

## **Chapter 2 Contents of the Project**

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### 2-1 Basic Concept of the Project

The purpose of this Project is to improve and revitalize each target facility and their capacities and establish a system to provide more effective care and services by providing basic medical equipment and conducting technical training for health workers. Shown below is an outline of the Project contents that have been confirmed by the authorities concerned, including those on the Surinamese side.

**Table 2-1** An Overview of the Project

Project Design Matrix
<i>[Overall Objective]</i> To improve mother-and-Child health in Suriname.
<i>[Project Objective]</i> To enhance the medical services provided by the target medical facilities by upgrading the basic infrastructure of the facilities, including building facilities, medical equipment, human resources, skills, and administrative/financial systems.
<i>[Outcome of the Project]</i> The target medical facilities will be installed with basic medical equipment.
<i>[Input]</i> (1) Japanese side <ul style="list-style-type: none"> <li>• Procure medical equipment for the target medical facilities.</li> <li>• Implement the Soft Component Program.</li> </ul> <hr style="border-top: 1px dotted black;"/> (2) Surinamese side <ul style="list-style-type: none"> <li>• Renovate the buildings of the target clinics.</li> <li>• Give technical training to the medical staff concerned.</li> <li>• Strengthen the operational/maintenance system of the facilities and equipment.</li> </ul>

**Commencement and Completion of the Project:**

This Project will officially commence at the beginning of the technical training of the relevant Surinamese personnel following the signing of the Exchange of Notes (E/N) by both Governments and end at the completion of the Japanese Assistance Project.

**Table 2-2** Verifiable Indicators of 2 hospitals for the Project

Indices	'sLands Hospital		Nickerie Regional Hospital	
	Baseline	Target	Baseline	Target
(1) Clinical Activities				
- Number of Delivery	-	-	254	300
- Number of Caesarean Operation	444	462	-	-
- Total Number of Prenatal Care Examination	12,069	14,500	670	800
(2) Medical Equipment (Number of Patients)				
- Ultrasound Diagnostic Equipment	4,993	6,000	1,522	1,800
- X-ray Diagnostic Equipment	3,235	3,500	4,092	4,500

**Notes:**

1. Operational status of equipment is expressed by the aggregate number of patients for whom the equipment was used.
2. Baselines are the actual records of 2002.
3. Targets are to be achieved two years after the handover of the medical equipment.

**Table 2-3** Verifiable Indicators of 5 clinics for the Project

Indices	A		B		C		D		E	
	BL	TI	BL	TI	BL	TI	BL	TI	BL	TI
(1) Clinical Activities										
- Number of Delivery	135	150	69	75	0	87	0	37	0	25
- Total Number of Prenatal Care Examination	262	400	252	400	596	700	143	300	92	200
(2) Medical Equipment (Number of Patients)										
- Ultrasound Diagnostic Equipment	0	200	0	200	0	350	0	150	0	100
- Electrocardiograph (ECG)	0	240	0	240	0	240	0	240	0	240

**Keys:**

A: Wonoredjo Clinic, B: Lelydrop Clinic, C: Derde Rijweg Clinic, D: Tijgerkreek Clinic, E: Koewarasan Clinic

BL: baseline, TI: target index

**Notes:**

- Operational status of equipment is expressed by the aggregate number of patients for whom the equipment was used.
- Baselines are the actual records of 2002.
- Targets are to be achieved two years after the handover of the medical equipment.

Source) Tables 3-2 and 3-3 were created based on discussions with the personnel of the MOH and the target medical facilities.

## 2-2 Basic Design of the Requested Japanese Assistance

### 2-2-1 Design Policy

Prior to formulating the basic design of the Project, the following policies were set up respecting surrounding conditions and related environment.

#### (1) Basic Policy

Basic guidelines for the proposed Japanese Assistance Project are as follows:

- The Project should be in line with the national development plan of the Surinamese Government for the health/medical sector.
- The Project should be manageable within the framework of the Grant Aid system of Japan.
- The Project should not duplicate the activities of other donor countries and organizations.
- The target facilities must be engaged in medical activities that are contributing to mother-and-child health.
- The medical equipment to be procured by this Project should be operated and maintained within the resources of the Surinamese side.

#### (2) Policy on Staff Training Program

The Surinamese government is planning the staff-training program. Those are training sessions for general practitioners in the five (5) clinics in the areas of diagnostic and curative in delivery, pediatrics and laboratory services. Furthermore, Academic Hospital Paramaribo will train

operation of ultrasound diagnostic equipment and laparoscope with diagnostic methods for 'sLands Hospital and Nickerie Regional Hospital concerned, managed by the MOH. The selection of equipment shall be prepared with the consideration of above-mentioned activities by the Surinamese side.

### **(3) Policy on Facility Infrastructure**

The Surinamese government will undertake the renovation work of the target clinics. We, as a consultant, will provide guidance and specific technical specifications so that they will be able to renovate the facilities in the way most suitable for installing the equipment. Although the electric power supply in Suriname is relatively stable, installing automatic voltage regulators (AVR) should be considered for the equipment used in operating rooms and neonatal care, as the accuracy of such equipment can be affected by voltage fluctuation.

### **(4) Policy on Using Local Procurement and Local Representatives**

In Paramaribo, there are six dealerships of medical equipment manufacturers, of which three, namely, N.V. Elgawa, Harsons Meditech Inc., and Triangle, can provide after-sales maintenance services. Our hearing survey in Miami, U.S.A. revealed that American manufacturers were not keen on selling their products in Suriname because of the small market size and the absence of nonstop flight between the two countries. Home appliance shop owners in Paramaribo confirmed the above statement by saying that Dutch products had advantage over American products in terms of availability of technical follow-up services. Only a few American companies have agents in Miami to provide maintenance services for Surinamese customers, whereas the vast majority have set up dealerships in Caracas, Venezuela, to and from which traveling by air is much more convenient. As far as we have researched, five agents of Japanese medical equipment makers are situated in Venezuela (by end of June 2003). The existing equipment of the target facilities of this Project mostly consists of Dutch, German, Swedish, French, American, Japanese, and other third-country products. Regular beds, wooden cupboards to store medical instruments, and other such simple items, but no medical equipment, are manufactured locally. In view of the above, the equipment for this Project will be chosen preferentially from Japanese, European, or American products, for which after-sales services will be available from agents in Suriname or Venezuela.

### **(5) Policy on the Maintenance / Management Capability of the Implementing Agency**

In order to achieve the goals of the Project, it is necessary to have a system that enables the equipment procured by the Project to be utilized effectively. Due to differences in the functions of equipment, some equipment is used daily for diagnosis and treatment while others are used only in

emergencies. However, all these types of equipment must be maintained to function properly all the time regardless of the frequency of usage.

As for the maintenance of the new equipment to be procured under this Project, the target health facilities plan to follow the same procedures as those for their existing equipment. In other words, the hospitals will contract outside local representatives of the equipment manufacturers, and RGD will take care for the maintenance of the equipment of the clinics. At the same time, establishing a system to reinforce daily preventive maintenance, such as cleaning before and after using equipment, is a very effective approach. We would suggest the following methods for the maintenance of the equipment.

### **1) Maintenance work by each health facility**

Standard maintenance work required for the equipment procured by the Project should be provided by each health facility in accordance with the procedures described in the operation and maintenance manuals, which come with the equipment.

### **2) Repair work by the GMTD and by local representatives of manufacturers**

Ideally, the Project should choose preferentially the types of equipment that could be maintained easily on a daily basis at each target facility. However, more and more medical devices today are electronically controlled and, if broken down, they cannot be repaired easily, as it is difficult to identify the faulty parts within the complicated mechanisms. Examples of such items are patient monitor, infant ventilator, ultrasound diagnostic equipment and X-ray diagnostic equipment. These items need to be serviced by GMTD or the local agents of the equipment manufacturers.

### **3) Maintenance system of each facility**

A checkup before and after each use is essential for keeping the performance of any type of equipment at the optimum level. It is ideal that the members of medical staff who use the equipment conduct such daily checkups. Therefore, it is necessary to provide the medical staff with training programs enabling them to perform daily maintenance procedures for equipment. It would be ideal that the supplier of the equipment could provide such daily maintenance training in addition to ordinary operational training at the time of the installation of the equipment. However, in reality, the training sessions provided by the supplier are very basic with limited contents. Thus, in this Project, the consultant will consider additional instructions to include in the Tender Documents to supplement the operational training provided by the supplier, and help health facility staff understand the importance of maintenance and to establish the

above-mentioned system which enables the health facility staff to perform daily maintenance procedures and repair work.

#### **(6) Policy on Determining the Scope and Grades of Medical Equipment**

The scope and the grades of the equipment to be procured under this Project shall be determined according to the following guidelines:

- The equipment should be provided mainly for the clinical departments that are related to the improvement of mother-and-child health. The Project will renew the aged equipment for the target hospitals and provide basic medical equipment necessary to comply with the Primary Healthcare Service Package for the target clinics\*\*.
- If the installation of certain equipment items requires the Surinamese government to renovate the target facilities and/or conduct the training of personnel to be operating the equipment, such items should be selected only to the extent that such renovation work and/or training is possible.
- Equipment should be selected within the technical and financial capabilities of the Surinamese side to operate and maintain the equipment.
- Equipment should be procured only to the extent that they will be able to support the medical activities qualitatively and quantitatively of the target facilities.

#### **\*\*Currently Available Services and Target Levels of Services of the Project**

As for the two target hospitals, this Project intends to restore their original medical service capabilities by renewing their aged equipment. To the target clinics, the Project will introduce the Primary Healthcare Service Package, according to which they can provide obstetric and neonatal care and simple medical examinations in addition to their current prevention-oriented services. While clinics in general have been incapable of rendering obstetric and neonatal care, our field survey confirmed that two of the five target clinics had begun providing delivery services as a result of their own efforts to adopt the Primary Healthcare Service Package.

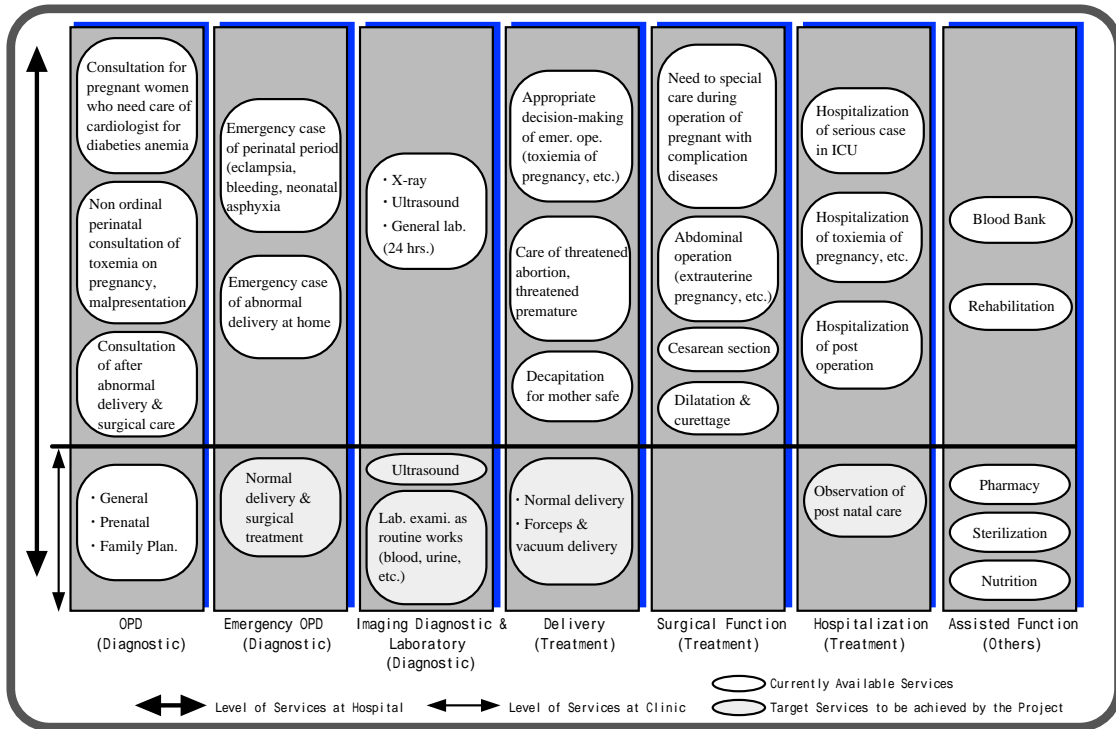


Figure 2-1 Currently Available Services & Target Level of Services in the Field of Obs. & Gyne.

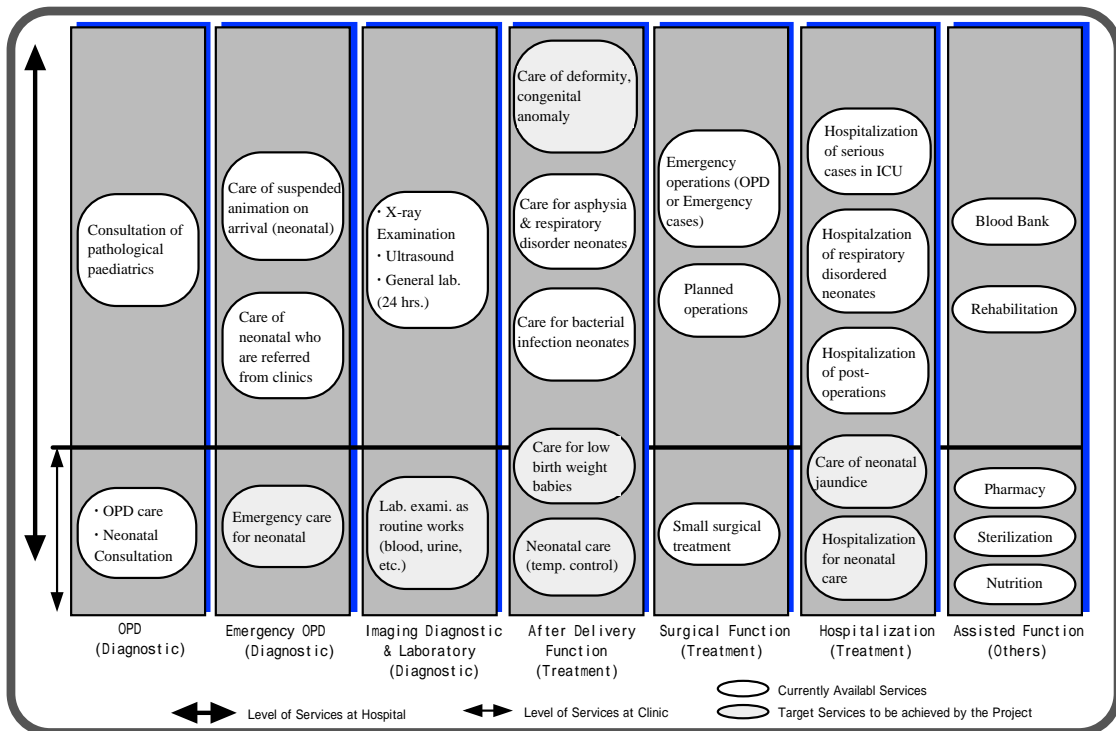


Figure 2-2 Currently Available Services & Target Level of Services in the Field of Pediatrics

### **(7) Policy for Social Conditions**

The official language of Suriname is Dutch, which is used in all parts of Surinamese lives from daily conversations to official documents. Although doctors and other highly-educated people understand English, some nurses and laboratory technicians have difficulties reading English documents. Therefore, Dutch translation will be attached to the instruction manuals of the equipment to be operated by nurses and technicians so that they can understand the basic maneuver.

### **(8) Policy on Work Schedule**

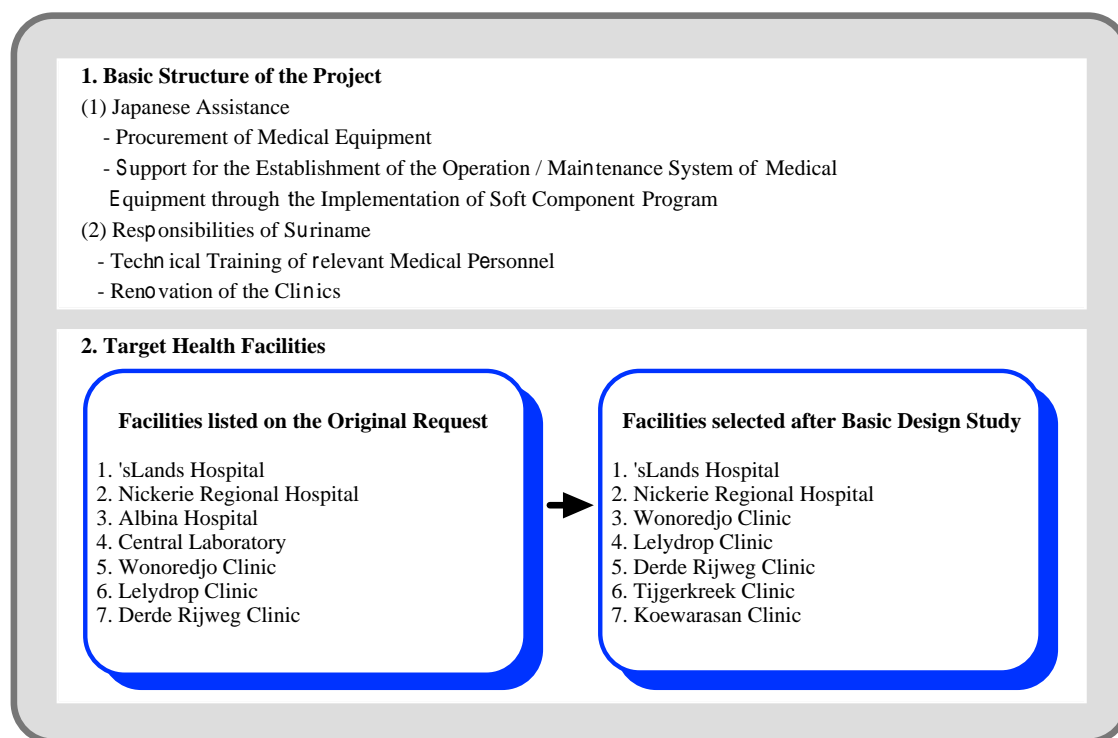
Surinamese yearly climatic cycle consists of four seasons: minor dry season (March–April), rainy season (May–August), dry season (September–November), and minor rainy season (December–February). The average rainfall during the rainy season from May to August is about 300mm, which could cause flood in many sections of the roads in the country. Thus, it is best to avoid transporting the equipment during this season. Also, since the target health facilities are situated in scattered parts of the country, the inland transportation routes should be carefully worked out when drafting the implementation schedule. If the installation of certain equipment requires the suspension of medical activities at some facilities, the work schedule should be so designed to minimize such interruption.

## **2-2-2 Basic Plan**

### **(1) Overall plan**

The figure below shows an overview of the Project based on the above design policy. The initial request from the Surinamese Government listed three hospitals ('sLands, Nickerie, and Albina), Central Laboratory, and three clinics (Wonoredjo, Lelydrop, and Derde Rijweg) as target facilities of the Project. However, Central Laboratory and Albina Hospital were excluded from the Basic Design of the Project as it was confirmed that the former was not engaged in the kind of activities that would have direct impact on the enhancement of mother-and-child care and that the latter was supplied with equipment under the assistance of the French Government after the Surinamese Government sent the request to the Japanese Government. Subsequently, the Surinamese Government submitted another request to add two clinics in the suburb of Paramaribo, namely Tijgerkreek and Koewarasan, to the Project. In response to the additional request, the Japanese Government dispatched a study team to Suriname to verify the necessity and the appropriateness of the inclusion of these clinics. The study team, based on the conclusion that upgrading of these two clinics was necessary for providing enhanced mother-and-child health care services especially for those living in rural areas, decided to add these clinics to the Project.





**Figure 2-3** Contents and Structure of the Assistance Project

Basic guideline for the procurement of medical equipment is to supply or renew the kind of items that are indispensable to the provision of mother-and-child health care services at each target hospital/clinic and necessary for other basic medical care but are lacking or deteriorated. As for the facility renovation, the site survey and subsequent discussions with the Surinamese counterparts confirmed the need for repair work on certain parts of the clinics' buildings that had leaks or other damages, as well as the X-ray operating rooms of the two hospitals. The Surinamese side will undertake the renovation work. At the two hospitals, general X-rays are currently taken by putting up an X-ray shielding screen while the operator wears a lead apron. To ensure safety, X-ray apparatus should be operated from a shielded operating room. Thus, the existing X-ray rooms will be renovated to create such spaces.

## **(2) Equipment plan**

The equipment plan for each clinical department is summarized on determining the policy of scope and grades of medical equipment which were mentioned in above paragraph.

### **1) Outpatient Department**

The contents of the equipment include the general and basic equipment for outpatient examination and treatment. Our study found that many of the items had been originally

acquired by the support of foreign countries some 15 to 20 years ago and had not been replaced or supplemented ever since. As a result, such equipment items are deteriorated, broken down, or quantitatively insufficient. By taking into account the types of medical activities, the medical personnel, and the state of the existing equipment of each health facility, the plan shall be made to replace, add, or procure the equipment as needed.

This Project will procure gynecological examination tables, cardio-tocograph, and ultrasonic diagnostic equipment for the Obs/Gyn Outpatient Department of the 'sLands Hospital, ECG, defibrillators, and other emergency care equipment for the Emergency Department of Nickerie Regional Hospital, and weighing scales, stethoscopes, sphygmomanometers, ECG, and other basic equipment for the Outpatient Department of each target clinic.

## **2) Labour and Delivery Room**

The Delivery Rooms are currently installed with basic equipment. Since most of them have not been replaced or supplemented, they are deteriorated, broken down, and/or became insufficient in number. Replacement, addition, and/or procurement of this equipment shall be planned in consideration of the activities, the personnel, and the present state of the existing equipment of each health facility.

This Project will procure delivery tables, infant warmers, vacuum extractors, doppler fetus detectors, and other basic equipment for the target hospitals and clinics.

## **3) Nursery**

The Nurseries require basic equipment to provide care for premature and low-weight babies. Specifically, the Project will provide bilirubin-meters, pulse-oxymeters, phototherapy units, etc. for the target hospitals and clinics.

## **4) Operation Room**

This Project will provide equipment for the operation rooms, especially in the field of obstetrics. Our study found that many operating tables were old and could not be vertically adjusted or tilted. As for the anesthetic equipment, the hospitals were using only the basic-type halothane vaporizers. In light of the above, this Project will replace or supplement the deteriorated and/or broken down equipment of the two hospitals.

Specifically, the Project will renew the operating tables, anesthetic equipment,

electrosurgical-units, and patient monitors of both hospitals and additionally replace the laparoscope and gastrointestinal-fiberscope of Nickerie Regional Hospital.

**5) Imaging Diagnostic Department (X-ray and Ultrasound)**

This Project will procure fluoroscopic X-ray diagnostic equipment, mobile X-ray diagnostic equipment, X-ray film processors and ultrasound diagnostic equipment for the two target hospitals.

**6) Central Sterilizing Supply Department (C.S.S.D.)**

This Project will replace the aged high-pressure steam sterilizers of the two hospitals with the possible addition of water-treatment devices.

**7) Laboratory Department**

This Project will provide equipment for the laboratory departments of the two hospitals and the five clinics. More specifically, the Project will renew the biochemical analyzer, binocular microscopes, centrifuges, and other old and dilapidated equipment of 'sLands Hospital, and replace the water-distiller, centrifuges, blood cell counter, spectrophotometer, binocular microscopes of Nickerie Regional Hospital. Equipment for the clinics includes binocular microscopes, refrigerators, hot-air sterilizers, spectrophotometers, centrifuges, and water distillers.

Table 2-4 is the final list of the equipment procured for the Project.

**Table 2-4** List of Medical Equipment

(1) 'sLands Hospital

No.	Department	Code	Name of Equipment	Category	Q'ty
1	Obstetric & Gynecology	1-1-1	Gynecological Examination Table	Replace	2
2		1-1-2	Gynecological Examination Unit	Replace	2
3		1-1-3	Cardio Tocograph	Replace	1
4		1-1-4	Ultrasound Diagnostic Equipment	Replace	1
5	Delivery	1-2-1	Examination Light	Replace	3
6		1-2-2	Delivery Table	Replace	6
7		1-2-3	Infant Care Unit	Replace	1
8		1-2-4	Infant Warmer	Replace	3
9		1-2-5	Vacuum Extractor	Replace	1
10		1-2-6	Doppler Fetus Detector	Replace	3
11	Nursery	1-3-1	Phototherapy Unit	Replace	3
12		1-3-2	Bilirubin Meter, Skin Type	Newly Introduced	1
13		1-3-3	Pulse Oximeter	Replace	2
14	Operation Room	1-4-1	Operating Table	Replace	3
15		1-4-2	Anesthesia Apparatus	Replace	1
16		1-4-3	Electrosurgical Unit	Replace	2
17		1-4-4	Patient Monitor	Replace	1
18	ICU	1-5-1	Bedside Monitor	Replace	2
19		1-5-2	Defibrillator	Replace	1
20	Sterilization	1-6-1	High Pressure Steam Sterilizer	Replace	2
21		1-6-2	High Pressure Steam Sterilizer, Table Top Type	Replace	1
22	X-ray / Ultrasound	1-7-1	Fluoroscopic X-ray Diagnostic Equipment	Newly introduced	1
23		1-7-2	Automatic X-ray Film Processor	Replace	1
24		1-7-3	Ultrasound Diagnostic Equipment (Color)	Newly introduced	1
25		1-7-4	Mobile X-ray Diagnostic Equipment	Replace	1
26	Laboratory	1-8-1	Automatic Chemistry Analyzer	Replace	1
27		1-8-2	Binocular Microscope	Replace	3
28		1-8-3	Centrifuge, Table Top Type	Replace	1

## (2) Nickerie Regional Hospital

No.	Department	Code	Name of Equipment	Category	Q'ty
1	Emergency	2-1-1	Resuscitator for Neonatal and Adult	Replace	2
2		2-1-2	Electrocardiograph	Replace	1
3		2-1-3	Defibrillator	Newly introduced	1
4	Delivery	2-2-1	Examination Light	Replace	1
5		2-2-2	Colposcope	Replace	1
6		2-2-3	Suction Unit	Replace	1
7		2-2-4	Doppler Fetus Detector	Replace	1
8	Nursery	2-3-1	Infant Warmer	Replace	1
9		2-3-2	Infant Incubator	Replace	3
10		2-3-4	Phototherapy Unit	Replace	1
11		2-3-5	Bilirubin Meter, Skin Type	Newly introduced	1
12		2-3-6	Pulse Oxymeter	Replace	2
13		Operation Room	2-4-1	Anesthetic Apparatus	Replace
14	2-4-2		Pulse Oxymeter	Replace	2
15	2-4-3		Laparoscope	Replace	1
16	2-4-4		Gastro-intestinal Fiberscope (Upper and Lower)	Replace	1
17	2-4-5		Operating Table	Replace	1
18	2-4-6		Patient Monitor	Replace	1
19	Sterilization	2-5-1	High Pressure Steam Sterilizer	Replace	1
20	X-ray / Ultrasound	2-6-1	Fluoroscopic X-ray Diagnostic Equipment	Newly introduced	1
21		2-6-2	Automatic X-ray Film Processor	Newly introduced	1
22		2-6-3	Ultrasound Diagnostic Equipment	Replace	1
23		2-6-4	Mobile X-ray Diagnostic Equipment	Replace	1
24	Laboratory	2-7-1	Water Distilling Equipment	Replace	1
25		2-7-2	Centrifuge, Table Top Type	Replace	1
26		2-7-3	Hematocrit Centrifuge	Replace	1
27		2-7-4	Automatic Blood Cell Counter	Replace	1
28		2-7-5	Differential Leucocyte Counter	Replace	1
29		2-7-6	Spectrophotometer	Replace	1
30		2-7-8	Binocular Microscope	Replace	1
31	Pharmacy	2-8-1	Water Distilling Equipment	Replace	1

## (3) 5 Clinics

No.	Department	Code	Name of Equipment	A	B	C	D	E	Q'ty
1	Outpatient	3-1-1	Weighing Scale, Adult	1	1	1	1	1	5
2		3-1-2	Stethoscope, Dual Type	1	1	1	1	1	5
3		3-1-3	Sphygmomanometer	1	1	1	1	1	5
4		3-1-4	Diagnostic Set	1	1	1	1	1	5
5		3-1-5	Small Operating Instrument Set	2	2	2	2	2	10
6		3-1-6	Electrocardiograph	1	1	1	1	1	5
7		3-1-7	Examination Light	1	1	1	1	1	5
8		3-1-8	Sterilizer, Table Top Type	1	1	1	1	1	5
9	Delivery	3-2-1	Weighing Scale, Infant	1	1	1	1	1	5
10		3-2-2	Resuscitator	1	1	1	1	1	5
11		3-2-3	Delivery Table	1	1	1	1	1	5
12		3-2-4	Suction Unit	1	1	1	1	1	5
13		3-2-5	Doppler Fetus Detector	1	1	1	1	1	5
14		3-2-6	Examination Light	1	1	1	1	1	5
15	Nursery	3-3-1	Infant Incubator	1	1	1	1	1	5
16		3-3-2	Infant Warmer	1	1	1	1	1	5
17		3-3-3	Phototherapy Unit	1	1	1	1	1	5
18		3-3-4	Bilirubin Meter, Skin Type	1	1	1	1	1	5
19	Ultrasound	3-4-1	Ultrasound Diagnostic Equipment	1	1	1	1	1	5
20	Laboratory	3-5-1	Binocular Microscope	1	1	1	1	1	5
21		3-5-2	Refrigerator	1	1	1	1	1	5
22		3-5-3	Drying Oven	1	1	1	1	1	5
23		3-5-4	Test Tube Mixer	1	1	1	1	1	5
24		3-5-5	Differential Leucocyte Counter	1	1	1	1	1	5
25		3-5-6	Bilirubin Analyzer	1	1	1	1	1	5
26		3-5-7	Spectrophotometer	1	1	1	1	1	5
27		3-5-8	Centrifuge, Table Top	1	1	1	1	1	5
28		3-5-9	Hematocrit Centrifuge	1	1	1	1	1	5
29		3-5-10	Water Distilling Equipment	1	1	1	1	1	5

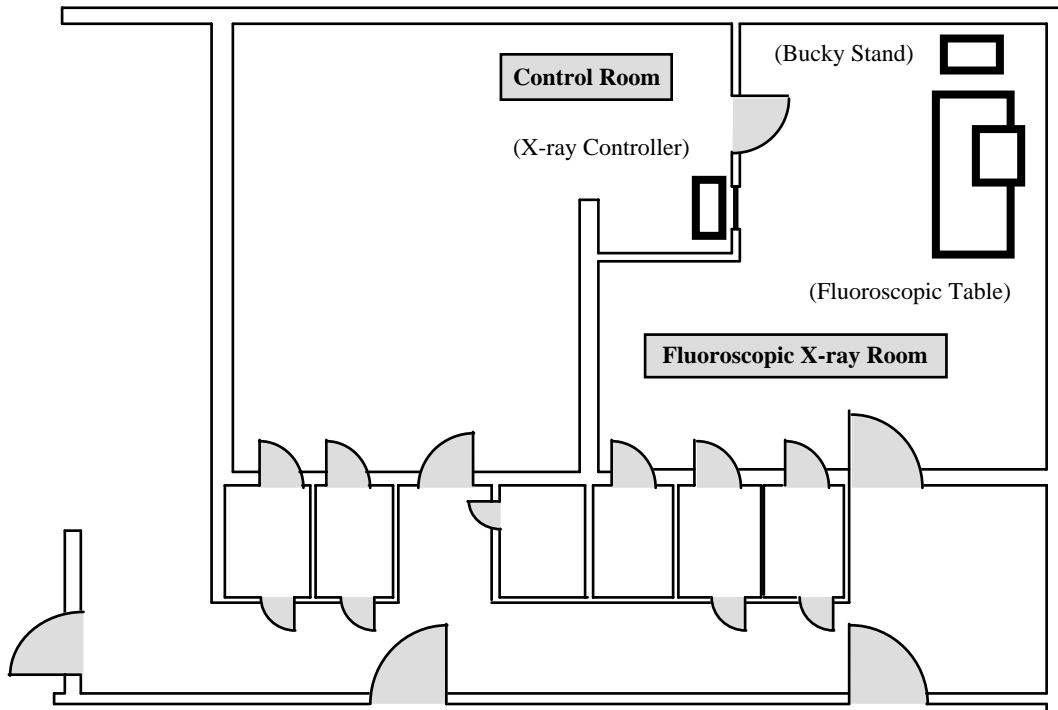
**Notes:**

A: WonoredjoClinic, B: Lelydorp Clinic, C: Derde Rijweg Clinic, D: Tijgerkreek Clinic, E: Koewarasan Clinic

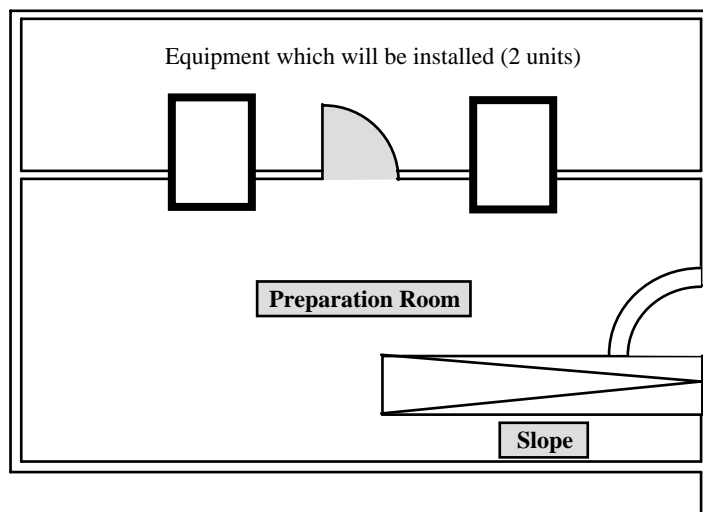
:Replacement, : Newly introduced

**2-2-3 Basic Design Drawing (Installation Plan of the Major Equipment)**

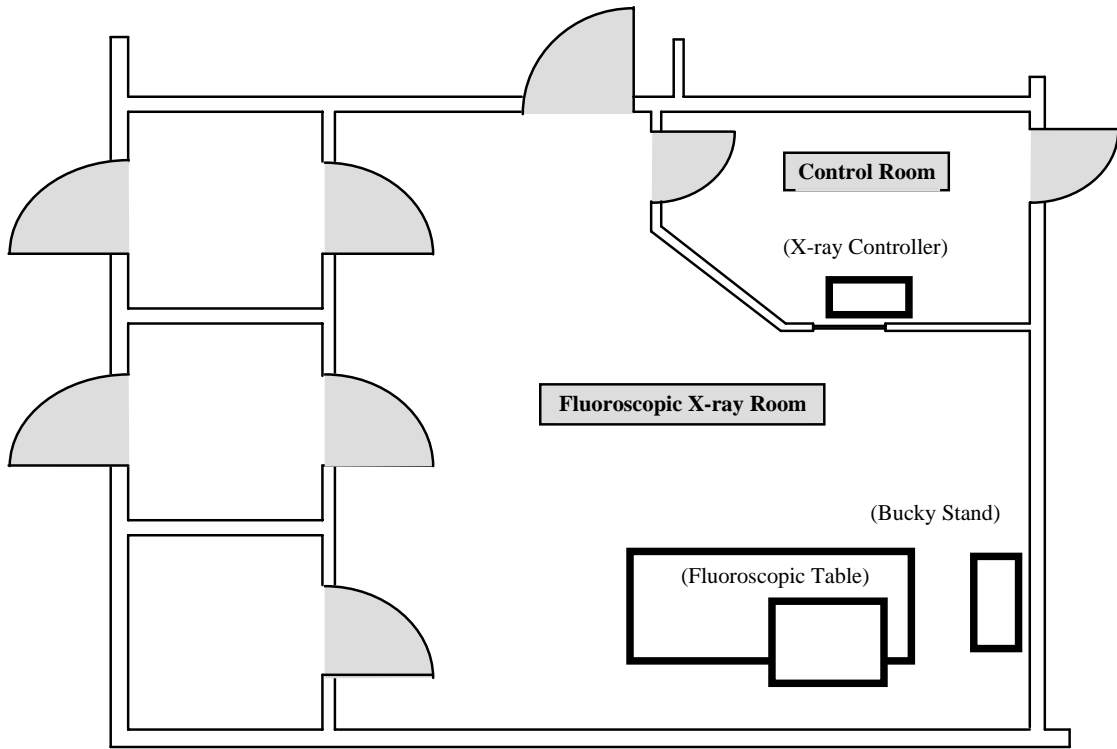
The installation plan of the Fluoroscopic X-ray Diagnostic Equipment and High Pressure Steam Sterilizer of the 2 hospitals are referred as the following figures:



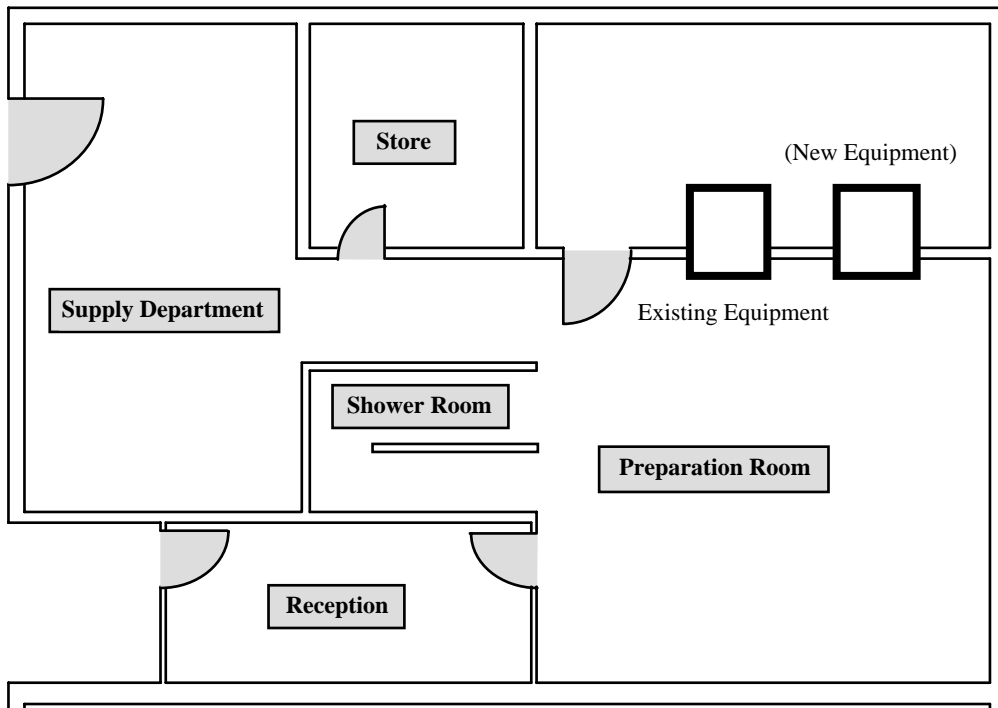
**Installation Plan of the Fluoroscopic X-ray Diagnostic Equipment ('sLands Hospital)**



**Installation Plan of the High Pressure Steam Sterilizer ('sLands Hospital)**



**Installation Plan of the Fluoroscopic X-ray Diagnostic Equipment (Nickerie Regional Hospital)**



**Installation Plan of the High Pressure Steam Sterilizer (Nickerie Regional Hospital)**



## **2-2-4 Implementation Plan**

### **2-2-4-1 Implementation Policy**

#### **(1) Standard implementation procedure**

Based on this report, related governmental agencies of Japan reviews the contents of this proposed Project, and, following the approval of the Japanese Cabinet, the Exchange of Notes (E/N) will be officially executed by and between the governments of Japan and Suriname under the framework of the Grant Aid system of the Japanese government. In accordance with the E/N, the consultant and the equipment supplier for this Project will conclude agreements with the government of Suriname, which are to be approved by the Japanese government.

#### **(2) Implementation schedule**

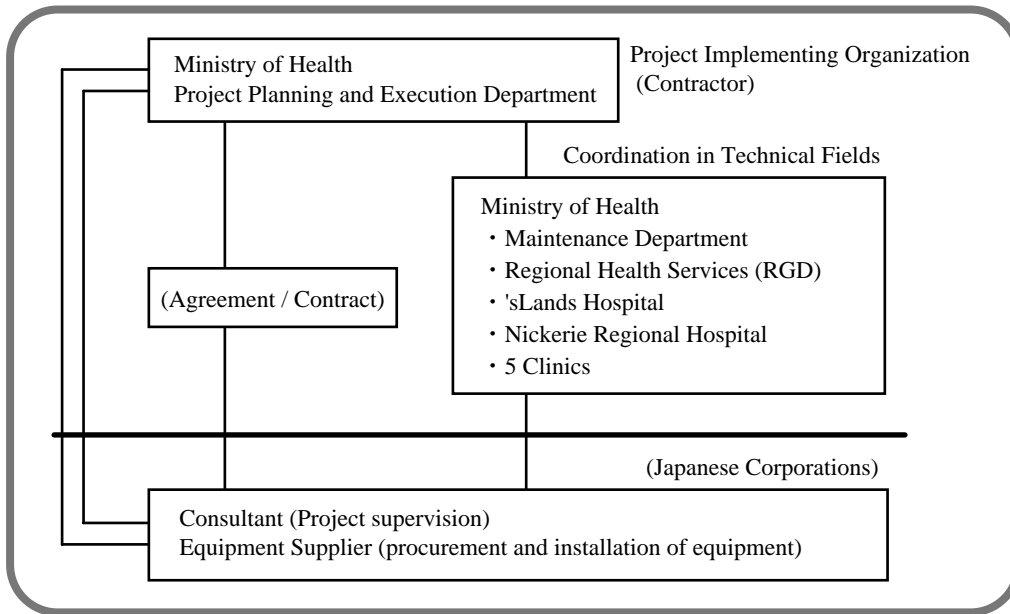
This Project consists of the procurement and installation of medical equipment, which needs to be done without interrupting the medical activities of the target facilities. Thus, the entire work process is estimated to take about twelve months.

#### **(3) Procurement procedure**

The equipment supplier shall be selected through a competitive tender open to the Japanese companies in accordance with the grant aid scheme.

#### **(4) Project implementation system**

The Project shall be implemented under the supervision of the MOH. The MOH shall be the party on the Surinamese side to the Design/Supervision Contract, Equipment Procurement Contract, Banking Arrangement (B/A), and other such agreements to be concluded for this Project. The Project Planning and Execution Department of the MOH and the Regional Health Service (RGD), which has jurisdiction over the two hospitals and the five clinics, are in charge of coordinating discussions on the technical matters and other businesses related to the Project.



**Figure 2-4** Project Implementing System

## **(5) Roles of the consultant and equipment supplier**

### **1) Consultant**

After the signing of the E/N, the MOH shall conclude the consultancy agreement on tender-related works and the supervision of the Project with the Japanese consultant company, and the Japanese government shall verify said agreement. For the smooth implementation of the Project, it is important to conclude the agreement immediately after signing of the E/N. After the Japanese government verifies the agreement, the consultant shall start services such as preparation of tender documents, obtain the approval, conduct the tender, and supervision of the implementation of the Project.

### **2) Equipment Supplier**

The contractor to procure and install the equipment for the Project shall be selected through tender. As a rule for the tender, the bidder offering the lowest price shall be the successful bidder. The contractor will then conclude the supply contract with the successful bidder of the equipment and obtain the verification of the Japanese government. The contractor shall complete required works in the contract and handover the equipment to the MOH after the final inspection.

#### **2-2-4-2 Implementation Conditions**

In implementing the Project, special attention shall be paid to the following points.

##### **(1) To minimize the interruption of medical services during the installation period**

Because health facilities covered by the Project continue the daily medical care services during the installation work, the period in which the services are interrupted must be minimized. In order to minimize the interruption, the procurement process of the equipment shall be strictly supervised, and the installation and inspection schedule shall be formulated through discussion in advance and strictly observed with those related to the health facilities. Especially at the time of installation, safety measures shall be taken for the patients and the medical staff.

##### **(2) Inland transportation routes in Suriname**

Large cargo vessels can enter Paramaribo Port. Although the target health facilities are located in scattered areas in northern Suriname, the equipment will be unloaded at Paramaribo Port and therefrom transported to the respective sites by container truck. However, for 'sLands Hospital and some clinics in the Paramaribo Metropolitan Area, where large trucks are difficult to enter, pickup trucks may be used.

##### **(3) Customs clearance and tax exemption procedure**

In implementing the Project, services conducted by the Japanese nationals such as the consultant and the equipment supplier, as well as the procured equipment, shall be exempted from all taxes imposed by the domestic law of Suriname. However, since difficulties may be anticipated during the course of customs clearance and tax exemption procedure, it is necessary for the consultant to pay sufficient attention to those issues by alerting the related agencies and confirming the necessary procedures.

#### **2-2-4-3 Scope of Works**

The Project shall be implemented under the cooperation of the governments of Suriname and Japan. The works to be borne by both parties are as follows.

##### **(1) Works to be carried out by the government of Japan**

Japanese side shall:

- 1) execute the procurement of the equipment on the Project,
- 2) transport the equipment to the respective health facilities, which includes marine and inland transportation in Suriname,

- 3) install and set up the equipment, and
- 4) perform the test run, give instructions for operation and maintenance and do final inspections for all the equipment.

**(2) Works to be carried out by the Government of Suriname**

Surinamese side shall:

- 1) present data, documents, and other information necessary for the installation and set up of the equipment
- 2) remove old equipment and prepare the rooms to which the new equipment is to be installed,
- 3) prepare facility infrastructure, such as electricity, water supply, and sewage lines, in the sites where the new equipment will be installed,
- 4) provide places to unload the equipment,
- 5) temporary storage spaces for the equipment until the installation,
- 6) secure delivery routes for the equipment,
- 7) conduct training of medical staff, and
- 8) complete the renovation work for the clinics.

**2-2-4-4 Consultant Supervision**

Based on the Japanese grand aid scheme, the Japanese consultant shall conclude the consultancy agreement with the MOH. In compliance with this agreement, the consultant shall provide services of planning and holding a tender and of overseeing the implementation of the Project. The consultant shall check documents prepared by tenderers in such points as whether the procurement is executed as scheduled, or whether the procured equipment is meeting the specifications stipulated in the tender documents, etc. The purpose of the work is to ensure proper execution by the equipment supplier. The consultant offers advice and guidance for any adjustments in the implementation of the Project. This supervisory work includes the followings.

**(1) Assisting with tender procedures and contracting**

To select a Japanese trading company to take charge of the equipment procurement/installation work, the consultant will prepare tender documents, announce a tender publicly, accept applications from applicants, distribute tender documents to tenderers, accept tenders offered, evaluate the results, and give advice to the recipient to conclude a contract with the successful tenderer.

**(2) Instructions, advice and coordination for the supplier**

The consultant shall examine the work schedule and provide instructions and advice to the supplier.

**(3) Inspection and approval of the manufacturing documents and installation layout**

The consultant shall examine and approve manufacturing documents and installation layout, and other necessary documents submitted by the supplier.

**(4) Report of the progress of the Work**

The consultant monitors the condition of the sites and the implementation of the Project and reports the progress of the works to the authorities of both governments.

**(5) Inspection and testing upon completion**

The consultant shall attend the on site inspection and trial operation of the equipment in order to confirm that the equipment is consistent with the provisions of the contract. Final inspection reports shall be submitted to authorities concerned on the Surinamese side.

**(6) Training in maintenance and operation of the equipment**

Equipment to be procured in the Project requires basic maintenance and operation skills. It will be necessary to train the medical and maintenance staff in operation and troubleshooting of the equipment during the period of installation, adjustment, and test running. The consultant shall give necessary instructions for the training programs.

**2-2-4-5 Procurement Plan**

The following points shall be noted in procuring equipment in the Project.

**(1) Guidelines for origin of the equipment**

Since no medical equipment is produced in Suriname, it will be procured from other countries. As explained in the basic design policy, such main equipment items as X-ray apparatus and ultrasound diagnostic equipment will be procured from Japan or third countries. Based on the degree of difficulty in maintaining the equipment and the necessity of after-sales services, the equipment items to be procured and their origins, as well as incidental conditions that need to be taken into account, were set forth as follows:

Name of Equipment	Country of Origin	Place of Agent(s)
X-ray Diagnostic Equipment, Ultrasound Diagnostic Equipment, X-ray Film Processor	DAC countries	Suriname
Electro-surgical Unit, Endoscope, Blood Cell Counter, Chemistry Analyzer, Anesthesia Apparatus, Patient Monitor, Cardio Tocograph, Electrocardiograph, Pulse Oximeter, Operating Table, Delivery Table, Gynecology Examination Table, Treatment Unit, Infant Incubator, Infant Care Unit, Infant Warmer, Colposcope, Phototherapy Unit, Binocular Microscope, Spectrophotometer, Autoclave	DAC countries	Suriname, or Netherlands, Venezuela
Bilirubin Meter (Skin), Suction Unit, Doppler Fetus Detector, Water Distilling Equipment, Bilirubin Meter, Drying Oven, Autoclave, Centrifuge, Mixer	DAC countries	Suriname, or Netherlands, Venezuela, USA
Operating Instruments Set, Examination Light, Sphygmomanometer, Stethoscope, Resuscitator, Weighing Scale, Diagnostic Set, Leucocyte Counter, Refrigerator	DAC countries	

## (2) Transportation period

The equipment to be procured from Japan and the third countries need approximately four weeks for the marine transportation, additional two to four weeks for the customs clearance, and about ten days for the inland transportation, altogether thirty-five to forty days.

### 2-2-4-6 Implementation Schedule

After the signing of the E/N by both governments, the Project will be implemented in the following two stages; tender and tender-related works and procurement and installation of the equipment.

#### (1) Tender and tender-related works

After signing of the consultancy agreement between the MOH and the consultant, and after verification of the said agreement by the government of Japan, the preparation of tender and tender-related works will start. The tender and tender-related works include final confirmation of the technical specifications of the equipment and preparation of the instructions to tenderer(s). This set of documents needs to be approved by the Surinamese side. Then, the consultant shall announce the tender publicly, and call for applications for tendering, distribute the tender documents to applicants, hold the tender, evaluate the submitted documents from applicants, nominate the winner and help to conclude the supply contract between the MOH and the supplier. This stage takes about four months.

#### (2) Procurement and installation of the equipment

After the Japanese government verifies the supply contract between the MOH of Suriname and the equipment supplier, the supplier starts procuring the equipment in compliance with the contract documents. The works related to the equipment procurement, transportation and installation in the

health facilities takes about eight months.

The implementation of the Project is scheduled from the signing of the E/N to the completion of the works as shown in Figure 2-5.

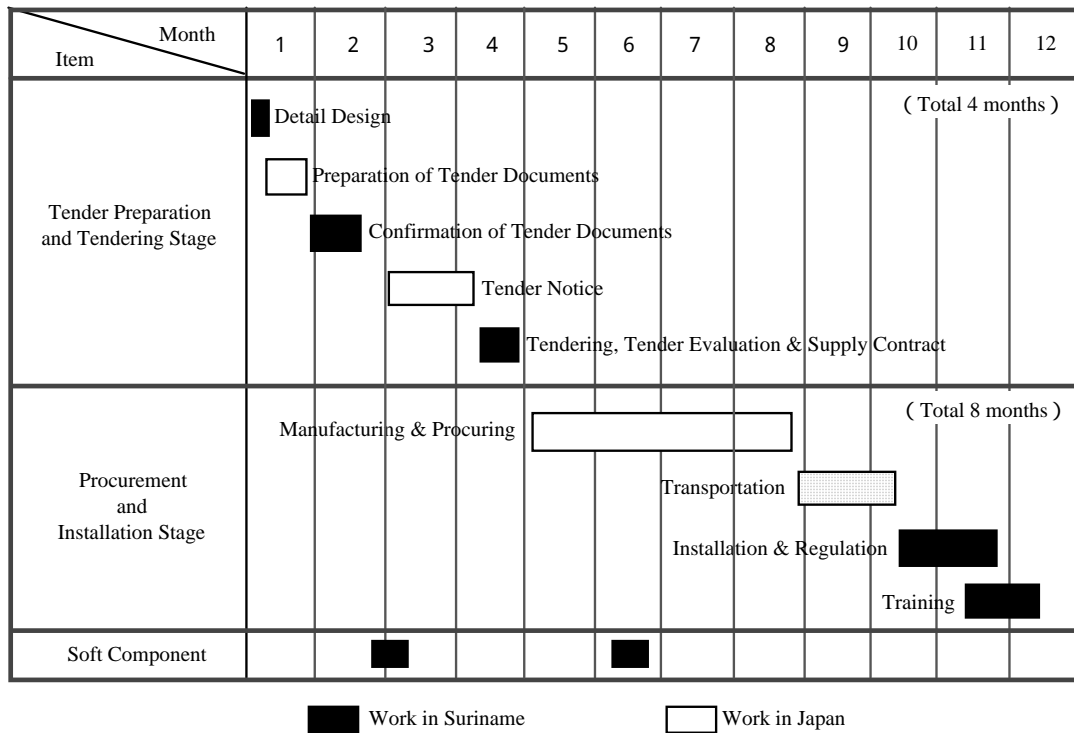


Figure 2-5 Implementation Schedule

## 2-3 Obligations of the Government of Suriname

### 2-3-1 Training Sessions and Renovation Work of the Clinics

The table below outlines the contents of the technical training sessions of the medical staff to be executed by the Surinamese side in connection with the implementation of this Project. Basically, these training sessions are to transfer certain medical techniques, which are being used in the daily practices at Paramaribo University Hospital and s'Lands Hospital, to the healthcare workers of target health facilities, who already possess basic knowledge of delivery, neonatal care, and laboratory tests. Therefore, the feasibility of such training sessions is deemed high. Before Project implementation, the Surinamese side was established the committee for planning and implementation of the training program. The committee members and the contents of training sessions are indicated below tables.

Member of the Training Committee

Name	Organization	Speciality
Mr. Manoji Hindori	MOH	Project Coordinator
Dr. Carlos Van Lierop	Paramaribo University Hospital	Specialist for Obs. & Gyne.
Dr. Prem Goerdin	Paramaribo University Hospital	Specialist for Obs. & Gyne.
Dr. O. Ristie	'sLands Hospital	Specialist for Obs. & Gyne.
Dr. S.R. Mohan	'sLands Hospital	Specialist for Obs. & Gyne.
Dr. Aikman Helen	MOH, RGD	Specialist for Obs. & Gyne.

**Table 2-5** Contents of Training Sessions to be Organized by the Surinamese Side

Category of Training	Stage 1: Academic Training	Stage 2: Practical Training
(1)-A Obstetrical ultrasonographic diagnosis in the first trimester (early stage in pregnancy)	- General guidance for obstetrics care; - Diagnosis of normal pregnancy or not (multiple pregnancy, ectopic pregnancy, etc.);	- Confirm the gestational sac, GS; - Confirm the yolk sac; - Measuring the crown-rump length, CRL; - Confirm the amniotic membrane; - Heart rate (5 weeks; 90-100bpm, 9 weeks; 170-180bpm, 16 weeks; 150bpm); - Diagnosis the ectopic pregnancy; - Diagnosis the fetal abnormalities
(1)-B Obstetrical ultrasonographic diagnosis during mid-and late pregnancy	- General guidance for obstetrics care; Abdominal scanning, Fetal well-being, fetal abnormalities, Volume of amniotic fluid, Umbilical cord, Diagnosis of placenta, etc.	- Screening the fetal well-being; - Diagnosis the fetal abnormalities; - Confirm the amniotic fluid; - Confirm the umbilical cord (blood flow)
(2) Ultrasonography in gynecology	- General guidance for gynecological care; Hysteromyoma, Pyo-ovarium, etc.	- Diagnosis of uterus, ovarium, urinary bladder, rectal, etc.
(3) Ultrasonography in obstetrics and gynecology	- General guidance for diagnosis by ultrasound color Doppler	- Blood flow of umbilical cord
(4) Laparoscopy	- General guidance for diagnosis and treatment by laparoscope	- Suction of ovarian cyst; - Endometriosis; - Adhesiotomy / Synechiotomy - Hysteromyoma
(5) Electrocardiogram	- General guidance for electrocardiogram	- Diagnosis waveform of ECG
(6) Laboratory skills	- General guidance for biochemistry	- Measuring and reading of testing parameters

Source) Planning Department, Ministry of Health, Suriname

Table 2-6 summarizes the necessary renovation works for the clinics, which was presented to the Surinamese government officials by the Study Team. Works indicated by “A” are essential for the implementation of the Project and, if executed, will provide necessary infrastructure for the equipment to be installed under the Project.



**Table 2-6** Contents of the Renovation Works to be Presented by the B/D Study Team (in US\$)

Category		Wonoredjo	Lelydrop	Derde Rijkweg	Tijgerkreek	Koewarasan
Floor Area		336.0m <sup>2</sup>	428.8m <sup>2</sup>	132.3m <sup>2</sup>	366.0m <sup>2</sup>	132.3m <sup>2</sup>
Construction		1981	1972	1970	1970	1968
Contents of Renovation Works						
Electricity	Contents	Installation of distribution board and additional 3 electricity circuits				
	Priority	A	A	A	A	A
	Costs	341.40	341.40	341.40	341.40	341.40
Roof	Contents	Renovation		Renovation	Renovation	
	Priority	A		A	A	
	Costs	6,429.00		5,446.68	6,285.54	
Floor	Contents	Print tiling	Print tiling	Print tiling		
	Priority	B	B	B		
	Costs	14,757.60	21,840.00	11,421.54		
Door & Windows	Contents		Renovation	Renovation		Renovation
	Priority		A	A		A
	Costs		3,529.50	1,000.00		1,239.30
Site Drainage	Contents	Site drainage		Site drainage	Site drainage	
	Priority	A		A	A	
	Costs	1,188.00		2,567.70	1,663.20	
Subtotal (only priority A)		7,958.40	3,870.90	9,955.78	8,290.14	1,580.70
Total (Priority A)						31,655.92

**Notes:**

Priority A: Necessary renovation works for the Project execution.

Priority B: Renovation works to be done by the Surinamese side if possible.

\* Costs of renovation works examined and presented by the KDV Architects, Paramaribo, Suriname.

\* Cost estimation of electricity renovation works (installation of additional 3 electricity circuits, single-phase 220V)

(1) Cost of Materials

• PVC Cable (single-phase 220V 3x4mm<sup>2</sup>): US\$1.39 x 40m = US\$55.60

Total: US\$55.60 x 3 sets = US\$166.80

• Socket (Single Phase 220V): US\$11.00, Total: US\$11.0 x 3 = US\$33.00

• Cable Clamps (12mm): Total: US\$1.20/25 pcs./set x 6 sets = US\$7.20

• Distribution Board (220V, for 2 groups) Total: US\$52.20 x 2 pcs. = US\$104.40

(2) Cost of Installation

Total: US\$25.00 man/day x 3 days = US\$150.00

Total (1) + (2): Cost of Materials (US\$311.40) + Cost of Installation (US\$30.00/1 clinic)

Source) Survey on Basic Design Study

**2-3-2 Other Obligations for the Project**

Other obligations of the government of Suriname in relation to the implementation of the Project are as follows:

- (1) to provide the necessary information and data for the Project,
- (2) to provide support for the supplier, such as prompt customs clearance of the equipment under the Project at ports of disembarkation in Suriname,
- (3) to exempt Japanese nationals who are staying in Suriname for providing services in connection to the implementation of the Project, from customs duties, internal taxes and fiscal levies which may be imposed in Suriname,
- (4) to accord necessary security and protection to Japanese nationals entering or staying in

Suriname for the purpose of providing services and to their equipment brought in for the implementation of the Project,

- (5) to conduct the Banking Arrangement (B/A), and to pay commissions associated with the issuance of the Authorization to Pay (A/P).
- (6) to allocate the personnel/budgets required for the effective implementation of this Project (including operation and management costs of equipment procured using grant aid),
- (7) to ensure that the equipment procured under this Japanese Grant Aid Project is maintained and used properly and effectively,
- (8) to provide necessary permission, licenses, and other authorization for implementing the Project, if necessary,
- (9) to pay fees and charges associated with tax exemption procedures for the Project,
- (10) collection and control of data and information of the usage of the equipment to be procured under this Project, and
- (11) to bear all other expenses associated with the implementation of the Project.

#### **2-4 Project Operation Plan**

The Planning Bureau, the direct subordinate organ to the Vice Minister of the MOH, is responsible for the supervision and the implementation of the Project and assistance programs. Staffed by a director and an officer, the Planning Bureau serves as a liaison office for negotiating with international organizations and foreign countries and in charge of facilitating and supervising assistance programs by donor organizations and countries.

The operation and maintenance of the Project is to be carried out efficiently by each target hospital/clinic under the supervision of the MOH. However, daily operation and maintenance after the completion of the Project will be done by the two hospitals and RGD (five clinics) as present.

As described in the section 2-6, Soft Component Program, the target hospitals and clinics do not have an established chain of command to process information related to equipment operation and maintenance, such as the procurement of expendable supplies and repair work. Establishment of an operation/maintenance system is urgently needed to coordinate efforts with external organizations and to systematically control various documents, especially operation manuals, related to the equipment to be procured by the Project.

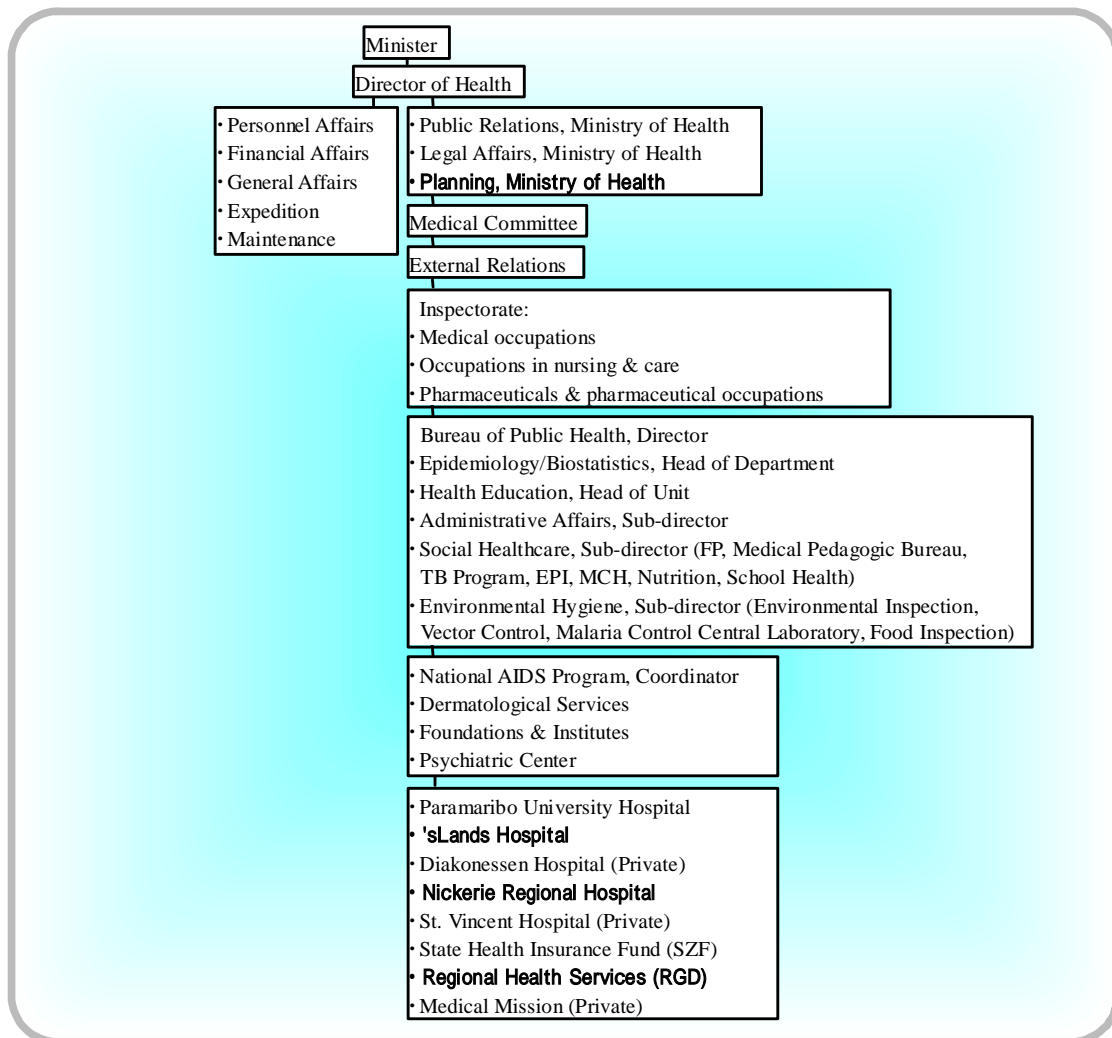


Figure 2-6 Organizational Structure of MOH and Affiliated Institutions

## 2-5 Cost Estimation of the Project

### 2-5-1 Cost Estimation of the Project

The cost estimation of the Project is calculated as following two tables. The estimated cost of the Japanese assistance (Table 2-7) is provisional and would be further examined by the Government of Japan for the approval of the Grant.

**Table 2-7** Estimated Cost of the Japanese Assistance (in thousand US\$)

Item		Estimated Costs		
Medical Equipment	'sLands Hospital	Obstetric & Gynecology	25.0	US\$1,043.2 (¥125M)
		Delivery and Nursery	91.8	
		Operation Room, ICU, Sterilization	333.9	
		X-ray / Ultrasound	525.8	
		Laboratory	66.7	
	Nickerie Regional Hospital	Emergency	33.4	US\$843.0 (¥101M)
		Delivery and Nursery	50.1	
		Operation Room, Sterilization	292.1	
		X-ray / Ultrasound	417.3	
		Laboratory, Pharmacy	50.1	
	5 Clinics	Outpatient	83.4	US\$517.3 (¥62M)
		Delivery and Nursery	166.9	
		Ultrasound	150.2	
		Laboratory	116.8	
Consultants' Supervision			US\$333.8 (¥40M)	

Currency rate: US\$1.00=119.80 Japanese yen.

**Table 2-8** Estimated Costs to be covered by the Surinamese side for the Project (in US\$)

Item	Estimated Costs
Cost of renovation works for 5 Clinics	US\$32,000.00 (¥3.8M)*

**Notes:**

\*: Figures were delivered from Table 2-6.

Currency rate: US\$1.00=119.80 Japanese yen.

**Condition of the Estimation**

Date of estimation	: June 2003
Currency exchange rate	: 1US dollar = 119.80 Japanese yen
Duration of working design and supervision	: Approx. 12 months
Purchase order	: Lump Sum
Other	: This Japanese Assistance will be implemented according to the Japanese grant aid system.

**2-5-2 Operation and Maintenance Costs****(1) Operational Status of the Target Facilities**

Table 2-9 shows the breakdown of expenditures of the two target hospitals. Although both are public institutions, they generate income mostly by collecting medical fees from the patients under the accounting systems designed and administered by the management of the respective hospitals at their discretion. In both hospitals, personnel expenses, which only cover the wages of the staff directly employed by the hospitals, account for more than half of their respective total expenditures. Salaries and wages of MOH personnel are covered by the MOH. At Nickerie Regional Hospital

for instance, 74 of the total of 220 staff members are direct employees of MOH, whose remunerations are not included in the hospitals' accounts. Expenses for medical supplies, expendable goods necessary for the operation of medical equipment, and contractors' fees for maintenance services are all covered by medical charges. Since this Project will be replacing old equipment, it will not likely incur additional expenses, or if any, they will be covered by the increased revenues generated by the new equipment. Therefore, the current financial systems will be sufficient to cover the operation and maintenance costs of the new equipment to be procured under this Project, as long as the supply sources of spare parts and other expendables are carefully chosen.

**Table 2-9** Actual Expenditures of the Hospitals in FY 2002 (in Sf.)

Items	'sLands Hospital	Nickerie Regional Hospital
Personnel emoluments	8,105,395,846.58	2,864,279,234.68
X-ray	1,152,677.86	1,850,000.00
Laboratory	272,324,367.53	113,979,745.13
Pharmaceutical	3,330,131,650.69	964,046,556.55
Medical Disposal	305,441,899.69	82,771,647.00
Maintenance (by outside contractors)	19,023,118.33	22,687,500.00
Others	3,360,710,470.40	747,296,114.64
Total	15,394,180,031.00	4,796,910,798.00

Currency rate: 1Japanese yen =22.90 Sf.

Source) 'sLands Hospital and Nickerie Regional hospital

The northern coastal area under the jurisdiction of RGD consists of eight districts, but is divided into nine medical regions according to the population density and accessibility to health facilities. For instance, the densely populated Wanica district is divided into four medical regions, whereas the sparsely populated Coronie and Nickerie districts jointly form one medical region. Clinics are classified into Health Center, Basic Clinic, and Help Post according to the allocation of healthcare workers. The target clinics are comprised of three Health Centers and two Basic Clinics.

Each clinic is managed by RGD and staffed by MOH personnel who are public servants. Table 2-10 shows the breakdown of operational expenses of each target clinic. The operation/maintenance expenses of the equipment to be newly procured by the Project must be covered by medical fees generated by using such equipment. Although the clinics' existing equipment is maintained by RGD engineers, the new equipment should preferably be serviced by GMTD or other outside local representatives of the equipment manufacturers under maintenance service contracts.

**Table 2-10** Actual Expenditures of the 5 Clinics in FY 2002 (in Sf.)

Items	Wonoredjo	Lelydrop	Derde Rijkweg	Tijgerkreek	Koewarasan
Personnel emoluments	218,959,000.56	258,335,929.84	158,139,605.91	140,757,809.03	127,804,852.30
Electricity	1,481,070.00	1,089,300.00	1,268,335.00	711,120.00	1,520,885.00
Telephone	3,161,299.68	2,748,853.80	1,485,370.41	1,353,172.99	3,553,594.27
Water	-	2,635,100.00	206,500.00	-	-
Stationary	222,299.70	273,600.00	332,650.00	104,510.00	257,850.00
Maintenance of facilities	702,330.00	234,815.02	438,725.00	480,065.00	190,650.00
Others*	11,455,531.10	11,235,407.90	1,706,933.00	5,787,164.11	1,467,655.00
Total	235,981,531.04	276,553,006.56	163,578,119.82	149,193,841.13	134,795,486.57

**Note:**

Includes the costs of medical disposal and equipment maintenance.

Source) RGD, Ministry of Health, Suriname

**(2) Financial Feasibility on the Surinamese Side**

As mentioned in the Minutes of Discussion (M/D) signed on March 2003, the MOH will secure the appropriate funds for the renovation works of the clinics that are necessary for the implementation of the Project.

The operational expenses of the newly procured equipment will be borne by the respective hospitals or by RGD for the clinics. The operational expenses of the existing equipment, which consist of the expenses for purchasing spare parts and expendables and the payment for maintenance services provided by outside local representatives, are sufficiently being covered by medical fees collected from patients. Thus, the operation of the new equipment is deemed feasible, as the use of the equipment will generate additional income.

However, since some of the equipment items to be procured by this Project will be additional or supplemental to the existing equipment, whether or not they will be able to cover their own expenses needs to be examined. Table 2-11 shows the estimated annual operational costs of main equipment items, and Table 2-12 shows the ratio of the additional running cost in relation to the total running cost in FY2002. In Table 2-13, additional patients and revenues to be generated by introducing the ECG and ultrasound diagnostic equipment to the clinics are estimated. The amount of revenues from medical charges depends on the number of patients. Considering the facts that Surinamese government has launched a campaign to encourage prenatal examinations and that incidence of so-called "Common Diseases", such as diabetes and hypertension is on the rise, and based on the recent operation/accounting records of the target clinics, the estimated numbers of ECG and ultrasound diagnosis patients submitted by the Surinamese government seem to be within reasonable ranges.

Based on the above facts, the ratios of the increase in operational costs in relation to the FY2002 figures are estimated at 6.68% for 'sLands Hospital and 13.91% for Nickerie Regional Hospital. It was also confirmed that the clinics would be able to cover the running cost by appropriating the revenues from medical fees generated by using the new equipment. In view of the above, the Surinamese side is deemed financially capable of operating the equipment.

**Table 2-11** Estimated Annual Running Cost of Main Equipment (in Sf.)

Name of Facility • Equipment	Q'ty	Consumables	Spare Parts	Total
(1) 'sLands Hospital				
Fluoroscopic X-ray Diagnostic Equipment	1	Sf.9,090,600	Sf.10,996,800	Sf.20,087,400
(2) Nickerie Regional Hospital				
Fluoroscopic X-ray Diagnostic Equipment	1	Sf.9,090,600	Sf.10,996,800	Sf.20,087,400
(3) 5 Clinics				
Electrocardiograph	5	Sf.439,872	-	Sf.439,872
Ultrasound Diagnostic Equipment	5	Sf.2,749,200	Sf.29,324,800	Sf.32,074,000
Sub Total				Sf.32,513,872

**Table 2-12** Examination of Financial Feasibility at each Health Facility (in Sf.)

Name of Health Facility	2002 Record* (A)	Estimated Costs (B)	(B) / (A)
(1) 'sLands Hospital			
Running Costs	Sf.300,527,469	Sf.20,087,400	6.68%
(2) Nickerie Regional Hospital			
Running Costs	Sf.144,344,019	Sf.20,087,400	13.91%
(3) 5 Clinics			
Running Cost	Sf.1,289,833		
Estimated revenues from medical fees**	Sf.39,600,000	-	
Sub Total	Sf.40,889,833	Sf.32,513,872	79.51%

**Notes:**

\*: Figures of 2002 were derived from Tables 2-9 and 2-10.

\*\* : Figures of estimated costs was from Table 2-13.

**Table 2-13** Estimated Revenues from Medical Fees (in Sf.)

Medical Services	Wonoredjo	Lelydrop	Derde Rijweg	Tijgerkreek	Koewarasan
Ultrasound	6,000,000.00	6,000,000.00	10,500,000.00	4,500,000.00	3,000,000.00
Electrocardiograph	1,920,000.00	1,920,000.00	1,920,000.00	1,920,000.00	1,920,000.00
Total Revenues	7,920,000.00	7,920,000.00	12,420,000.00	6,420,000.00	4,920,000.00
Total 5 Clinics: 39,600,000.00 ( J.Y. 1,729,000.-)					
Estimated number of patients per year					
Ultrasound	400	400	700	300	200
Electrocardiograph	240	240	240	240	240

**Note:**

Ultrasound charge: Sf.15,000.00/test, Electrocardiograph charge: Sf.8,000.00/test

**Estimation of the Number of Patients Using the Ultrasound and ECG at RGD:**

The number of patients to be using the ultrasound diagnostic equipment is estimated based on the number of prenatal examinations in 2002. At Wonoredjo Clinic, for instance, the total number of patients was 262, of which the vast majority were first-time visitors and only a few re-visit or third checkup (other clinics have similar records). The estimated numbers are based on two prenatal examinations per person, the target value set by RGD (the figures actually used were about 1.5 times the records of 2002).

RGD estimated the number of ECG examinations based on the assumption that about 10% of outpatients would be needing ECG. Clinic doctors stated that about 10% of 30 to 40 outpatients visiting the clinic daily had heart conditions resulting from unhealthy lifestyles, and ECG was necessary for observing the conditions of such patients, as well as for preventive purposes. Such statements confirm that RGD's projection is reasonable or perhaps underestimating. The number of patients at Wonoredjo Clinic, for instance, is estimated at 240 per year. This translates into less than one patient per day assuming that the clinic is open 20 days per month. As apparent in records of 2002, the assuming number of outpatients would far exceed the RGD's statements.

Source) Regional Health Services, Ministry of Health, Suriname

## 2-6 Soft Component Program

### (1) Objectives

The target sites of the Projects do not have an established chain of command for processing information concerning the operation and maintenance of equipment. At the two target hospitals, some clinical departments directly contact outside vendors to provide expendable supplies and repair services, while others report to the administrative division to take necessary actions. Lack of organization-wide rules and procedures should be rectified urgently by establishing a central system to control the documentation related to the equipment to be procured by this Project, including control ledgers and various manuals, as well as the coordination with external organizations. Under these circumstances, the Soft Component Program will be implemented in the two hospitals and RGD to help them establish the operation/maintenance system of the medical equipment by efficiently deploying limited human resources so that the equipment will be smoothly put into operation after handover.

### (2) Outcomes

The equipment to be procured under this Project will be operated in a sustainable manner.

### (3) Activities

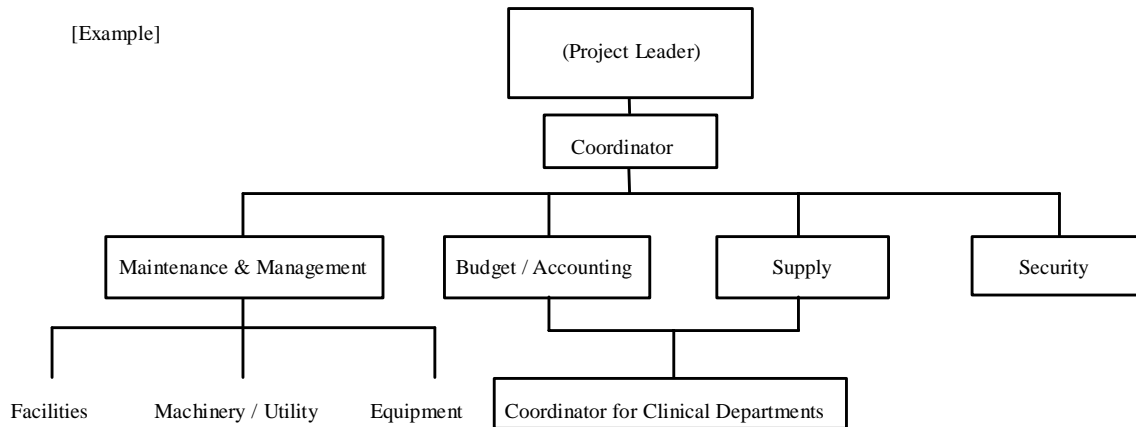
Activity 1: Organizing the Project Operation Unit (POU).

#### • Activity Plan 1-1:

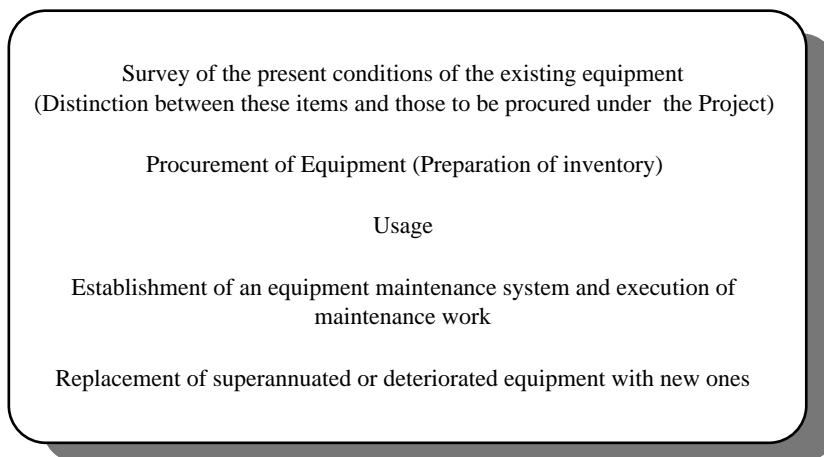
POU organizing sessions will be held with the persons in charge of the RGD and the two hospitals.

Activities	Output	Leader	Participants
1-1-1 Consultations for the organization of the POU	Organization Structures	• RGD • Directors of 2 hospitals	• RGD • Directors of 2 hospitals • Representatives of the departments concerned • Consultant





Activity 2: Establishment of the Equipment Management System (\*EMS: following flow)



• **Activity Plan 2-1:**

Survey of present situations of the existing equipment (Summarizing of previous inventory data)

Activities	Output	Leader	Participants
2-1-1 Summarizing of previous equipment data as prescribed by hospitals and / or the MOH	List of inventories of existing equipment	• RGD (Maintenance) • Hospitals (Maintenance)	• RGD, maintenance • Hospitals, maintenance • Consultant

• **Activity Plan 2-2:**

After bidding, short courses on the items 2-2-, 2-2-3 and 2-2-4 below are to be given. These short courses are to be participated in by prime contractor and representatives of mainstay manufacturers of the medical equipment.

Activities	Output	Leader	Participants
2-2-1 Selection of equipment	List of the selected equipment	• RGD, maintenance • Hospitals, maintenance	• Maintenance staff • Consultant
2-2-2 Consultations for the preparation of basic management manuals (A4sheet each)	Basic management manuals by type of equipment	• RGD, maintenance • Hospitals, maintenance	• Maintenance staff • Consultant • Supplier, distributors
2-2-3 Consultations for the preparation of basic cleaning manuals (A4 sheet each)	Basic cleaning manuals by type of equipment	• RGD, maintenance • Hospitals, maintenance	• Maintenance staff • Consultant • Supplier, distributors
2-2-4 Consultations for the preparation of basic troubleshooting manuals (2-3 A4 sheets each)	Basic troubleshooting manuals by type of equipment	• RGD, maintenance • Hospitals, maintenance	• Maintenance staff • Consultant • Supplier, distributors

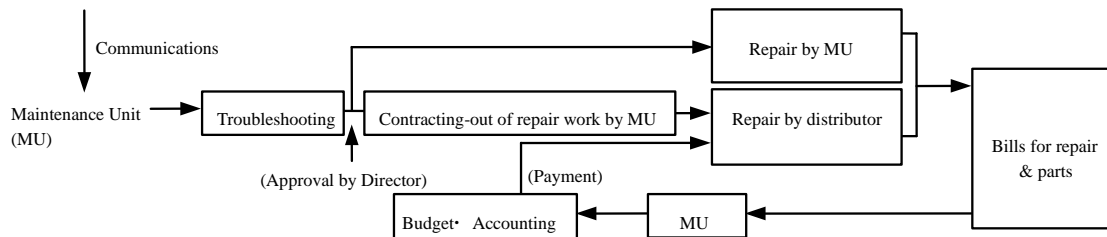
• **Activity Plan 2-3:**

Establishment of the flow of command up to repair

Activities	Output	Leader	Participants
2-3-1 Consultations concerning the flow of chains of command	Chain of command chart	• RGD, maintenance • Hospitals, maintenance	• Maintenance staff • Consultant

[Example]

Department in charge

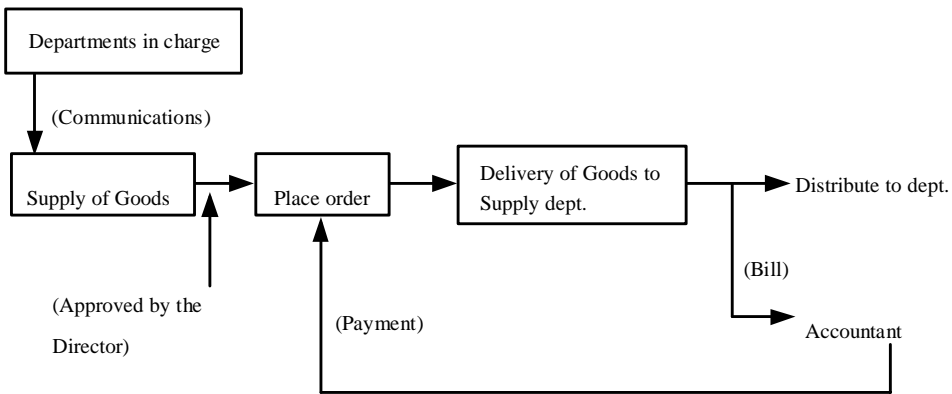


• **Activity Plan 2-4:**

Establishment of the flow of the procedures for purchase of repair parts, consumables and reagents

Activities	Output	Leader	Participants
2-4-1 Consultations for the establishment of the flow of purchase procedures	Flow chart of purchase procedures	• RGD, supply dept. • Hospitals, supply dept.	• Staff of budget• accounting and supply dept. • Consultant

[Example]

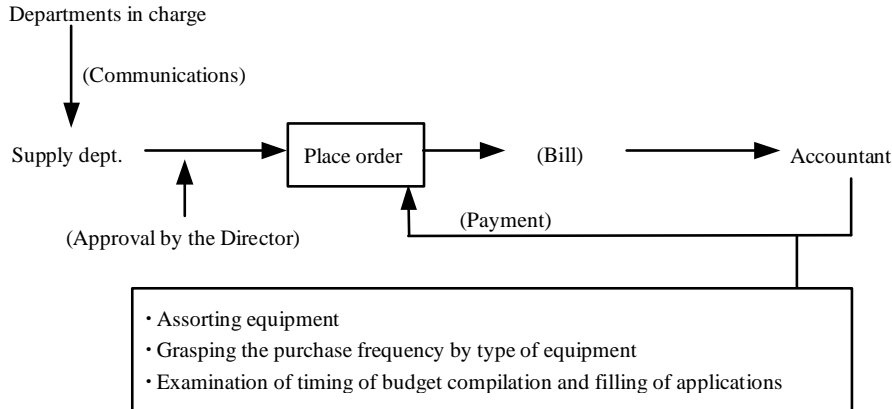


• **Activity Plan 2-5:**

Establishment of the flow of budget compilation for purchase expenses

Activities	Output	Leader	Participants
2-5-1 Consultations concerning the flow of chains of command	Flow chart for the drawing up budget for purchase of goods	• RGD, accountant • Hospitals, accountant	• MOH, Planning dept. • Staff of Accounting dept. • Staff of Supply dept. • Consultant

[Example]



**(4) Schedule for the Implementation of each Activity Plan**

For the Soft Component Program the consultant will assign one engineer, who will be dispatched to the project sites in two separate stages as described in the table below. The work schedule of the engineer will follow the general work standard in Suriname; six hours a day, five days a week.

Work schedule of the Soft Component Program

Detailed Design Stage ← (Tendering) →	Procurement and Installation Stage ← →
<p><b>No. of Activity Plan: 1-1-1</b> Consultations for the organization of the POU.</p> <p><b>No. of Activity Plan: 2-1-1</b> Summarizing of previous equipment data as prescribed by hospitals and / or the MOH.</p> <p><b>No. of Activity Plan: 2-2-1</b> Selection of equipment for training sessions concerning the maintenance.</p> <p><b>No. of Activity Plan: 2-3-1</b> Consultations concerning the flow of chains of command up to repair.</p> <p><b>No. of Activity Plan: 2-4-1</b> Consultations for the establishment of the flow of purchase procedures.</p> <p><b>No. of Activity Plan: 2-5-1</b> Consultations concerning the flow of chains of command</p>	<p><b>No. of Activity Plan: 2-2-2</b> Preparation of basic management manuals.</p> <p><b>No. of Activity Plan: 2-2-2</b> Preparation of basic cleaning manuals.</p> <p><b>No. of Activity Plan: 2-2-2</b> Preparation of basic troubleshooting manuals.</p>