Officer : Dr. W. Chilanbo
Administrator : Mr. Fikile Bulunga
Nursing Sister : Ms. Julia Magwaza
Laboratory Technician : Mr. Dan Gama

TB Center

Medical Doctor : Dr. Cesphina Mabuza
Hospital Sister : Ms. Sister Monica
Laboratory Technician : Mr. Paul Simelane

Hlatilulu Hospital

Senior Matron : Ms. Doreen Dlamini
Laboratory Technician : Mr. Simon Gondwe

Good Shepherd Hospital

Administrator : Ms. Dumsile Smelane
Deputy Matron : Ms. Miram Lamini

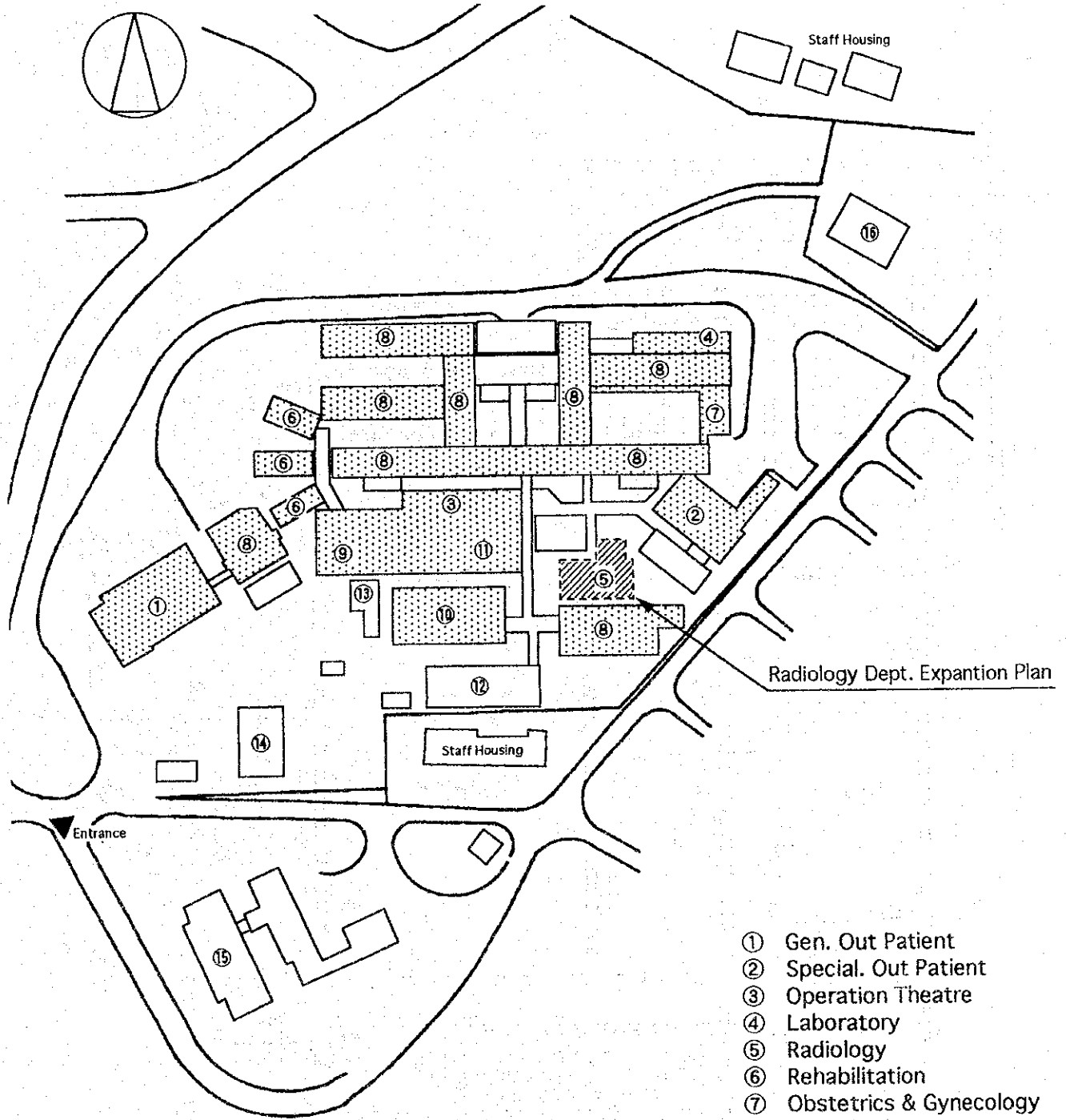
Raleigh Fitkin Memorial Hospital

Secretary : Mr. Roger Mpapane

Embassy of Japan in South Africa

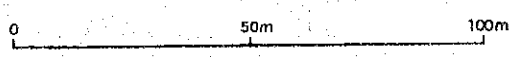
First Secretary : Mr. Mizuochi
Attaché : Mr. Tahara

4. Site Drawing

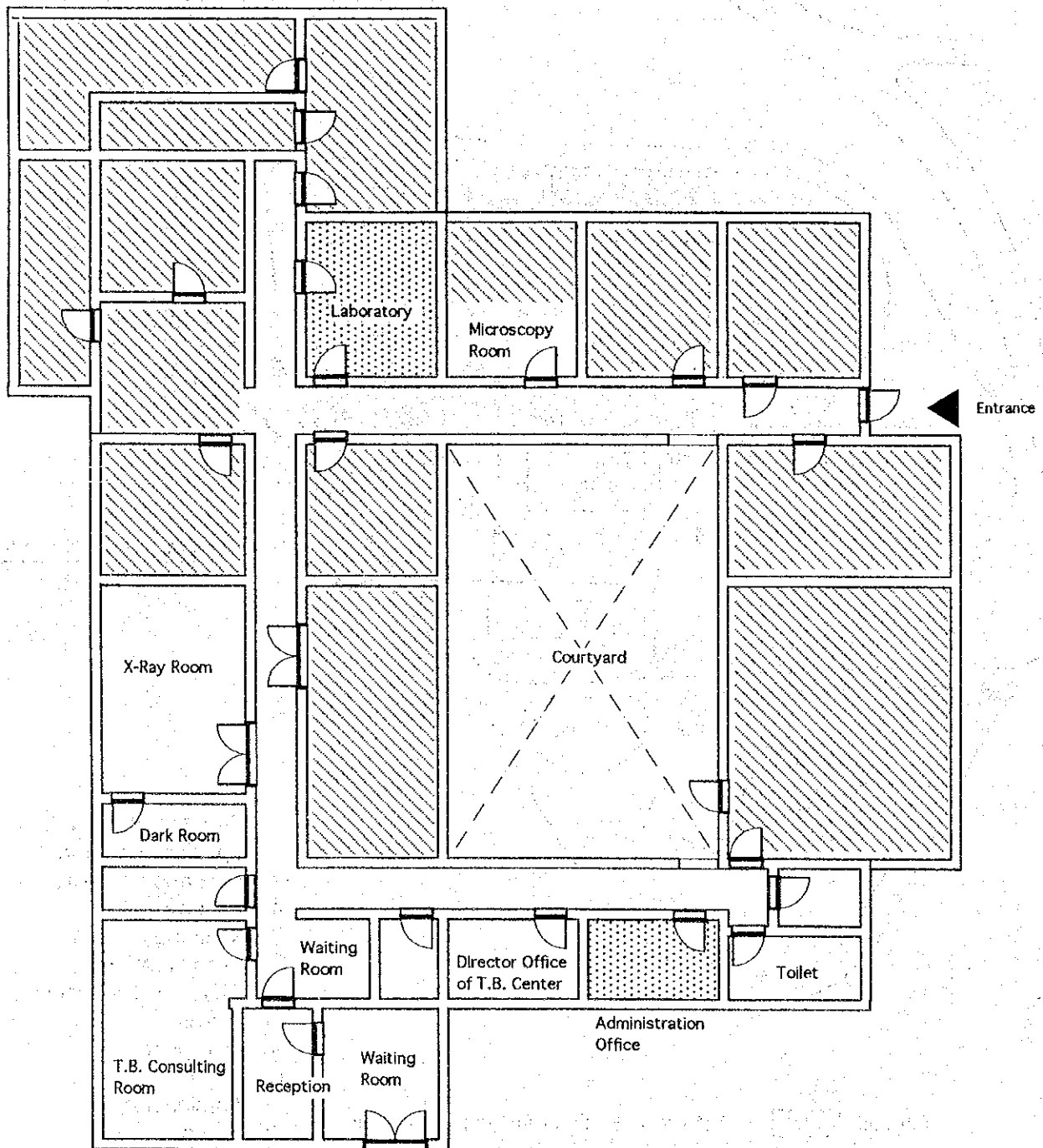
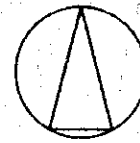


- Legend
- 1st Phase Equipment Supply Plan Dept.
 - 2nd Phase Equipment Supply Plan Dept.
 - Expansion Plan

- ① Gen. Out Patient
- ② Special. Out Patient
- ③ Operation Theatre
- ④ Laboratory
- ⑤ Radiology
- ⑥ Rehabilitation
- ⑦ Obstetrics & Gynecology
- ⑧ Wards
- ⑨ Emergency
- ⑩ Kitchen
- ⑪ Administration
- ⑫ Laundry
- ⑬ Boiller
- ⑭ Mortuary
- ⑮ Public Health Section
- ⑯ Psychiatry

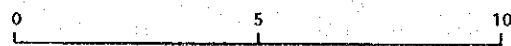


Mbabane Hospital Site Plan

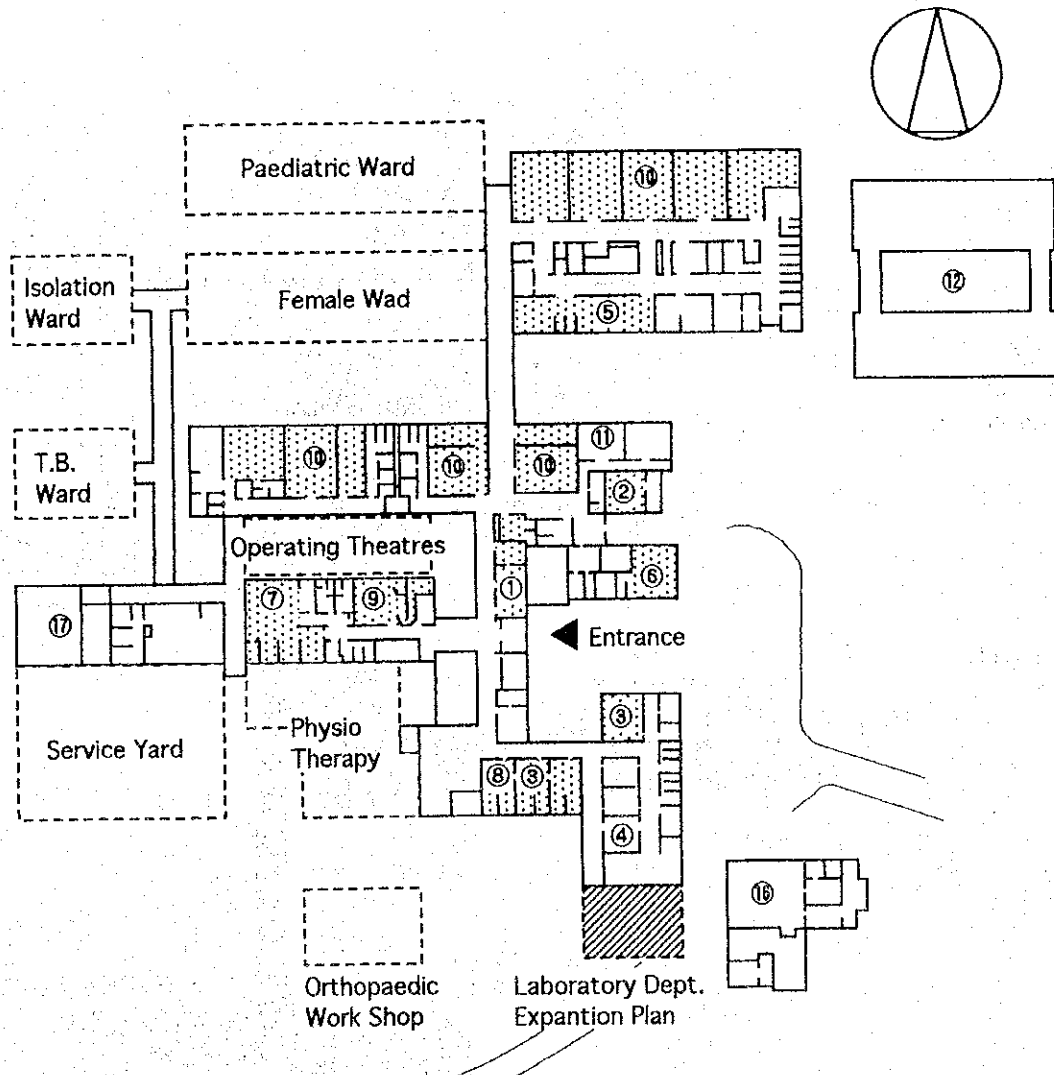


Legend : [Dotted Box] 1st Phase Equipment Supply Plan Dept.




[Hatched Box] National Central Laboratory Dept.



T.B. Center / National Central Laboratory Site Plan

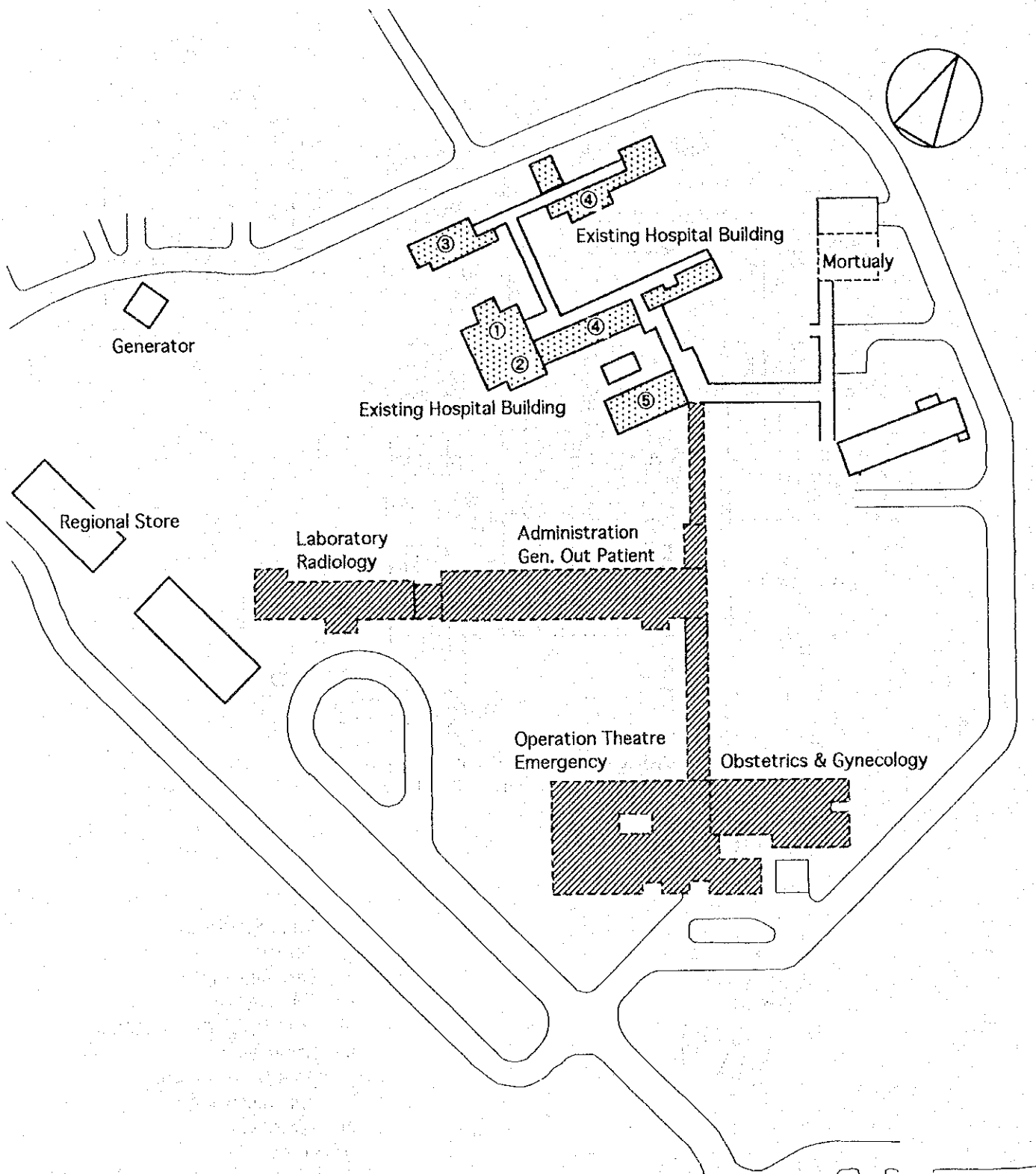





- ① Administration
- ② Dental
- ③ Gen. Out Patient
- ④ Laboratory
- ⑤ Obstetrics & Gynecology
- ⑥ Emergency
- ⑦ Operation Theatre
- ⑧ Ophthalmology
- ⑨ Radiology
- ⑩ Wards
- ⑪ E.N.T.
- ⑫ Psychiatry Wards
- ⑬ Mortuary
- ⑭ Incinerator
- ⑮ Generator
- ⑯ Regional Drug Store
- ⑰ Kitchen , Laundry

- Legend
-  1st Phase Equipment Supply Plan Dept.
 -  2nd Phase Equipment Supply Plan Dept.
 -  Expantion Plan

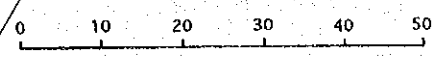
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Piggs Peak Hospital Site Plan



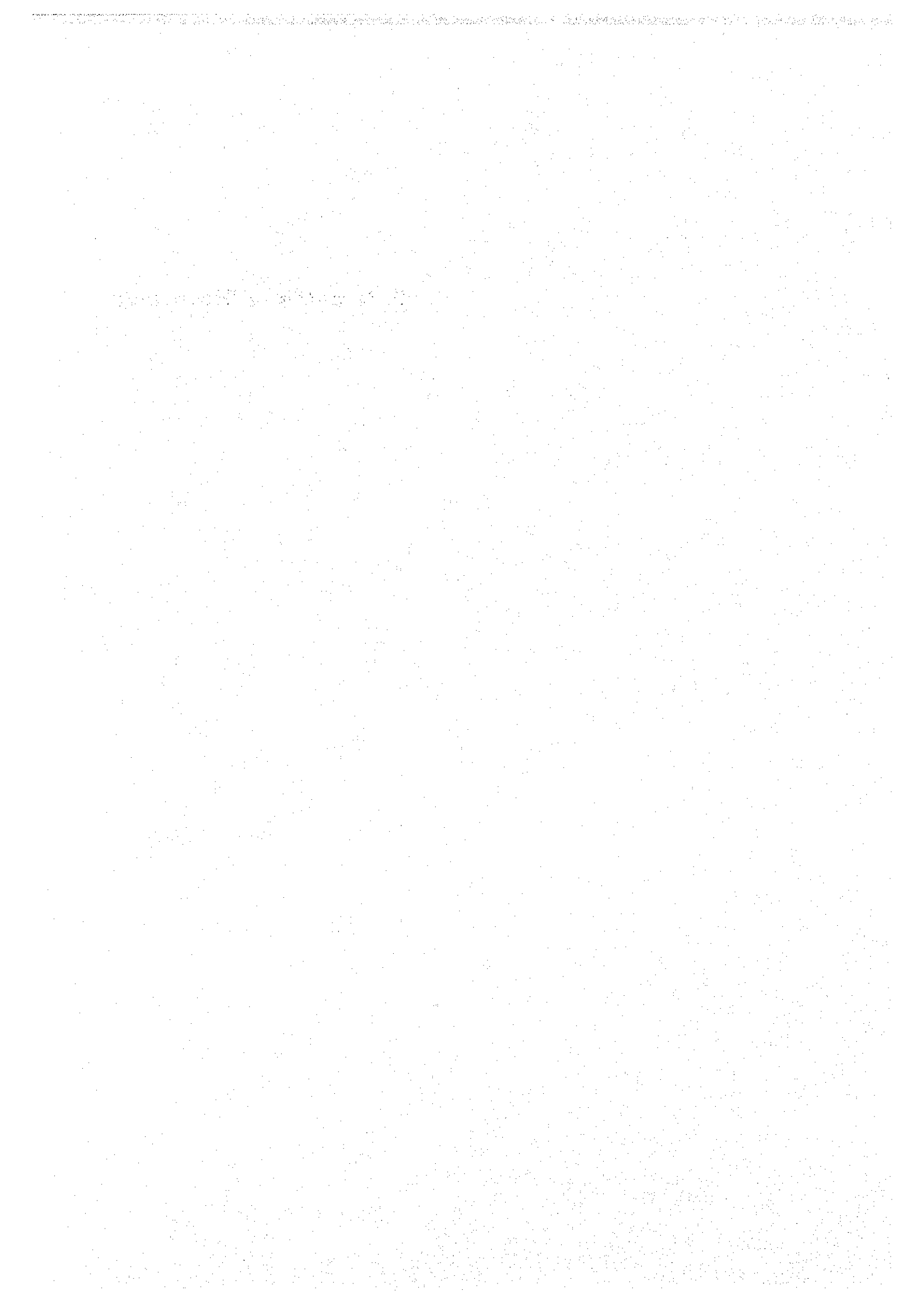
- Legend**
-  1st Phase Equipment Supply Plan Dept.
 -  2nd Phase Equipment Supply Plan Dept.
 -  Expantion Plan

- ① Existing Gen. Out Patient
- ② Existing Laboratory
- ③ Existing Obstetrics & Gynecology
- ④ Existing Wards
- ⑤ Existing Kitchen , Laundry



Mankayane Hospital Site Plan

5. Minutes of Discussion



MINUTES OF DISCUSSIONS ON THE BASIC DESIGN STUDY
ON
THE PROJECT FOR UPGRADING HEALTH CARE SERVICES
IN
THE KINGDOM OF SWAZILAND

Based on the results of the Preliminary Study, the Japan International Cooperation Agency (JICA) decided to conduct a Basic Design Study on the Project for Upgrading Health Care Services in the Kingdom of Swaziland (hereinafter referred to as "the Project").

JICA sent a study team to Kingdom of Swaziland, which is headed by Mr. Kazunori MIURA, First Project Study Division, Grant Aid Project Study Department, JICA. The team was scheduled to stay in the country from March 3 to 20, 1997.

The Team has had a series of discussions with relevant officials of the Government of the Kingdom of Swaziland and conducted a field survey at the study area.

In the course of discussions and site survey, both parties have confirmed the main items described on the attached sheets. The Team will proceed to further works and prepare the Basic Design Study Report.

Mbabane, March 12, 1997

三浦和紀

Mr. Kazunori MIURA

Leader
Basic Design Study Team
JICA

Mr. Ephraim M. HLOPHE

Principal Secretary
Ministry of Economic Planning
& Development
Government of the Kingdom of
Swaziland

Mr. Simon M. MBINGO

Principal Secretary
Ministry of Health & Social Welfare
Government of the Kingdom of
Swaziland

ATTACHMENT

1. Objective

The objective of the Project is to provide the secondary and tertiary health care facilities with necessary equipment, and thus to contribute the improvement of referral system of Swaziland.

2. Project Sites

- Mbabane Hospital
- TB Center
- Piggs Peak Hospital
- Mankayane Hospital

3. Responsible and Executing Agency

The Office of Director of Health Services, Ministry of Health & Social Welfare is responsible for the administration and execution of the Project.

4. Items Requested by the Government of the Kingdom of Swaziland

After discussions with the Basic Design Study Team, the equipment in Annex-I were finally requested by the Government of the Kingdom of Swaziland for the consideration by the Government of Japan to be provided under the Grant Aid.

However, items to be included in the Project as well as implementation schedule of the Project will be decided after further studies.

5. Japan's Grant Aid System

(1) The Government of the Kingdom of Swaziland has understood the system of Japan's Grant Aid on Annex-II as explained by the team.

(2) The Government of the Kingdom of Swaziland will take necessary measures, described in Annex-III for smooth implementation of the Project on condition that the Grant Aid by the Government of Japan is extended to the Project.

6. Schedule of the study

(1) The team will proceed to further study in the Kingdom of Swaziland until March 20, 1997.

(2) JICA will make the final report in accordance with the confirmed items, and send it to the Government of the Kingdom of Swaziland around July, 1997.

7. Other relevant issues

(1) The order of priority ("A" to "C") is given to each equipment item as shown on Annex-I.

The equipment categorized as "A" or "B" is deemed necessary and appropriate in existing situation of each hospital concerned. The equipment categorized as "C" is deemed necessary, but, to be confirmed as appropriate, it requires following conditions:

- 1) The space for installation should be secured.
- 2) The necessary number of medical staff with adequate technical level of operating should be secured.

(2) The Government of the Kingdom of Swaziland indicated to the team that it had development plans for each hospital concerned and stated that the conditions for the equipment categorized as "C" would be satisfied through accomplishing those plans.

(3) For the consideration of the Government of Japan, the Government of the Kingdom of Swaziland will keep it informed on the progress of their development plans of each hospital concerned (budgeting, staffing, schedule of construction works, etc.) by noticing the Embassy of Japan at Pretoria.

(4) The Government of the Kingdom of Swaziland stated that the CT Scanner with its necessary accessories for Mbabane Hospital was its highest priority and that in view of its re-classification to a higher priority in the equipment list, the Government of the Kingdom of Swaziland would provide the requisite space as soon as possible.

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EQUIPMENT LIST

ANNEX- I

| Department | No | Description | Q'ty | Priority |
|------------------------------------------|-------|-----------------------------------------------------------|------|----------|
| MBABANE Hospital | | | | |
| CONSULTING ROOM (GENERAL) | MB-1 | Table Top Bp Machine | 8 | A |
| | MB-2 | Floor Type Bp Machine | 4 | A |
| | MB-3 | ECG Recorder | 2 | A |
| | MB-4 | Diagnostic Set | 4 | A |
| | MB-5 | Stethoscope for Doctor | 4 | A |
| | MB-6 | Stethoscope for Nurse | 8 | A |
| | MB-7 | Examining Light | 4 | A |
| | MB-8 | Examining Table | 6 | A |
| | MB-9 | X-ray Film Illuminator | 4 | A |
| DRESSING & TREATMENT ROOM | MB-10 | Boiling Sterilizer, Table Top Type | 2 | A |
| | MB-11 | Wheel Chair | 4 | A |
| | MB-12 | Refrigerator for Medicine | 1 | A |
| | MB-13 | Nebulizer | 2 | A |
| CONSULTING ROOM (SPECIAL) | MB-14 | Suction Unit, Table Top Type | 1 | A |
| | MB-15 | ECG Recorder | 1 | A |
| | MB-16 | X-ray Film Illuminator | 1 | B |
| | MB-18 | Table Top Bp Machine | 1 | B |
| GYNECOLOGY | MB-19 | Gynecology Examination Unit with Table | 1 | A |
| | MB-20 | Colposcope | 1 | A |
| | MB-21 | Suction Unit, Portable | 1 | A |
| ENT CLINIC | MB-24 | Killian Head Light | 5 | A |
| | MB-25 | Ear Speculum | 20 | A |
| | MB-26 | Ear Syringe | 20 | A |
| | MB-27 | Binocular Diagnostic Microscope, Floor Type | 1 | A |
| | MB-28 | ENT treatment Chair & Unit | 1 | A |
| | MB-29 | Esophagoscope, Rigid Type | 1 | A |
| | MB-30 | Laryngoscope, Jackson Type | 1 | A |
| | MB-31 | Mastoidectomy Drill with built-in Irrigation Unit & Burrs | 1 | A |
| | MB-32 | ENT Instrument Set | 1 | A |
| | MB-33 | Hearing Test Booth | 1 | B |
| | MB-34 | Audiometer, Dual Type | 1 | B |
| | MB-35 | Audiometer, Free Field Type | 1 | B |
| OPHTHALMIC | MB-36 | Tonometer | 1 | A |
| | MB-37 | Humphrey Perimeter | 1 | A |
| | MB-38 | Slit Lamp with Table | 1 | A |
| | MB-39 | Wheel Chair | 1 | A |

EQUIPMENT LIST

ANNEX-1

| Department | No | Description | Qty | Priority |
|------------------|-------|---------------------------------------|-----|----------|
| ENDOSCOPY CLINIC | MB-40 | Gastrointestinal Fiberscope Set | 2 | A |
| | MB-41 | Colono Fiberscope Set | 1 | A |
| | MB-42 | Fiberscope Cleaning Machine | 1 | A |
| | MB-44 | Endoscopic Trolley | 1 | A |
| | MB-45 | Endoscopic Cabinet | 1 | A |
| | MB-46 | Light Source for Endoscope | 1 | A |
| | MB-47 | Endoscopic Suction Unit | 2 | A |
| UROLOGY | MB-48 | Resectoscope Set | 1 | A |
| | MB-49 | Irrigating Cystoscope Set | 1 | A |
| | MB-50 | Urethral Stone Dislodge Forceps | 1 | A |
| | MB-51 | Bladder Evacuator, Elick | 1 | A |
| | MB-52 | Cysto-Urethroscope Set | 1 | A |
| | MB-53 | Light Source for Urology Scope | 1 | A |
| DENTAL | MB-54 | Dental Unit with Accessories | 1 | A |
| | MB-55 | Ultrasonic Scaler | 1 | A |
| | MB-56 | Steam Sterilizer, Table Top Type | 1 | A |
| | MB-57 | Dental Panoramic X-ray Unit | 1 | C |
| | MB-59 | Visible Light Source | 1 | B |
| | MB-60 | Apex Locator | 1 | B |
| | MB-61 | Amalgam Mixer | 1 | A |
| | MB-62 | Electro Cautery Unit | 1 | B |
| LABORATORY | MB-63 | Blood Bank Refrigerator | 1 | A |
| | MB-64 | Centrifuge | 2 | A |
| | MB-65 | Binocular Microscope | 2 | A |
| | MB-66 | Darkfield Attachment for Microscope | 1 | A |
| | MB-67 | Blood Cell Counter | 1 | A |
| | MB-68 | Incubator for Bacteriology | 1 | B |
| | MB-69 | Autoclave, Vertical Type | 1 | B |
| | MB-70 | Distiller | 1 | A |
| | MB-71 | Chemical Analyzer | 1 | A |
| RADIOLOGY | MB-72 | X-ray Diagnostic Unit with Tomography | 1 | A |
| | MB-73 | Fluoroscopy X-ray Unit with TV | 1 | A |
| | MB-74 | Mobile X-ray Unit | 1 | A |
| | MB-75 | X-ray Film Auto Processor | 1 | B |
| | MB-76 | CT Scanner | 1 | C |
| | MB-77 | Film Name Printer | 1 | A |
| | MB-78 | Film Loading Table | 1 | A |

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EQUIPMENT LIST

ANNEX- I

| Department | No | Description | Q'ty | Priority |
|-----------------------------|--------|--------------------------------------------------------|------|----------|
| | MB-79 | X-ray Film Cassette Set | 1 | A |
| | MB-80 | Silvery Recovery Unit | 1 | B |
| PHYSIOTHERAPY | MB-82 | Muscle Stimulator | 1 | A |
| | MB-83 | Microwave Therapy Unit | 1 | A |
| | MB-84 | Wheel Chair | 2 | A |
| | MB-85 | Walker | 7 | A |
| | MB-86 | Tilt Table | 1 | A |
| | MB-87 | Exercise Mat | 3 | A |
| OCCUPATIONAL THERAPY | MB-88 | Wire Twisting Machine | 1 | B |
| | MB-89 | Intermittent Time Switch Unit and Photoelectric Switch | 1 | B |
| | MB-90 | Wheel Chair Table | 1 | B |
| | MB-91 | Medicine Ball | 1 | A |
| | MB-92 | Roll | 1 | A |
| | MB-93 | Wedge | 1 | A |
| | MB-94 | Wheel Chair for Adult | 2 | A |
| | MB-95 | Wheel Chair for Child | 1 | A |
| | MB-96 | Wheel Chair for Narrow Adult | 1 | A |
| | MB-97 | Nesting Wheel Chair Transfer Stool Set | 1 | B |
| | MB-98 | Exercise Mat | 3 | A |
| ORTHOPEDIC WORKSHOP | MB-99 | Sanding Machine | 1 | B |
| | MB-100 | Stitching Machine | 1 | B |
| | MB-101 | Sole Stitcher | 1 | B |
| | MB-102 | Rubber Sewing Machine | 1 | B |
| | MB-103 | Leather Skinning Machine | 1 | B |
| | MB-104 | Finishing Machine | 1 | B |
| OPERATION THEATER | MB-105 | Operating Light, Mobile Type | 2 | A |
| | MB-106 | Anesthetic Machine with Ventilator | 1 | A |
| | MB-107 | Orthopedic Operating Table | 1 | A |
| | MB-109 | ECG Monitor | 2 | A |
| | MB-110 | Infusion Pump | 4 | B |
| | MB-111 | Pulse Oxymeter | 2 | A |
| | MB-112 | Ventilator for Anesthetic Machine | 1 | B |
| | MB-113 | Defibrillator | 1 | A |
| | MB-114 | Bronchoscope Set | 1 | A |
| | MB-115 | Electrosurgical Unit for Resectoscope | 1 | A |
| | MB-116 | Amputation Saw | 2 | A |
| | MB-117 | Laparotomy Set for Adult | 1 | A |

EQUIPMENT LIST

ANNEX- I

| Department | No | Description | Q'ty | Priority |
|------------------|--------|--------------------------------------|------|----------|
| | MB-118 | Laparotomy Set for Child | 1 | A |
| | MB-119 | Gastrectomy Set | 1 | A |
| | MB-120 | Cholecystotomy Set | 1 | A |
| | MB-121 | Emergency Tracheotomy Set | 1 | A |
| | MB-122 | Plastic Surgery Set | 1 | A |
| | MB-123 | Caesarean Incision Set | 1 | A |
| | MB-124 | Cataract Set | 2 | A |
| | MB-125 | Minor Operation Set | 3 | A |
| | MB-126 | Thyroidectomy Set | 1 | B |
| | MB-127 | Adenotonsilectomy Set | 1 | A |
| | MB-128 | Arthroscope Set | 1 | B |
| | MB-129 | Low Pressure Continuous Suction Unit | 2 | A |
| CSSD | MB-130 | Autoclave with Boiler | 2 | A |
| | MB-132 | Boiling Sterilizer, Floor Type | 1 | A |
| MATERNITY | MB-133 | Wheel Chair | 2 | A |
| | MB-134 | Suction Unit | 2 | A |
| | MB-135 | Infant Scale | 2 | A |
| | MB-136 | Vacuum Extractor | 2 | B |
| | MB-137 | Emergency Cart | 1 | A |
| | MB-138 | Infant Incubator | 2 | A |
| | MB-139 | Infant Warmer | 2 | A |
| | MB-140 | Phototherapy Unit | 1 | A |
| | MB-141 | Fetal Doppler | 2 | A |
| | MB-142 | Fetal Monitor | 1 | A |
| | MB-143 | Neonatal Monitor | 1 | A |
| | MB-144 | Suction Unit for Abortion | 1 | A |
| | MB-145 | Neonatal Resuscitation Set | 1 | B |
| WARD | MB-146 | Suction Unit | 17 | A |
| | MB-147 | Wheel Chair | 17 | A |
| | MB-148 | Instrument Trolley | 17 | A |
| | MB-149 | Emergency Cart | 17 | B |
| | MB-150 | Wheel Stretcher | 9 | A |
| | MB-151 | Floor Mobile Bp Machine | 34 | A |
| | MB-152 | Table Top Bp Machine | 34 | A |
| | MB-153 | Stethoscope for Nurse | 34 | A |
| | MB-154 | Medicine Trolley | 17 | A |
| | MB-155 | X-ray Film Illuminator | 17 | A |

EQUIPMENT LIST

ANNEX- I

| Department | No | Description | Q'ty | Priority |
|-----------------------|--------|------------------------------------------|------|----------|
| | MB-156 | Nebulizer | 17 | A |
| | MB-157 | ECG Monitor | 4 | A |
| | MB-158 | Defibrillator | 2 | A |
| | MB-159 | Patient Bed with Mattress | 15 | B |
| | MB-160 | Weighing Scale | 17 | A |
| | MB-161 | Low Pressure Continuous Suction Unit | 3 | A |
| | MB-162 | Spirometer | 1 | A |
| | MB-163 | Ambulance, 4WD Wagon | 1 | B |
| KITCHEN | MB-164 | Liquidizer for Kitchen | 1 | A |
| | MB-165 | Pot for Liquid Diet | 3 | A |
| ADMINISTRATION | MB-166 | Slide Projector Set | 1 | A |
| | MB-167 | OHP Projector | 1 | A |
| | MB-168 | Multi Format Camera for CT Scanner | 1 | C |
| | MB-169 | X-ray Film Auto Processor for CT Scanner | 1 | C |

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EQUIPMENT LIST

ANNEX- I

| Department | No | Description | Q'ty | Priority |
|-------------------------------|------|----------------------------|------|----------|
| <u>TB Center</u> | | | | |
| <i>Laboratory / Education</i> | TB-3 | Teaching Microscope | 1 | A |
| | TB-4 | Incubator for Bacteriology | 1 | A |
| | TB-6 | Slide Projector Set | 1 | A |

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(Signature)

EQUIPMENT LIST

ANNEX- I

| Department | No | Description | Q'ty | Priority |
|----------------------------|-------|-------------------------------------|------|----------|
| PIGGS PEAK Hospital | | | | |
| ADMINISTRATION | PG-1 | Photocopier | 1 | A |
| DENTAL | PG-2 | Dental Unit with Accessories | 1 | A |
| | PG-3 | Steam Sterilizer, Table Top Type | 1 | B |
| | PG-6 | Amalgam Mixer | 1 | A |
| OPD CONSULTING | PG-8 | Table Top Bp Machine | 4 | A |
| | PG-9 | Thermometer | 20 | A |
| | PG-10 | Examination Light | 3 | A |
| | PG-11 | X-ray Film Illuminator | 2 | A |
| | PG-12 | Stethoscope for Doctor | 4 | A |
| | PG-13 | Stethoscope for Nurse | 4 | A |
| | PG-14 | Diagnostic Set | 3 | A |
| | PG-15 | ECG Recorder | 1 | A |
| | PG-16 | Gynecology Examination Unit | 1 | A |
| OPD TREATMENT | PG-17 | Refrigerator for Medicine | 1 | A |
| | PG-18 | Boiling Sterilizer , Table Top Type | 1 | A |
| | PG-19 | Minor Operating Instrument Set | 2 | A |
| | PG-20 | Light for Minor Operation | 1 | A |
| | PG-21 | Nebulizer | 1 | A |
| | PG-22 | Suction Unit, Portable | 1 | A |
| LABORATORY | PG-23 | Refrigerator for Reagent | 1 | C |
| | PG-24 | Blood Cell Counter | 1 | C |
| | PG-25 | Differential Counter, Manual Type | 1 | C |
| | PG-26 | Hemoglobin Meter | 1 | C |
| | PG-27 | Pipette Washer | 1 | C |
| | PG-28 | Centrifuge | 1 | C |
| | PG-29 | Binocular Microscope | 1 | C |
| | PG-30 | Distiller | 1 | C |
| | PG-31 | Autoclave, Vertical Type | 1 | C |
| | PG-32 | Incubator for Bacteriology | 1 | C |
| | PG-33 | Hot Oven | 1 | C |
| | PG-35 | Water Bath | 1 | C |
| | PG-36 | Colony Counter | 1 | C |
| MATERNITY | PG-37 | Delivery Table | 2 | A |
| | PG-38 | Infant Bassinet | 2 | B |
| | PG-39 | Vacuum Extractor | 2 | A |
| | PG-40 | Fetal Doppler | 1 | B |

EQUIPMENT LIST

ANNEX-I

| Department | No | Description | Q'ty | Priority |
|--------------------------|-------|----------------------------------------|------|----------|
| | PG-41 | Infant Scale | 1 | A |
| | PG-42 | Caesarean Incision Set | 2 | A |
| | PG-43 | Infusion Pump | 2 | B |
| | PG-44 | Neonatal Resuscitation Set | 1 | B |
| CASUALTY | PG-45 | Ambulance, 4WD Wagon | 1 | B |
| OPERATION THEATER | PG-46 | Anesthetic Machine | 1 | A |
| | PG-48 | Pulse Oxymeter | 1 | B |
| | PG-49 | Infusion Pump | 1 | B |
| | PG-50 | Defibrillator | 1 | B |
| | PG-51 | Suction Unit | 2 | A |
| | PG-52 | Surgical Instrument Set | 2 | A |
| | PG-53 | ECG Monitor | 1 | A |
| | PG-54 | Operating Light, Mobile Type | 1 | A |
| CSSD | PG-55 | Autoclave with Boiler | 1 | A |
| | PG-56 | Sterilizing Drum, LMS Size Each 10 Set | 1 | A |
| OPHTHALMOLOGY | PG-57 | Slit Lamp with Table | 1 | A |
| | PG-58 | Ophthalmoscope | 1 | B |
| OTHER | PG-59 | Generator | 1 | A |
| | PG-60 | Stabilizer, Table Top Type | 3 | A |
| | PG-61 | Incinerator | 1 | B |
| RADIOLOGY | PG-62 | Ultrasound Scanner | 1 | B |
| | PG-63 | Fluoroscopy X-ray Unit | 1 | A |
| | PG-64 | Film Name Printer | 1 | A |
| | PG-65 | X-ray Film Illuminator | 1 | A |
| | PG-66 | Protective Apron | 1 | A |
| WARD | PG-67 | Floor Mobile Bp Machine | 6 | A |
| | PG-68 | Instrument Trolley | 6 | A |
| | PG-69 | Suction Unit, Portable | 2 | A |
| | PG-70 | Wheel Chair | 5 | A |
| | PG-72 | ECG Recorder | 1 | A |
| | PG-73 | Nebulizer | 3 | A |
| | PG-74 | Low Pressure Continuous Suction Unit | 2 | A |
| | PG-75 | Infant Incubator | 2 | B |

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EQUIPMENT LIST

ANNEX-I

| Department | No | Description | Q'ty | Priority |
|---------------------------|-------|------------------------------------|------|----------|
| MANKAYANE Hospital | | | | |
| ADMINISTRATION | MK-1 | Photocopier | 1 | A |
| | MK-2 | Typewriter | 1 | A |
| DENTAL | MK-3 | Dental Unit with Accessories | 1 | C |
| | MK-4 | Dental X-ray Film Processor | 1 | C |
| | MK-5 | Dental X-ray Unit | 1 | C |
| | MK-6 | Steam Sterilizer, Table Top Type | 1 | C |
| | MK-9 | Amalgam Mixer | 1 | C |
| OPD CONSULTING | MK-11 | Table Top Bp Machine | 3 | A |
| | MK-12 | Thermometer | 20 | A |
| | MK-13 | Examination Light | 2 | A |
| | MK-14 | X-ray Film Illuminator | 2 | A |
| | MK-15 | Stethoscope for Doctor | 3 | A |
| | MK-16 | Stethoscope for Nurse | 3 | A |
| | MK-17 | Diagnostic Set | 1 | A |
| | MK-18 | ECG Recorder | 1 | A |
| OPD TREATMENT | MK-19 | Refrigerator for Medicine | 1 | A |
| | MK-20 | Boiling Sterilizer, Table Top Type | 1 | A |
| | MK-21 | Minor Operating Instrument Set | 2 | A |
| | MK-22 | Nebulizer | 1 | A |
| | MK-23 | Suction Unit, Portable | 1 | A |
| LABORATORY | MK-24 | Spectrophotometer | 1 | C |
| | MK-25 | Refrigerator for Reagent | 1 | C |
| | MK-26 | Blood Cell Counter | 1 | C |
| | MK-27 | Differential Counter, Manual Type | 1 | C |
| | MK-28 | Hemoglobin Meter | 1 | A |
| | MK-29 | Pipette Washer | 1 | C |
| | MK-30 | Centrifuge | 1 | C |
| | MK-31 | Binocular Microscope | 1 | A |
| | MK-32 | Distiller | 1 | C |
| | MK-33 | Autoclave, Vertical Type | 1 | C |
| | MK-34 | Incubator for Bacteriology | 1 | C |
| | MK-35 | Hot Oven | 1 | C |
| | MK-37 | Water Bath | 1 | C |
| | MK-38 | Colony Counter | 1 | C |
| LAUNDRY | MK-39 | Drying Tumbler | 1 | B |
| MATERNITY | MK-40 | Delivery Table | 2 | C |

EQUIPMENT LIST

ANNEX- I

| Department | No | Description | Q'ty | Priority |
|-------------------|-------|----------------------------------------|------|----------|
| | MK-41 | Infant Bassinet | 2 | C |
| | MK-42 | Suction Unit | 2 | A |
| | MK-43 | Fetal Doppler | 1 | A |
| | MK-44 | Pulse Oxymeter | 1 | A |
| | MK-45 | Infant Scale | 1 | A |
| | MK-46 | Caesarean Incision Set | 2 | C |
| | MK-47 | Infusion Pump | 1 | C |
| CASUALTY | MK-48 | Ambulance, 4WD Wagon | 1 | A |
| OPERATION THEATER | MK-49 | Anesthetic Machine | 1 | C |
| | MK-50 | Operating Table | 1 | C |
| | MK-51 | Pulse Oxymeter | 1 | C |
| | MK-52 | Infusion Pump | 1 | C |
| | MK-53 | Defibrillator | 1 | C |
| | MK-54 | ECG Monitor | 1 | C |
| | MK-55 | Suction Unit | 1 | C |
| | MK-56 | Surgical Instrument Set | 2 | C |
| | MK-57 | Operating Light, Ceiling Type | 1 | C |
| CSSD | MK-58 | Autoclave with Boiler | 1 | C |
| | MK-59 | Sterilizing Drum, LMS Size Each 10 Set | 1 | C |
| OPHTHALMOLOGY | MK-61 | Ophthalmoscope | 1 | A |
| OTHER | MK-62 | Generator | 1 | C |
| | MK-63 | Stabilizer, Table Top Type | 1 | A |
| | MK-64 | Incinerator | 1 | B |
| RADIOLOGY | MK-65 | Ultrasound Scanner | 1 | A |
| | MK-66 | Fluoroscopy X-ray Unit | 1 | C |
| | MK-67 | Film Name Printer | 1 | C |
| | MK-68 | X-ray Film Illuminator | 1 | C |
| | MK-69 | Protective Apron | 1 | C |
| WARD | MK-70 | Floor Mobile Bp Machine | 6 | A |
| | MK-71 | Instrument Trolley | 3 | A |
| | MK-72 | Suction Unit, Portable | 2 | A |
| | MK-73 | Wheel Chair | 3 | A |
| | MK-76 | Nebulizer | 3 | A |
| | MK-77 | Low Pressure Continuous Suction Unit | 2 | A |
| | MK-78 | Infant Incubator | 1 | A |
| | MK-79 | Infant Incubator | 1 | C |

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ANNEX II

JAPAN'S GRANT AID PROGRAM

1. Japan's Grant Aid Procedures

(1) The Japan's Grant Aid Program is executed by the following procedures.

- Application (Request made by a recipient country)
- Study (Preliminary Study / Basic Design Study conducted by JICA)
- Appraisal & Approval (Appraisal by the Government of Japan and Approval by the Cabinet of Japan)
- Determination of Implementation (Exchange of Notes between the both Governments)
- Implementation (Implementation of the Project)

(2) Firstly, an application or a request for a project made by the recipient country is examined by the Government of Japan (the Ministry of Foreign Affairs) to see whether or not it is suitable for Japan's Grand Aid. If the request is deemed suitable, the Government of Japan entrusts a study on the request to JICA (Japan International Cooperation Agency).

Secondly, JICA conducts the Study (Basic Design Study), using a Japanese consulting firm. If the background and objective of the requested project are not clear, a Preliminary Study is conducted prior to a Basic Design Study.

Thirdly, the Government of Japan appraises the Project to see whether or not it is suitable for Japan's Grant Aid Program, based on the Basic Design Study report prepared by JICA and the results are then submitted to the Cabinet for approval.

Fourthly, the Project approved by the Cabinet becomes official when pledged by the Exchange of Notes signed by the both Governments.

Finally, for the implementation of the Project, JICA assists the recipient country in preparing contracts and so on.

2. Contents of the Study

(1) Contents of the Study

The purpose of the Study (Preliminary Study/Basic Design Study) conducted on a project requested by JICA is to provide a basic document necessary for appraisal of the project by the Japanese Government. The contents of the Study are as follows:

- a) to confirm background, objectives, benefits of the project and also institutional capacity of agencies concerned of the recipient country necessary for project implementation,
- b) to evaluate appropriateness of the Project for the Grant Aid Scheme from a technical, social and economical point of view,
- c) to confirm items agreed on by the both parties concerning a basic concept of the project,
- d) to prepare a basic design of the project,
- e) to estimate cost involved in the project.

Final project components are subject to approval by the Government of Japan and therefore may differ from an original request.

Implementing the project, the Government of Japan requests the recipient country to take necessary measures involved which are itemized on Exchange of Notes.

(2) Selecting (a) Consulting Firm(s)

For smooth implementation of the study, JICA uses (a) consulting firm(s) registered. JICA selects (a) firm(s) through proposals submitted by firms which are interested. The firm(s) selected carry(ies) out a Basic Design Study and write(s) a report, based upon terms of reference made by JICA.

The consulting firm(s) used for the study is(are) recommended by JICA to a recipient country after Exchange of Notes, in order to maintain technical consistency and also to avoid possible undue delay in implementation caused if a new selection process is repeated.

(3) Status of a Preliminary Study in the Grant Aid Program

A Preliminary Study is conducted during the second step of a project formulation & preparation as mentioned above.

A result of the study will be utilized in Japan to decide if the Project is to be suitable for a Basic Design Study

Based on the result of the Basic Design Study, the Government would proceed to the stage of decision making process (appraisal and approval).

It is important to notice that at the stage of Preliminary Study, no commitment is made by the Japanese side concerning the realization of the Project in the scheme of Grant Aid Program.

3. Japan's Grant Aid Scheme

1) What is Grant Aid?

The Grant Aid Program provides a recipient country with non reimbursable funds needed to procure facilities, equipment and services for economic and social development of the country under the following principles in accordance with relevant laws and regulations of Japan. The Grant Aid is not in a form of donation or such.

2) Exchange of Notes (E/N)

The Japan's Grant Aid is extended in accordance with the Exchange of Notes by both Governments, in which the objectives of the Project, period of execution, conditions and amount of the Grant etc. are confirmed.

3) "The period of the Grant Aid" means one Japanese fiscal year which the Cabinet approves the Project for. Within the fiscal year, all procedure such as Exchange of Notes, concluding a contract with (a) consulting firm(s) and (a) contractor(s) and a final payment to them must be completed.

4) Under the Grant, in principle, products and services of origins of Japan or the recipient country are to be purchased.

When the two Governments deem it necessary, the Grant may be used for the purchase of products or services of a third country origin.

However the prime contractors, namely, consulting, contractor and procurement firms, are limited to "Japanese nationals". (The term "Japanese nationals" means Japanese physical persons or Japanese juridical persons controlled by Japanese physical persons.)

5) Necessity of the "Verification"

The Government of the recipient country or its designated authority will conclude into contracts in Japanese yen with Japanese nationals. Those contracts shall be verified by the Government of Japan. The "Verification" is deemed necessary to secure accountability to Japanese tax payers.

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6) Undertakings required to the Government of the recipient country

In the implementation of the Grant Aid, the recipient country is required to undertake necessary measures such as the following:

- a) to secure land necessary for the sites of the project and to clear and level the land prior to commencement of the construction work,
- b) to provide facilities for distribution of electricity, water supply and drainage and other incidental facilities in and around the sites,
- c) to secure buildings prior to the installation work in case the Project is providing equipment,
- d) to ensure all the expenses and prompt execution for unloading, customs clearance at the port of disembarkation and internal transportation of the products purchased under the Grant Aid,
- e) to exempt Japanese nationals from customs duties, internal taxes and other fiscal levies which will be imposed in the recipient country with respect to the supply of the products and services under the Verified Contracts,
- f) to accord Japanese nationals whose services may be required in connection with the supply of the products and services under the Verified Contracts, such facilities as may be necessary for their entry into the recipient country and stay therein for the performance of their work.

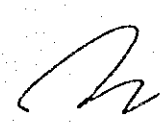
7) Proper Use

The recipient country is required to maintain and use facilities constructed and equipment purchased under the Grant Aid properly and effectively and to assign staff necessary for their operation and maintenance as well as to bear all expenses other than those to be borne by the Grant Aid.

8) Re-export

The products purchased under the Grant Aid shall not be re-exported from the recipient country.

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9) Banking Arrangement (B/A)

(a) The Government of the recipient country or its designated authority shall open an account in the name of the Government of the recipient country in an authorized foreign exchange bank in Japan (hereinafter referred to as "the Bank"). The Government of Japan will execute the Grant Aid by making payments in Japanese yen to cover the obligations incurred by Government of the recipient country or its designated authority under the contracts verified.

(b) The payments will be made when payment requests are presented by the Bank to the Government of Japan under an Authorization to Pay issued by the Government of the recipient country or its designated authority.

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ANNEX III

The following measures shall be taken by the Government of the Kingdom of Swaziland on condition that Japan's Grant Aid is extended to the Project.

1. To secure the sites for the Project ;
2. To exempt taxes and to take the necessary measures for customs clearance of the materials and equipment brought for the Project at the port of disembarkation ;
3. To exempt Japanese Nationals from customs duties, internal taxes and other fiscal levies which may be imposed in Swaziland with respect to the supply of the products and services under the verified contracts ;
4. To accord Japanese Nationals, whose services may be required in connection with the supply of products and services under the verified contracts, such facilities as may be necessary for their entry into Swaziland and stay therein for the performance of their work;
5. To use and maintain properly and effectively all the equipment purchased under the Grant ;
6. To bear all the expences other than those to be borne by the Japan's Grant Aid, necessary for the transportation and the installation of the equipment.

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6. References

Reference

- 1. ECONOMIC AND SOCIAL REFORM AGENDA (Final Draft), 1997. 1**
MINISTRY OF ECONOMIC PLANNING & DEVELOPMENT

- 2. ANNUAL REPORT (1996)**
HEALTH PLANNING UNIT, MINISTRY OF HEALTH AND SOCIAL WELFARE

- 3. PROPOSAL FOR NEW CAPITAL PROJECT, MBABANE HOSPITAL PHASE V,**
HEALTH PLANNING UNIT, MINISTRY OF HEALTH AND SOCIAL WELFARE, 1996

- 4. PROPOSAL FOR NEW CAPITAL PROJECT, PIGGS PEAK GOVERNMENT**
HOSPITAL RENOVATION AND EXPANSION
HEALTH PLANNING UNIT, MINISTRY OF HEALTH AND SOCIAL WELFARE, 1996

- 5. HEALTH SECTOR STUDY PHASE 1 FINAL REPORT**
MINISTRY OF HEALTH AND SOCIAL WELFARE, February 1997

- 6. ESTIMATES FOR THE YEAR FROM 1ST APRIL 1997 TO 31ST MARCH 1998**
THE GOVERNMENT OF THE KINGDOM OF SWAZILAND, 1997

- 7. MANKAYANE HOSPITAL MASTER PLAN REPORT, JUNE 1993**
THE GOVERNMENT OF SWAZILAND, WC / 45 / HO40 / 92

JICA