CHAPTER 3 IMPLEMENTATION PLAN

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3-1 Implementation Plan

3-1-1 Concept for Implementation

The Project will be implemented in accordance with the framework of the grant aid scheme of the Government of Japan after the conclusion of the Exchange of Notes (E/N) by both Governments of Japan and Yemen following a cabinet decision on the implementation of the Project by the Government of Japan. The Government of Yemen will then select a Japanese consultant firm as the Consultant for the Project to proceed with the detailed design work on the facilities and equipment. Following finalization of the detailed design documents, a Japanese construction company and a Japanese equipment supplier, selected on a tender basis respectively, will conduct the construction work and the equipment supply and installation. All of the consultancy, construction and equipment supply / installation contracts will become valid once they have been verified by the Government of Japan.

The work management system will be established by the Project Implementation Body, the Consultant, the Contractor and the Equipment Supplier under the control of the related organizations of the two governments involved. The basic issues and points to note for the implementation of the Project are described below.

(1) Project Implementation Body

The responsible agency for the Project on the Yemeni side is the Ministry of Public Health (MOPH) which is expected to sign the contract on behalf of the Government of Yemen. Meanwhile, the Health Office of the Aden Governorate will act as the implementation agency and will be responsible for the general coordination of the work during the project implementation period. As the planned construction site of the ATCC is located in the Mansoura area of Aden, the MOPH will be required to submit the general architectural drawings and structural drawings, etc. to the Al Mansoura District Office via the Aden Office of the Ministry of Construction to apply for the necessary building permit.

In view of the above division of work, the establishment of the Project Implementation Committee is desirable to act as the project implementation body on Yemeni side to manage all processes from the detailed design to the handing-over of the various facilities and equipment. The members of this Committee should preferably include representatives of the MOPH, the Health Office in Aden, Aden PHC Office, Ministry of Planning and Development (MOPD) and the member of JICA Technical Cooperation.

(2) Consultant

Following the conclusion of the E/N, the Government of Yemen will sign a consultancy agreement on the detailed design for the Project with a Japanese consultant firm and this agreement must be verified by the Government of Japan. For the smooth progress of the detailed design stage, the prompt sign of the consultant agreement after the conclusion of the E/N is crucial.

After verification of the agreement, the Consultant will prepare the detailed design documents based on the present basic design study report through consultations with the MOPH and will have the documents approved by the Government of Yemen.
At the tender and construction stages, the Consultant will conduct the tender and construction supervision based on the detailed design documents/drawings. The Consultant will also supervise the equipment-related work, ranging from the tender for equipment to supply and installation, test operation and final handing-over.

(3) Contractor

The Contractor will be selected through tender to open among Japanese construction companies which satisfy certain qualifications, he / they will construct the planned facilities within the contracted period in accordance with the detailed design documents prepared by the Consultant and will hand them over to Yemeni side.

The main components of the construction work will comprise building construction, water supply and sanitation, air-conditioning & ventilation, electrical installation and external work, all of which will be conducted by the Contractor using subcontractors, engineers and workers from Yemen and/or Japan.

(4) Equipment Supplier

The equipment supplier will be selected through tender to open among Japanese trading companies which satisfy certain qualifications and will procure and install the equipment which will meet the specifications set forth by the Consultant and approved by the project implementation body within the contracted period. At the installation stage, the Equipment Supplier will dispatch engineers specializing in the procured equipment to Yemen to supervise the work and to also explain how to operate the equipment to Yemeni side.

3-1-2 Implementation Conditions

(1) Local Construction Industry

The general conditions of the local construction industry in the Yemen are described below.

- Main construction companies will have their local office around the capital city of Sana'a or main city of Aden or Hodeidah. Most of large constructions will be done by foreign invested companies and many skilled craftsman belong to these foreign invested construction companies. On the contrary, native Construction companies are not specialized for each category, and there are many small companies who are in charge of building such size of houses and apartments, and the number of the integrated construction company is small. As a result the order itself also becomes small.

- Carpentry, plastering, reinforcing bar and masonry, etc. are established as special trades (vocations) but, other labourers such as finishers or water proofing labourers are not established as special trades. Also, labourers are often temporary workers and tend to lack specialist knowledge. After averaging the job efficiency, carpenters, plasters, craftsmen of reinforcing bar, and finishers, it requires 3 - 4 times of labor in the case of Japan.

- Owing to the depreciation of local currency before 1996, the price of construction material and labor cost have escalated. Under the influence of this matter contracts and trade with US dollar basis are generalized.

- A value-added tax (VAT) has not yet introduced as of now and near future.

(2) Important Points for Project Implementation

＜On the Construction Work＞

- The rainy season in Aden is from November to March, however, because the difference of rainfall between the rainy season and the dry season is small, there are few risks in earth work and foundation work regarding these seasons.

- Generation of electric power in Aden is by thermal power, therefore the condition of power supply is relatively stable. However, short time of power failure or planning power cut is often caused of lack of total capacity of generation. Generators are required to keep the continuous power for the construction work.

- The planned facility is two-story with reinforcement concrete structure and it is common method in Aden. Meanwhile, the quality and construction schedule are dominated by skills of local labors, therefore it is necessary to dispatch the skilled labor such as finishers or water proofing labourers and the quality and the construction schedule must be carefully controlled to avoid any unnecessary repetition or waiting.

- In Aden the sand containing salt is commonly used even the collection points are located inland. Therefore, strict quality control for the concrete will be required during concrete works on the construction site.

- As the project site is within the compound of existing facilities of PHC and adjacent to the Mansoura Polyclinic at the north side of the site, protection and safety measures to ensure the users of the existing facilities will be required for the planning of temporary structures.

＜On the Equipment-Related Work＞

- The regular checks and maintenance of laboratory equipment are conducted by the users while equipment which has broken down is sent to the maintenance office in Jumhuriyah Hospital for checking and repair. This means that guidance on checking methods and trouble-shooting will also need to be provided for the staff of maintenance office in Jumhuriyah Hospital in addition to the guidance of operation and maintenance for the users.

- In Yemen there are many maintenance staff who understand only Arabic language, therefore at the time of handing over it is necessary to prepare manuals in Arabic as the need arises.

- For the special checking and of repairing of laboratory equipment, at the stage of equipment selection, it is necessary for manufacturers to be initiated the nomination of local agent. This can promote the technical interchange between maintenance staff and staff of local agent.

(3) On the Work Schedule

- A reasonable and adequate work schedule must be planned.

- The dispatch of staff and expert engineers from Japan will be kept to a minimum and their appropriate number and assignment periods should be determined in accordance with the work progress.

- Although the scope of local construction materials (industrial products) which can be used for the Project is limited, local materials should be used where possible. In addition, materials and finishings which are easy to maintain should be selected.

(4) Work Supervision

For the efficient construction work of the facilities meeting the specifications set forth in the detailed drawings / documents within the planned construction period, the Japanese Contractor must be capable of smoothly conducting the joint work with local construction companies while providing appropriate technical guidance and implementing strict schedule control. It is, therefore, desirable that the Contractor appoints work staff conversant with the local conditions to achieve high quality facilities based on a precise understanding of the nature of the planned facilities.

Given the contents and scale of the facilities planned under the Project, the following full-time work staff will be required.

< Building Work >

- Field Representative: 1 person
  General management, total coordination, others.
- Architectural Engineer: 1 person
  Guidance on construction works, schedules control, guidance on working drawing preparation, etc.
- Services Engineer: 1 person
  Guidance on mechanical/electrical equipment installation and test operation, technical guidance, schedule control, others.
- Administrator: 1 person
  Administrative work, labor control, import procedure, others.

< Equipment Work >

As required installation and test operation of equipment, technical guidance and instructions on operation manuals are to be done by the supervisor of general equipment because of no sophisticated equipment.
List of major maintenance items should be prepared and delivered to the Aden Health Office at handing over of the work.

3-1-3 Scope of Works

The following scope of works between the two governments for implementation of the Project appears reasonable.

(1) Works to be undertaken by the Government of Japan

1) Facilities

a) Administration rooms : Director room, Administration room, Storage, Staff room (Supervisor/Statistic & Lab. staff), others.

b) Rooms for examination : X-Ray room, Reference Lab. Sterilization room, others.

c) Rooms for training : Classroom, Seminar room, Library, others.

d) Trainee's rooms : Multi-purpose room, Kitchen/Dining, Trainee's room

e) Other rooms : Maintenance room, Machine room, WC, others.

2) Equipment

a) Administration equipment : Desktop computer, Printer, Overhead projector, Medical refrigerator, Maintenance tools, others.

b) Examination equipment : X-Ray unit, Automatic film developer, Centrifuge, Safety cabinet, Incubator, Biological Microscope, Autoclave, Instrument cabinet, others.

c) Training equipment : Object projector, Microscope with teaching head, Safety cabinet, others.

d) Other equipment : 4 wheel driving car

(2) Works to be undertaken by the Government of Yemen

1) To remove trees within a planned construction site.
2) To supply electric power, water, and drainage facilities, etc. to the construction site.
3) Procurement of common office furniture, fixtures and fittings.
4) To supply consumable and spare parts required for facility and equipment maintenance.
5) Other appurtenant works not included in the scope of works of Japanese side.

3-1-4 Consultant Supervision

In accordance with the policy on Grant Aid laid down by the Government of Japan, an appointed Consultant will organize a project implementation team to carry out detailed design and supervising services that are in line with the basic design policies. This will ensure appropriate coordination among concerned parties and the smooth construction of the Project facilities.

At the construction stage, the Consultant will dispatch a resident supervisor with ample technical capabilities to issue instructions to contractors and to communicate with them. Also, the Consultant will assign technical experts in each construction stage on a

short-term basis in accordance with the progress of the work, in order to carry out inspection, attendance and guidance on execution.

(1) Basic Policies of Supervision

Punctual completion of the facilities based on the construction schedule will be aimed at through close communication with and reporting to the related organizations and those in charge in Japan and Yemen.

- Prompt and appropriate guidance and advice will be provided for those involved in the work to ensure that the constructed facilities meet the specifications set forth by the design documents.
- Priority will be given to the use of local construction methods using local materials as much as possible.
- Sufficient instruction of operation and maintenance for mechanical and electrical equipment.
- Appropriate guidance and advice will be provided in regard to post-handing-over maintenance and economical operation to facilitate the smooth operation of the facilities.

(2) Contents of Work Supervision

- Assistance to sign the construction contract:
  Selection of the Contractor through tender (determination of the contract such as consortium, preparation of the draft contract, confirmation of the contents of the specifications and witnessing of the construction contract, etc.).

- Inspection and approval of shop drawings, etc.:
  Inspection and approval of the shop drawings, samples and materials, etc. submitted by the Contractor.

- Work guidance:
  Examination of the schedule plan and work outline, etc., provision of guidance for the Contractor and reporting of the work progress to the Owner.

- Assistance in the payment authorization procedure:
  Assistance in the payment authorization procedure through examination of the contents of invoices and the work progress in regard to the construction cost to be paid during the construction work and upon completion of the said work.

- Inspection and approval:
  According to necessity, to conduct inspections on each work in terms of quality and workmanship and provide guidance to the contractor during the construction period.

The Consultant shall confirm the completion of the work in accordance with the conditions of the contract, attend the handing over of the completed work, and obtain acceptance from the owner. Also, it shall report to the Government of Japan any important matters related to the progress of the construction work, payment procedures and handing over of the completed work.

The construction supervision system and related agencies described above are shown in the following diagram.(Figure 3-1)

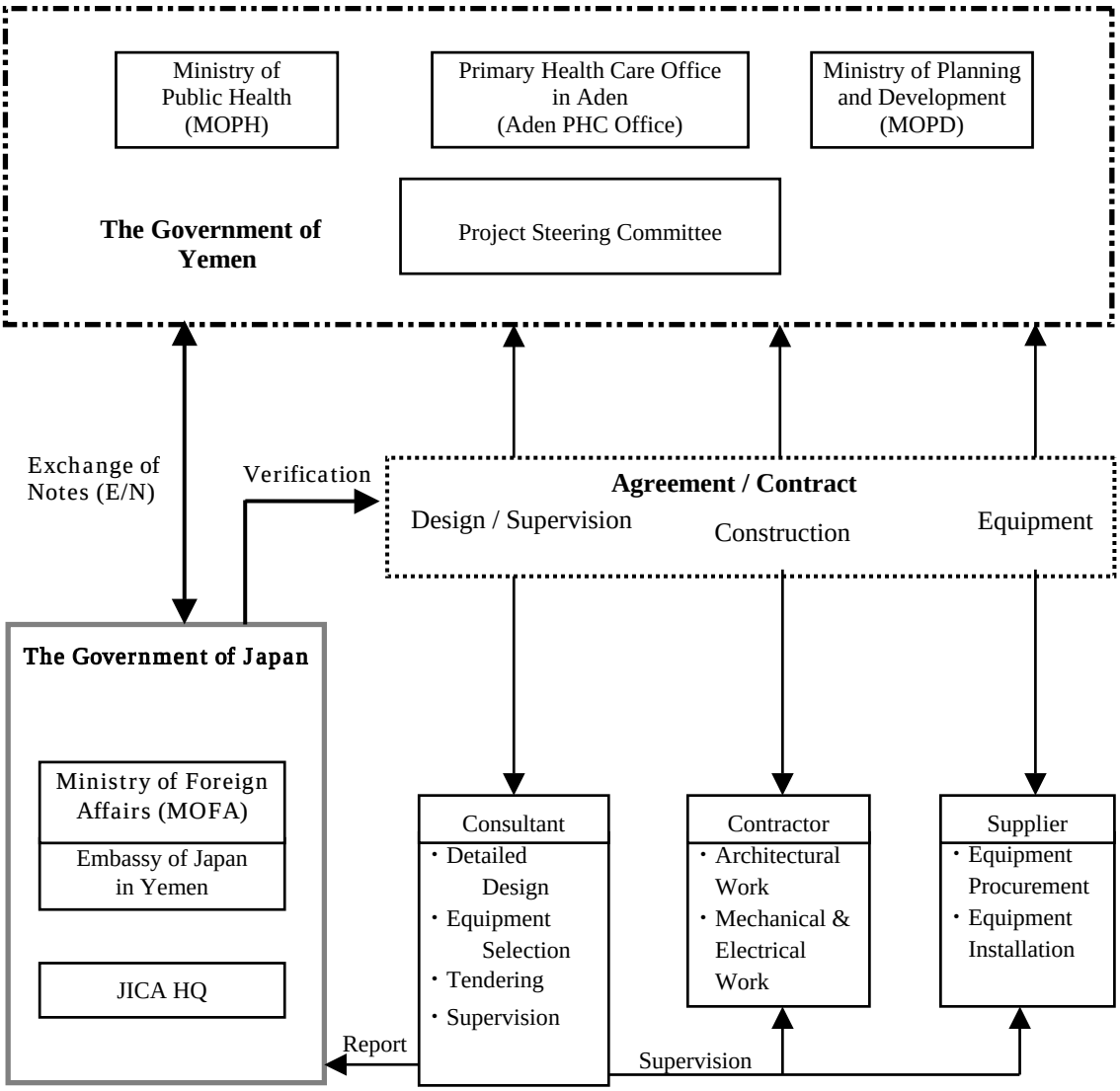


Figure 3-1 Construction Supervision Plan

3-1-5 Procurement Plan

The following items should be taken to consideration when procuring construction materials and equipment to be used in construction of the Project facilities.

(1) Procurement Policy

Most of the construction materials can be procured locally. Hence, the procurement policy is to procure materials in a reasonable manner by considering supply capabilities and quality vis-à-vis local manufacturers and supplies.

Materials to be procured from Japan should be kept to minimum, and should be restricted to items which cannot be procured locally due to cost, special specifications, poor performance or simply an insufficient local supply capacity.

(2) Procurement in Japan

In the case of equipment and materials of which local procurement is difficult, their procurement in Japan will be considered. In the case of mechanical equipment and electrical equipment which will require special ordering, timely orders in accordance with the work progress will be required as a long time is required to complete the process from initial order placement to design approval, manufacture and shipment from the manufacturer.

(3) Local Procurement

Since some construction materials of high quality imported from neighbor countries such as Saudi-Arabia, Egypt or European countries can be locally procured, the facilities can be maintained without any particular difficulties and, even if equipment and materials suffer damage, they can be easily repaired. Therefore, practical use of these materials shall be considered even if the procurement cost is comparatively high.

(4) Cost

Upon comparing materials that can be procured both locally and in Japan, lower procurement cost will be employed. Procurement from Japan includes packing, transportation and insurance expenses on top of the market prices, but import duties in Yemen are exempt.

(5) Procurement Schedule

Based on the above-mentioned factors, materials and equipment to be used in construction of the Project facilities will be procured in the manner described below.

1) Construction of building frames

Almost all the materials required in the construction of building frames, namely sand, gravel, cement, concrete, concrete blocks and bricks are locally available in

Yemen. Anti-sulfate cement made in Saudi-Arabia is also locally available. However, it can sometimes be difficult to obtain as a result of the boom in the construction sector and high cost. Reinforcing bars and structural steel made in Turkey or Qatar is locally available and they can be used normally without any problem.

2) Interior and exterior finishing work and external work

Including imported materials paints, tiles and stones are locally available in Yemen. Aluminum fittings, steel fittings, waterproofing materials, timber and boards of good qualities are difficult to procure locally. Therefore, they shall basically be procured from Japan or third countries.

3) Air-conditioning and sanitary work

Imported pipes for plumbing of high quality level of materials are available at the local market. Mechanical apparatus of high quality are difficult to procure locally. Therefore, they shall basically be procured from Japan or third countries. However, in view of maintenance for air-conditioning units and fans priority shall be given to local procurement as much as possible.

4) Electrical work

Imported electrical work materials such as illumination lamps and PVC pipes are available at the local market. These materials shall be locally procured in view of maintenance. Electric wires and cables of high quality level of materials are difficult to procure locally. Therefore, they shall basically be procured from Japan or third countries. Procurement country of power distribution boards, feeder connection boards, power control boards etc., for which order-made items are suitable, are to be decided, after first comparing costs including the third country procurement.

5) Equipment work

The medical equipment market in Yemen is not well established and that equipment manufactured by semi-industrialised countries is often marketed. Judging from the contents of the planned equipment under the Project and the equipment currently in use at existing TB Centres, the use of the local agents of Japanese medical equipment manufacturers for the procurement of consumables and spare parts and for maintenance/repair services appears possible. Accordingly, the procurement of equipment from a third country is not planned under the Project. In the case of the following OA equipment, this equipment will be procured from either Japan or a third country, taking the ease of procurement, cost of procurement and availability of maintenance services after procurement, etc. into consideration.

- Desktop computers, Printer
- Copying machines
- Floor cleaner, Floor polisher

- TV with console box, Video recorder / Player

6) Transportation plan

In principle, maritime transportation will be used for the transportation of equipment and materials from Japan to Aden port. This Maritime transportation usually takes one month and custom clearance at Aden port takes usually 2 weeks although the actual time depends on the bulk of containers.

For the swift customs clearance of the imported equipment and materials, etc., it will be necessary for the Contractor and the Equipment Supplier to submit the respective master lists of items for import prior to the commencement of the construction work to the Ministry of Planning and Development, the Ministry of Finance, the Tax Affairs Bureau and the Customs Office to obtain the necessary permit for import without tax. After shipment, the lading documents required for customs clearance should be submitted to the MOPH. As a permit for the import of equipment, etc. without tax must be obtained through the above-described route, the actual customs clearance can be a lengthy process. Prior arrangement will, therefore, be essential.

Estimating 10 days for ex-factory to loading in Japan, there should need at least 2 months time by maritime and inland transportation to the site.

According to procurement policy mentioned above, the result of study of major construction materials and procurement plan is shown in table 3-1.

Table 3-1 Study of Major Construction Materials and Procurement Plan

(1) Building materials

Works	Materials	Place of procurement			Remarks
		Local	Japan	Others	
Concrete work	Portland Cement	○			Available at local market.
	Anti-Sulfate Cement	○			Ditto
	Sand/Crushed Stone	○			Ditto
	Admixture		○		High quality should be imported.
	Reinforcement bars	○			Available at local market.
	Wooden forms	○			Veneer is available at local market.
					High quality should be imported.
Steel work	Structural Steel		○	○	Not available at local market.
	Sheet Metal		○	○	Ditto
Masonry work	Concrete block	○			200mm×200mm×400mm
		○			200(150)mm×200mm×300mm
Water-proof Work	Asphalt W/Proofing		○	○	High quality should be imported.
	Ceiling		○	○	Ditto
Tile work	Ceramic tile	○			Imported material is available at local market.
	Semi-Porcelain tile	○			
Wooden work	Wood			○	Imported finishing wood is available.
	Plywood	○		○	Plywood is available at local market.
Roof work	Color metal sheet		○		Not available at local market.
	Special metal sheet		○		Ditto
	Galvarium sheet	○			Available at local market.
Metal work	Light steel ceiling frame		○	○	Delivery time is unstable.
	Aluminum Louvers		○	○	Ditto
Metal Sash Work	Alum window frame			○	High quality should be imported.
	Steel door			○	Ditto
Wooden Sash Work	Wooden door			○	High quality should be imported.
	Wooden door frame			○	Ditto.
Ironmongery	Door handle, lock		○		High quality should be imported.
	Door closer		○		Ditto.
Glass work	Plane glass	○			Local material is widely used.
	Pane glass			○	Ditto
Paint work	Interior paint	○			Imported material is available.
	Exterior paint	○			Not available at local market.
Interior work	Rockwool Acc. Board	○		○	Imported material is available. (600mm×600mm)
	Form Polystyrene		○	○	Not use commonly locally.
	CSA Board		○	○	Not available at local market.
Furniture work	Kitchen sink	○			Imported material is available.
	Table/Chairs(wooden)	○	○	○	High quality should be imported.
	Table/Chairs(steel)		○	○	Ditto.
External work	Pavement block	○			Local material is available.

(2) Mechanical work

Works	Materials/Equipment	Place of procurement			Remarks
		Local	Japan	Others	
A/C & Fan work	Separate type A/C	○		○	Imported material is available depend on numbers and types.
	Exhaust Fan	○		○	
	Insulation Material	○		○	Ditto
Sanitary work	Pump & Tank	○		○	Imported material is available depend on numbers and types.
	Sanitary Ware	○		○	
	Pipe (Steel)	○		○	Ditto
	Pipe (PVC)	○			Imported material is available.

(3) Electric equipment work

Works	Materials/Equipment	Place of procurement			Remarks
		Local	Japan	Others	
Lighting & Cabling work	Lighting Fixtures	○	○	○	Imported material is available depend on numbers and types.
	Wire/Cables	○	○	○	
	Panel		○	○	High quality should be imported.
Equipment work	Telephone set	○	○		Small quantities are available.
	Fire alarm		○	○	High quality should be imported.

(4) Equipment work

Equipment	Place of procurement			Remarks
	Local	Japan	Others	
Overhead Projector		○		It is not possible to procure locally. Equipment shall be imported.
Medical Refrigerator		○		
Maintenance Tools		○		
Biological Microscope		○		
Microscope with Teaching Head		○		
Safety Cabinet		○		
Bunsen Burner		○		
Reagent Cabinet		○		
Incubator		○		
Centrifuge		○		
Inspissator (Coagulator)		○		
Water Distiller		○		
Analytical Balance		○		
Water Bath		○		
Glassware		○		
Autoclave		○		
Pipette Washer(ultra-sound)		○		
Glassware Dryer		○		
X-ray unit with accessory		○		
Automatic Film Developer(Roll)		○		
Manual Film Developer		○		
Dark Room Equipment		○		
Pass Box		○		
Film Illuminator		○		
Object Projector		○		
4WD Vehicle		○		
Desktop Computer	○			Equipment shall be procure locally.
Printer	○			
Floor Cleaner	○			
Copy Machine with sorter	○			
TV with Console Box	○			
Video Recorder/Player	○			

3-1-6 Implementation Schedule

When this project is implemented under the Japan's Grant Aid System, the following procedures are to be taken :

① Conclusion of an Exchange of Notes (E/N) between the two governments,
② Recommendation of a Japanese consulting company for design and supervision by the Government of Japan,
③ Signing of a design and supervision agreement between the Government of Yemen and the recommended consulting company,
④ Three preparatory steps including preparation of detail design documents, tendering, and signing of a contracts (facilities and equipment) with the successful tenderers,

After the E/N is concluded, MOPH will act as the implementation agency of Yemeni Government for Consultant Agreement, Construction Contract, Equipment Contract, Certificates for Payments, etc..

(1) Detailed design stage

Tender documents will be prepared based on the basic design, and these will consist of detailed design drawings, specifications, estimations and budget statements, etc. Close discussion are held with related agencies of the Government of Yemen in the initial, middle and final stages of the detailed design preparation stage. After the final results are approved by the agencies concerned, tendering procedures will be undertaken.

(2) Tendering stage

Tendering for the construction work and for the equipment work will be held separately. After the detailed design work is completed, pre-qualification (PQ: preliminary review for qualification of applying contractors) is announced and carried out in Japan for the construction work. In accordance with the review, the MOPH, as the implementing agency, will invite tenderers for the Project, and the tendering will be done in Japan under the supervision of the concerned parties. The tenderer which offer the lowest price will become the successful one if the contents of its tender are judged to be appropriate, and it will sign a construction contract with the MOPH.

(3) Construction and procurement stage

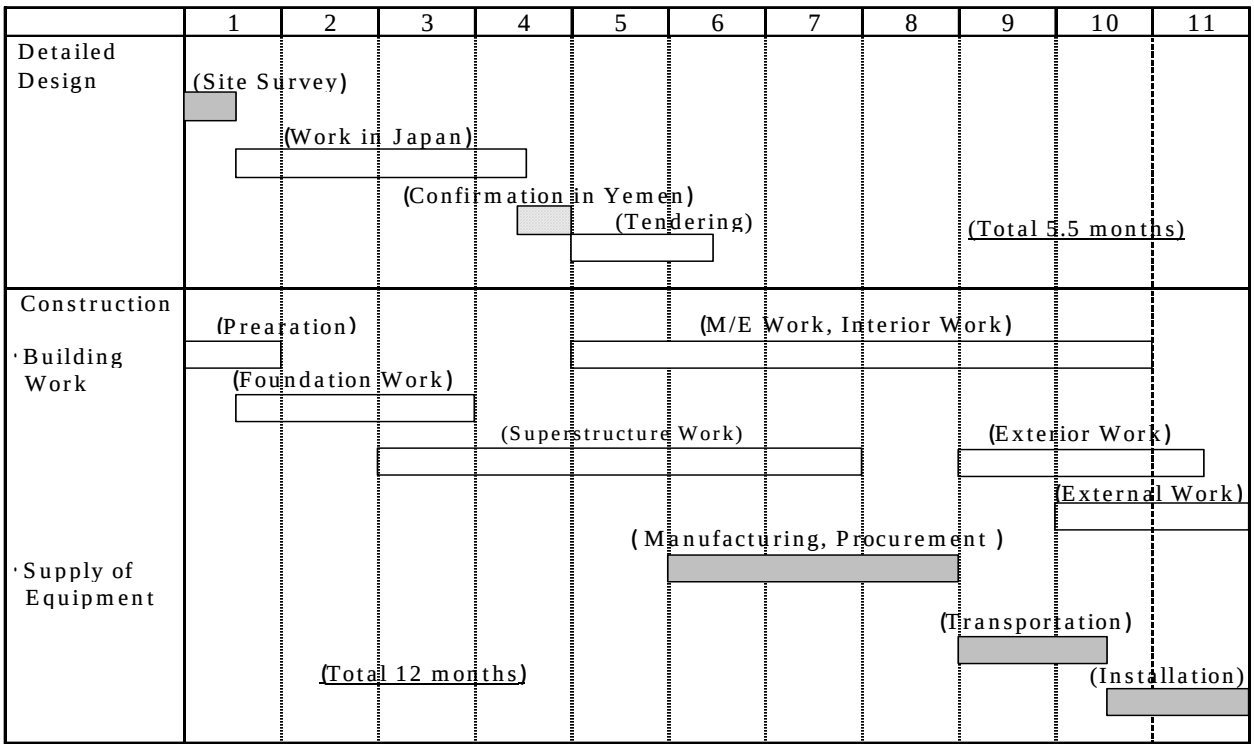
After the construction contract is signed, the construction work will be commenced following verification by the Government of Japan. Judging from the scale and contents of the Project facilities, the construction period is expected to be roughly 12 months. This, however, is condition on the following:

a) construction materials and equipment are smoothly procured,

b) smooth progress is seen in Yemen on administrative procedures and reviews, and preliminary work within the scope of responsibility of Yemeni side, in special tax exemption and customs clearance procedures,

c) the one-year budgetary system of the Government of Japan is applied correctly.

Table 3-2 Implementation schedule



3-1-7 Obligations of Recipient Country

(1) Items to be done by Yemeni side

In the case where the Project is implemented in accordance with the guidelines of Japan's Grant Aid System, the necessary measures to be taken by the Government of Yemen are as follows.

1) To remove trees within a planned construction site.
2) Provision of sites for temporary facilities and material storage for construction work within Aden PHC compound.
3) To supply electric power, water, drainage and telephone facilities, etc. to the construction site.
4) Procurement of common office furniture, fixtures and fittings.
5) Supply of consumable and spare parts required for facility and equipment maintenance.
6) Banking arrangement and payment of bank commission for Authorization to Pay.
7) Applications for physical planning and building permit and payment of various fees, if necessary.
8) Swift arrangement of landing, tax exemption facilities and customs clearance of the equipment and materials to be procured within the scope of the grant aid.
9) Exemption of Japanese companies and Japanese nationals involved in the Project from customs duty, domestic taxes and any other levies imposed in Yemen.
10) Provision of all conveniences for the Japanese nationals referred to in 9) above in relation to their entry to and stay in Yemen to perform their assignments under the Project.
11) Appropriate and effective use and maintenance of the facilities constructed and equipment procured under the Project.
12) Smooth move of existing equipment to the new building.
13) Payment of all expenses required for the implementation of the Project which are not covered by the grant aid.

(2) Cost estimates of Works to be done by Yemeni side

In addition to the items to be addressed by the Government of Yemen in relation to the construction work under the Project, the related items during the construction works refer to "APPENDICES 6. Cost Estimation Borne by the Recipient Country". While these items directly affect the commencement of the construction of the Project, timely arrangements are essential and effective for project implementation.

3-2 Operation and Maintenance Plan

3-2-1 Facility Operation and Maintenance Plan

(1) Buildings

For a maintenance and control plan of buildings, the following 3 points are main subjects:

① Daily cleaning
② Repair against wearing down, damages and aging
③ Guards, which aim at security and prevention of crimes

Daily cleaning is essential for preventive maintenance and it is assumed that they treat facilities and equipment more carefully. In addition, cleaning is important for equipment for medical examinations to keep good in condition. Also, it can detect damages and disorders in an early stage so that repairs can be done as early as possible. These actions will elongate the life of apparatus and equipment for medical examinations.

As for repair, mending and repairing the interior and the exterior materials which protect the structure are main subjects. In addition, (judging from the Japanese case), the necessity of repair and renovation, due to changes of activities and the increase of staff, will be executed every 10 years. The details of the periodical check and repair, which decide the life of buildings, are submitted at the time of handing over buildings by the contractor as "Maintenance Manual". And at this time, the method of checking and periodical cleaning will be described. The outline of them is as follows:

Table 3-3 Outline of Regular Building Inspections

Exterior	
- Repair or repainting of exterior finishes	every 5 years
- Inspection or repair of metal roof	inspection: every year
- Periodical cleaning of downspouts and drains, etc.	every month
- Inspection and repair of sealing of doors/windows	every year
- Periodical inspection and cleaning of drainage	every year
Interior	
- Changes in interior finishes	as required
- Repair and repainting of interior walls	as required
- Repairing of ceiling	as required
- Retightening or changing of fittings	every year

Note: Guards must check the entering and exiting of facility customers.

(2) Building Service Equipment

As for building service equipment such as mechanical and electrical equipment, daily "preventive maintenance " is neccessary before repairing disorders and changing parts. Mechanical equipment life can definitely be elongated by

adequate operation, daily check, supplying oil, adjustment, cleaning and repairing, as well as operating time. These daily checks can prevent disorder and accident and expansion of accidents.

With the periodical check, exchange of consumable and cleaning of filters are executed according to the maintenance manual.

In this plan, there are no mechanical equipment which have complicated systems, but it is important to organize maintenance and control systems when employing full-time maintenance and control staff, and it is also important when we make a contract with an outside company to commit a periodical check.

Operating and control manuals are submitted at the time of handing over, and the general definition of life for the main mechanical equipment is as follows:

Table 3-4 Lives of Major Building Service Equipment

Electrical equipment	
Generator	15 to 20 years
Panel boards	20 to 30 years
Fluorescent lamps	5,000 to 10,000 hours
Incandescent lamps	1,000 to 1,500 hours
Plumbing equipment	
Pumps, Pipes and valves	10 to 15 years
Tanks	15 to 20 years
Sanitary fixtures	20 years
Infiltration pit	10 to 20 years
Air-conditioning and ventilation	
Pipes	10 to 15 years
Fans	10 to 15 years
Air conditioners	10 years

(3) Medical Equipment

Maintenance and control for medical equipment is important for the activities of the planned facilities to be well functioned. Facing the Arabian sea the climate of Aden city is hot and humid, and in terms of maintenance and control of equipment for medical examinations, the condition is not so good.

Generally, maintenance and control of equipment contains two items. One is daily check done by the operator, and the other is both detection and repair done by experts through 1-2 periodical checks per year.

These planned equipment contain X-ray apparatus which require high and special repair knowledge. In order to improve the knowledge of the maintenance staff, it is necessary for maintenance staff, staff of MOPH and a local agent to work together for the periodical check and repairing.

Table 3-5 shows the outline of maintenance and control for each of the equipment.

Table 3-5 Outline of Required Equipment Maintenance

	Self check	Service agent (recommended)
X-ray apparatus	Every time after operation	Once / Year, Defect Repair
Safety cabinet	Every time before and after operation	Twice / Year, Defect Repair
Other equipment	Every time before and after operation	Twice / Year, Defect Repair

3-2-2 Estimation of Operation and Maintenance Cost

The following sections describe trial calculations of the annual operating expenses and maintenance cost of Project facilities following commencement of operation.

(1) Facilities Operation Expenses

The operating expenses of Project facilities and equipment have been calculated in the following manner according to ① electricity charge, ② water supply charge, ③ sewerage charge, ④ fuel for generator.

The maintenance expenses of building and mechanical equipment have been calculated in the following manner according to ① building maintenance , ② mechanical equipment maintenance charge, ③medical examination equipment maintenance charge.

The operating expenses and maintenance of Project facilities and equipment estimated as condition of following Table 3-6.

Table 3-6 Trial Calculation of Facilities Operating Expenses (YR / year)

	Annual cost (1,000 YR)
1) Operating expenses	1,450
① Electricity	1,200
② Water supply	101
③ Sewerage	76
④ Gas supply	33
⑤ Diesel Oil	40
2) Maintenance expenses	2,809
① Building	240
② Mechanical equipment	150
③ Medical equipment	2,419
Total	4,259

1) Building operation expenses

Maximum operation hours of one day of each room is assumed 6.0 hours. Supply by commercial electrical power is assumed 5 days a week and 240 days in a year. Supply by the generator is half day a week.

① Electric charge :
Power load×Demand of each Room×Consumption hours of each Room/year = Power Consumption / year
100,000 Kw/year × 12 YR / Kw 1,200,000 YR / year

② Water charge :
7 m^3 / day × 240 days / year = 1,680 m^3 / year
1,680 m^3 / year × 60 YR / m^3 100,800 YR / year

③ Sewerage charge :
Follow the above ②. 1,680 m^3 / year
1,680 m^3 / year × 45 YR / m^3 75,600 YR / year

④ Gas charge :
15 cylinder / year × 220 YR / cylinder 33,000 YR / year

⑤ Diesel charge :
20 litter / hour × 200 hours / year = 4,000 litter / year
4,000 litter / year × 10 YR / litter 40,000 YR / year

As a building operation expenses, Electric charge, Water charge, Sewerage charge, Gas charge and Diesel charge for generator will be needed. Based on the above calculation estimated operation expenses are 1,450,000 YR in one year.

2) Facilities and equipment maintenance cost

① Building maintenance cost
The annual building maintenance cost significantly increases in accordance with the passing of time The period in which major repair is unnecessary is approximately 30 years after building completion. Based on actual past examples of buildings of a similar scale, the average annual repair cost is approximately 0.08% of the direct construction cost. This is translated to approximately 150 YR/m^2.

1,600 m^2 × 150 YR 240,000 YR / year

② Building services equipment maintenance cost
The building services equipment maintenance cost is low for the first five years or so after building completion and the replacement of parts and equipment due to secular deterioration will be required thereafter. The

average annual repair cost for a span of 10 years is estimated to be approximately 0.1% of the building services installation cost.

150,000,000 YR × 0.001 150,000 YR / year

③ Equipment maintenance cost

Although the maintenance service cost, including the cost of repair parts, depends on the frequency of use, the maintenance cost of the main equipment (X-ray apparatus, automatic film developer and safety cabinets) after their procurement under the Project is estimated here.

a) Maintenance service cost and cost of repair parts (estimate)

The annual equipment maintenance cost is assumed to consist of the maintenance service cost (technical service fee and cost of simple parts based on inspection approximately once a year) and the cost of the repair parts assumed to be required. In the case of those parts which are replaced every few years, their annual cost is calculated based on their prices and frequency of replacement. The items listed in Table 3-7 are used as the basis for estimation.

Table 3-7 Estimation of Cost for Maintenance Service and Repair-parts (J¥1,000)

Equipment Name	Maintenance Contract (a)	Cost of repair parts			Total (a+b)
		Frequency of replacement (year)	Unit price	Annual Cost	
X-ray apparatus	200	X-ray lamp 5years	1,000	200	400
Automatic film Developer	50	Roller kit 5years	50	10	70
		Gear kit 5years	50	10	
Safety Cabinet	100	Hepa filter 3years	150	50	150
Total	350	-	-	270	620

The resulting estimated annual maintenance cost is ¥620,000 (approximately 885,700 YR/year; 1 YR = ¥0.7).

b) Cost of consumables

This relates to the cost of consumables which are required to conduct testing/operations. The unit price is estimated based on their general specifications and prices. The items shown in the table are used as the basis for estimation of the overall cost.

Table 3-8 Estimation of X-ray Related Consumable Cost

Equipment Name	Consumable	Unit price (J¥)	Cost for one scene (J¥)
X-ray apparatus	Film for one scene	450 / scene	450
	Roll film	21,170 / roll (100 scenes)	212
Automatic film Developer	Development / Fixer	10	10

Table 3-9 Estimation of Annual X-ray Filming Cost

		Sub total (J¥)
Indirect filming	Based on 10 indirect filmings a day, the annual cost (based on 200 working days) is calculated as follows. 10 scenes×200 days ÷ 100 scenes/roll×¥21,170 = ¥423,400	423,000
Direct filming	Based on five a day, the annual cost (based on 200 working days) is calculated as follows. 5 scenes x 200 days x ¥450 = ¥450,000	450,000
Development	5 scenes x 200 days x 20 roll of films x ¥10 = ¥200,000	200,000
	Total	1,073,000 (J¥)

Consequently, the annual cost of consumables is approximately 1,533,000 YR (1 YR = ¥0.7).

CHAPTER 4 PROJECT EVALUATION AND RECOMMENDATIONS

CHAPTER 4 PROJECT EVALUATION AND RECOMMENDATIONS

4.1 Project Effects

4.1.1 Verification of Project Suitability

(1) Necessity of the Project for TB Control in Yemen

The nationwide extension and maintenance of the DOTS Strategy based on the NTP are essential for the TB control measures of the Government of Yemen to achieve positive results. In particular, based on the belief that the establishment of a nationwide TB control network is essential to achieve the WHO targets, i.e. the curing of 80% of TB patients and improvement of the TB patient discovery rate to 70%, the work of appointing a GTC in each district has commenced to establish the required nationwide TB control system.

At present, activities based on the DOTS Strategy are in progress in 16 out of the country's 18 governorates or 66 districts out of the 226 districts in these 16 governorates. In areas where the DOTS Strategy has been introduced, the cure rate has improved from some 40% to as high as 89% as of 1998.

Meanwhile, the NTI, the Hodeida TBCC and the Taiz TBCC, all of which were established in North Yemen prior to the unification of South Yemen and North Yemen, have been recording good TB control results in the former North Yemen area through cooperation activities under the Tuberculosis Control Project in Yemen, a technical cooperation project of Japan, since 1983.

Since unification in 1990, the subject population and area of TB control activities have increased by 1.5 times and three times respectively. However, extension of the NTP in southern governorates has been slow. The materialisation of the Project which will establish a base for TB control activities in southern Yemen is, therefore, urgently required if the patient cure rate, the biggest task for TB control measures in Yemen, is to be improved. As the Project based on the DOTS Strategy is expected to improve the TB control performance in the southern and eastern parts of Yemen, the implementation of the Project is judged to be highly suitable.

(2) Management System

It is planned to run the facilities to be established under the Project with 32 staff members, including the transfer of five staff members from the Jumhuriyah Hospital in addition to the existing staff members of the PHC. The appointment of all 18 engineers and 10 out of 14 administrative staff members has already been

provisionally made. It is planned to transfer existing staff members from other health and medical facilities instead of the recruitment of new staff members for the new facilities because of the fact that a sufficient number of health workers is available at existing facilities in the governorate and no problems are anticipated in regard to securing the required number of staff members.

As the provisionally appointed personnel have practical experience of TB control measures at existing medical facilities, no management problems are anticipated in regard to the implementation of the Project.

(3) Finance

The budget to operate the planned facilities will be allocated from the budget of the Health Department of the Aden Governorate which is requested to the Ministry of Public Health by the Government of Yemen.
To cover the personnel cost of the 32 staff members, YR 5.76 million (approximately ¥4 million) will be allocated by the Ministry of Public Health. As the staff members of the new facilities will be transferred from existing medical facilities, the share of the personnel cost in the budget of the Ministry of Public Health will not significantly increase because of the establishment of the new facilities under the Project.

As far as the maintenance cost is concerned, a cost will be incurred by the regular replacement of the air-conditioning filters and others. The parts replacement and repair cost will increase after 3 - 5 years. The regular maintenance and inspection of the air-conditioning nits and generator, etc. is desirable by means of service agreements with local agents.

As the scale of the original request for the Project has been reduced to lower the maintenance cost, the required annual maintenance cost after the handing over of the facilities to the Yemeni side is expected to be approximately YR 4.26 million (approximately ¥3 million). The operation of the new facilities will commence in March, 2000 and the Ministry of Public Health is expected to provide annual budget allocation of some YR 5 million to cover the operating cost. This amount is only some 0.16% of the total budget of the Ministry and can be easily appropriated without causing any budgetary problem. The Government of Yemen has been promoting decentralisation since 1995 and the health department of each governorate has discretionary power in regard to the personnel cost, procurement cost of goods, drugs and equipment and development cost. Any budgetary shortage for future activities will be supplemented by the government of the Aden Governorate.

(4) Maintenance System

At present, the PHC has two maintenance engineers each for the building, plumbing and electrical sections. Two out of the seven night security guards currently working at the PHC will be transferred to the new facilities. The maintenance of the medical equipment and building service equipment will be conducted by the Central Workshop of the Jumhuriyah Hospital. This Central Workshop conducts the maintenance of all health and medical facilities in the Aden Governorate and its maintenance staff members are judged to have sufficient technical capability to maintain and repair the building service as well as medical equipment. No problems are, therefore, anticipated in regard to the maintenance system for the new facilities provided that training on the operation and maintenance of the building service equipment and X-ray and other medical equipment is provided after the completion of the new facilities.

At existing medical facilities, the maintenance of medical examination equipment is conducted by those using the facilities in each examination department. If the equipment breaks down, it is sent to the Central Workshop at the Jumhuriyah Hospital for repair. In the case of equipment such as X-ray equipment with electronic circuits, it is often difficult to clarify the cause of break down. Even if the cause can be found, replacement of the circuit board may be necessary. This type of work is assigned to a manufacturer's engineer even in Japan. Accordingly, it appears advisable to request the engineers of local agents or manufacturers to repair examination and laboratory equipment.

4.1.2 Project Effects

The Project anticipates the smooth implementation of the NTP, supervised by the TB Control Section of the Ministry of Health, in southern Yemen to achieve positive effects through the establishment of the Aden Tuberculosis Control Centre.

The Aden Tuberculosis Control Centre will function as the base for TB control activities in southern Yemen and the ATCC is expected to strengthen various functions, including the formulation of a national TB control plan, training of TB control workers, epidemological surveying and analysis, medical research and health education. It is hoped that such improvements will assist the achievement of the NTP targets, i.e. a TB patient cure rate of 85% and a TB positive patient discovery rate by means of sputum smear examination of 70%. The activities of the ATCC are also expected to contribute to the early discovery and treatment of TB patients, improvement of the nationwide TB control efforts, including prevention and education, in Yemen and the general improvement of health conditions in the country.

It is also expected that the training and upgrading of health personnel engaged in TB control activities will be promoted by the effective use of the new facilities and equipment provided under the Project. The implementation of TB prevention activities is expected to have the following direct and indirect effects.

(1) Direct Effects

1) Training of DOTS Personnel

Through training activities, one doctor, one DTC and one medical laboratory technician and two public health workers to serve each of 108 districts in the Project Area, totalling 540 persons, will be trained to run the DOTS system. In addition, the re-training (upgrading) of approximately half (270) of such personnel every year will be possible to maintain the functions and accuracy control of the said system.

2) Improvement of Examination Function and Establishment of Examination Network

The regular cross-checking of the sputum smear examination results of some 108 HCs, HUs and PCs equipped with an examination unit (some 2,000 cases a year) will improve the examination accuracy. The establishment of such an examination network is expected to improve the TB patient discovery and cure rates in the Project Area.

3) Improvement of Travelling Guidance

Regular travelling guidance will improve the patient management and drug management at medical facilities in villages where the DOTS is implemented and the treatment failure and drop-out rates in southern Yemen will be improved.

4) Improvement of Research and Evaluation

The preparation of more effective TB control activities will become possible through monitoring, evaluation and analysis relating to the discovery and treatment of TB patients in the selected model areas.

(2) Indirect Effects

1) Spread of TB Control Activities to Community Level

The effective training and qualitative improvement of PHC workers and village volunteers will enable the discovery of patients and medication control at the community level, increasing the access of local people to the TB Control Service.

2) Knock-On Effects on Public Health, Control of Infectious Diseases and PHC Activities

As the neighbouring PHC Office conducts various training and seminars on public health and the control of infectious diseases for health workers and medical students, it is expected that expertise regarding TB control will spread to such

personnel engaged in public health and/or research work on infectious diseases control activities using the training and accommodation facilities at the ATCC.

3) Knock-On Effects on Nationwide Network and Pending Tasks

Once the TB control network is established not only in southern Yemen but also nationwide through ATCC activities and assistance under the project-type technical cooperation, it is expected that TB control activities in Yemen will significantly improve on all fronts. To realise such improvement, however, self-help efforts on the Yemeni side will be essential, including the continuance of training programmes, implementation of travelling guidance and regular monitoring, assignment of TB control workers to public health facilities, increase of regional health workers based in the community and the regular supply of anti-TB drugs, re-agents and consumables, etc.

(3) Benefitting Population

The implementation of the Project will have the direct effect of improving the quality and abilities of some 540 public health staff members engaged in TB control activities in southern Yemen. Indirectly, the Project is expected to save some 2,200 TB patients a year based on a TB patient rate of 80 in every 100,000 and will also benefit some 15,200 family members of these patients.

4.2 Recommendations

The implementation of the Project with grant aid provided by the Government of Japan is judged to be appropriate because of the expected considerable effects described above and also because of its wide contribution to improving the health of local people. In addition, the Yemeni side appears to have sufficient manpower and funds to properly manage the Project. However, the Project will be implemented more smoothly and effectively if the following improvements as well as developments are made. While the ultimate objective of the Project is the prevention of TB, sufficient collaboration with and the efforts of all related organizations in Yemen in regard to the following issues will be essential.

(1) Improvement of Training Programmes and Upgrading of Technical Expertise of Advisors

The training of personnel working in the field of TB control will be an important function of the ATCC. The establishment of an examination unit in each district will also be important through the training of doctors, DTCs, medical laboratory technicians and public health workers to establish a TB control network. The training

of microscopists to conduct sputum smear examinations and validators to control the accuracy of the examination results will be particularly important.

Improvement of the training techniques is highly desirable in view of the implementation of training in line with the NTP.

(2) Establishment of Operation and Maintenance System for Facilities and Equipment

The ATCC will be constructed next to the existing PHC Office. Although some 120 people currently work at the PHC Office, the maintenance of the facilities and equipment is inadequate because of the lack of maintenance staff. Moreover, there is no budgetary allocation to cover the maintenance cost. In order for the new ATCC to properly function, the establishment of an appropriate maintenance system and sufficient budgetary allocation for maintenance will be essential.

(3) Establishment of User Fee System

The sources of the operating funds for the ATCC will be the budget of the Ministry of Health, a grant provided by the government of the Aden Governorate and user fees for examinations, etc. In addition to appropriate budgetary allocation by the central government, it will be necessary for the ATCC to collect user fees in line with the beneficiary pays principle advocated by the central government.
It is also to be a considerable matter to built a collection system of user fees by lending out the dormitory to the outside organizations.

(4) Budgetary Allocation to Cover Project Cost to be Borne by Yemeni Side and Control of Implementation Schedule

For the smooth implementation of the Project, appropriate budgetary allocation and control of the implementation schedule for the work to be conducted by the Yemeni side will be essential. Particularly important will be the proper completion of the facilities to supply the required level of electricity to the Project Site and paving of the approach road to the boundary of the Project Site.

APPENDICES

1. Member List of the Survey Team

Appendix 1-1 Member List of Basic Design Study (April 15 to May 19, 2000)

1.	Team Leader	**Dr. Masashi SUCHI** Chief, Project Development & Management Divn., Department of International Cooperation, The Research Institute of Tuberculosis, Japan Anti-Tuberculosis Association (JATA)
2.	Coordinator	**Mr. Tsutomu KOBAYASHI** Donor Coordination Division, Planning and Evaluation Department. Japan International Cooperation Agency (JICA)
3.	Project Manager (Architecture Planner)	**Mr. Tetsuro NISHIMURA** Kume Sekkei Co.,Ltd.
4.	Architecture Designer	**Mr. Shigeru ENOMOTO** Kume Sekkei Co.,Ltd.
5.	Facility Planner	**Mr. Hiroki YOKOYAMA** Kume Sekkei Co.,Ltd.
6.	Equipment Planner - I	**Mr. Shigetaka TOJO** International Techno Center Co., Ltd.
7.	Equipment Planner - II	**Ms. Yuka KAWABATA** International Techno Center Co., Ltd.
8.	Procurement and Cost Planner	**Mr. Hiroyuki TSUCHIYA** Kume Sekkei Co.,Ltd.
9.	Interpreter	**Mr. Tomoya TAKASE** Japan International Cooperation Center (JICE)

Appendix 1-2 Member List of Draft Explanation Study
(August 12 to September 01, 2000)

1. Team Leader	**Dr. Masashi SUCHI** Chief, Project Development & Management Divn., Department of International Cooperation, The Research Institute of Tuberculosis, Japan Anti-Tuberculosis Association (JATA)
2. Coordinator	**Mr. Yukio IWAKI** Second Project Management Division, Grant Aid Management Department. Japan International Cooperation Agency (JICA)
3. Project Manager (Architecture Planner)	**Mr. Tetsuro NISHIMURA** Kume Sekkei Co.,Ltd.
4. Architecture Designer	**Mr. Shigeru ENOMOTO** Kume Sekkei Co.,Ltd.
5. Equipment Planner - I	**Mr. Shigetaka TOJO** International Techno Center Co., Ltd.
8. Procurement and Cost Planner	**Mr. Hiroyuki TSUCHIYA** Kume Sekkei Co.,Ltd.
9. Interpreter	**Mr. Tomoya TAKASE** Japan International Cooperation Center (JICE)

Supplemental Consultant Staff :

10. Facility Designer	**Mr. Takakazu MYOUEN** Kume Sekkei Co., Ltd.
11. Electric Planner	**Mr. Takeya SHIMODA** : Kume Sekkei Co., Ltd.

2. Survey Schedule

Appendix 2-1 SURVEY SCHEDULE FOR BASIC DESIGN STUDY

(April 15 ～ May 19, 2000：35days)

No.	Date (Day)	Activities		
1	April 15 (Sat)	13:00 Left Tokyo by JL-407 & LH-715 Consultant (Mr. Nishimura, Mr. Enomoto, Mr. Yokoyama, Mr. Tojo, Ms. Kawabata, Mr. Tsuchiya, Mr.Takase)		
		18:00 Arrive at Frankfurt		
2	16 (Sun)	14:20 Left Frankfurt (LH-652)		
		23:40 Arrive at Sana'a		
3	17 (Mon)	08:00 Team meeting for schedule 09:00 Embassy of Japan courtesy call 10:00 MOPD courtesy call (Mr.Hisham) 11:00 MOPH courtesy call (Mr.Faisal), Explanation of Inception Report		
		14:00 Meeting with JICA Technical Cooperation（Ms. Egami, Mr. Watanabe）		
4	18 (Tue)	09:30 Observation of NTI / Survey of background of request		
		16:00 Meeting with local consultant on geological survey 17:00 Team meeting		**<Equipment Planning Survey (Aden) >**
5	19 (Wed)	09:00 Survey of NTI activities (Organization, Staff, Activities, etc.)		11:30 Mr. Tojo, Ms. Kawabata left Sana'a (IY804)
		16:00 Meeting with local consultant on geological survey		12:14 Arrive at Aden 13:30 Meeting with PHC
6	20 (Thu)	09:00 Observation of Sana'a city		09:00 Survey of PHC Lab. 11:00 Survey of Mansourah PC
7	21 (Fri)	09:00 Observation of Sana'a city	**<Facility Planning Survey (Aden) >**	Data filing / input
		<Confirmation of Contents of Request>	19:00 Mr. Enomoto, Mr. Tsuchiya Mr. Yokoyama, left Sana'a (IY-854) 20:00 Arrive at Aden	
8	22 (Sat)	04:30 Dr. Suchi, Mr. Kobayashi arrive at Sana'a (EK451) 10:30 Embassy of Japan Courtesy Call 11:45 MOPD Courtesy Call	09:00 Director of Aden PHC courtesy call 10:00 Aden Health Office courtesy call 11:00 Meeting with GTC of PHC	09:00 Meeting at PHC 09:30 Survey of Boreiqa PC 11:30 Observation of Sheikh Othman PC
		12:30 MOPH Courtesy Call 14:30 Observation of NTI	13:00 Site observation 15:00 Data filing / input	15:00 Data filing / input 17:00 Survey of local agent
9	23 (Sun)	09:30 Dr. Suchi, Mr. Kobayashi Mr. Nishimura, Mr. Takase, Ms. Egami Mr. Watanabe left Sana'a (IY406) 10:15 Arrive at Aden 11:00 DG of Aden Health Office Courtesy Call 11:45 Observation of Medan PC	07:30 Site confrmation 09:00 Survey of Khormaksar HU 09:30 Survey of Jumhuriyah Hospital 10:00 Survey of Medan PC 10:30 Survey of Mu'lla PC 11:00 Survey of Tawahi HU 11:30 Survey of Mansourah PC	09:00 Meeting at PHC 09:30 Survey of Khormaksar HU 11:00 Survey of Medan PC
		12:45 Observation of Mu'lla PC 15:00 Meeting with Yemeni staff	14:00 Team meeting 15:00 Data filing / input	15:00 Data filing / input 17:00 Survey of local agent
10	24 (Mon)	08:00 Team meeting 09:00 Meeting with Director of PHC 10:15 Meeting with DG of Aden Health Office 11:10 Governor of Aden Courtesy Call 12:45 Observation of Mansourah PC	08:00 Team meeting 09:00 Contract with local consultant on geological survey 09:30 Survey of Boreiqa PC 10:30 Survey of Observation of Sheikh Othman PC 11:30 Survey of PHC Laboratory	08:00 Team meeting 09:00 Meeting at PHC 09:30 Survey of Tawahi HU 11:00 Survey of Mu'lla PC
		13:30 Observation of Sheikh Othman PC 17:00 Team meeting	14:00 Data filing / input 17:00 Team meeting	15:00 Data filing / input 17:00 Team meeting

No.	Date (Day)	Activities		
11	25 (Tue)	08:45 Observation of Jumhuriyah Hospital 11:15 Meeting on contents of facility at PHC	09:00 Observation of construction site in Aden	09:00 Survey of Lab. of Jumhuriyah Hospital
		15:00 Meeting on contents of facility	12:00 Survey of maintenance office in Jumhuriyah Hospital	15:00 Data filing / input
12	26 (Wed)	08:00 Team meeting 09:00 Meeting on equipment plan at PHC 12:00 Report to DG of Health Office	08:00 Team meeting 09:00 Survey of building regulation at Ministry of ConstructionAden office	08:00 Team meeting 09:00 Meeting on equipment plan at PHC 12:00 Report to DG of Health Office
		15:00 Data filing / input	15:15 Observation of hotel construction site	15:00 Data filing / input
13	27 (Thu)	06:00 Ms. Egami, Mr.Watanabe left Aden (IY405) 06:00 Arrive at Sana'a 10:00 Team meeting	10:00 Team meeting Data analysis	10:00 Team meeting Data analysis
14	28 (Fri)	19:15 Dr. Suchi,Mr. Kobayashi, Mr. Nishimura, Mr. Tojo, Ms. Kawabata l left Aden (IY651) 20:00 Arrive at Sana'a	Draw up facility concept plan	
15	29 (Sat)	**<Discussion on Minutes of Meeting (MM)・ Equipment Planning Survey (Sana'a) >**	**<Facility Planning Survey (Aden) >**	
		09:00 Meeting with MOPH/JICA technical cooperation 10:00 Meeting with MOPH on contents of facility & equipment 12:00 Discussion on MM	09:00 Survey of infrastructure at Aden Health Office 10:30 Survey on Building Permit at Mansourah District Office 11:00 Hearing from Aden Health Office engineer	
		14:00 Preparation of attached document for Minutes of Meeting	13:30 Market survey on construction material	
16	30 (Sun)	09:00 Discussion on MM at MOPH 11:40 Minister of MOPH courtesy call 12:30 NTIreconfirmation	09:00 Meeting with Aden Health Office engineer 10:00 Survey of General Corp. for Electricity, Telecom, Water & Sewerage in Aden 11:30 Meeting with Telecom at Mansourah Office	
		14:00 Luncheon meeting (by Minister of MOPH) 15:45 Team meeting on MM	13:30 Meeting with General Corp. for Water & Sewerage	
17	May 1 (Mon)	Holiday (May Day) 10:00 Observation of market in Sana'a	08:30 Survey of Aden city sewage treatment plant & water supply facility 09:30 Observation of construction market in Aden 13:30 Data analysis	
18	2 (Tue)	09:00 Correction of draft MM at MOPH Collection of data 11:30 Meeting with Mr. Faisal	09:00 Survey of maintenance workshop at Aden Health Office 11:00 Observation of Aden medical storage	
		14:00 Luncheon meeting (by Team Leader)	13:00 Survey of unit price f construction material	
19	3 (Wed)	08:45 WHO Representative Office courtesy call 10:30 Correction of draft MM at MOPD Collection of data 12:10 Signing on MM	09:30 Survey of concrete supplier 09:00 Observation of solid waste treatment place 10:00 Survey of construction organization	
		13:45 Report to Embassy of Japan	12:00 Meeting with Ministry of Construction Aden Office	
20	4 (Thu)	02:10 Dr. Suchi,Mr. Kobayashi, Ms. Kawabata left Sana'a (LH653) → Arrive at Narita 5/5	Data analysis	

		20:00 Mr. Nishimura, Mr. Tojo left Sana'a (IY360) 20:45 Arrive at Aden	

No.	Date (Day)	Activities	
21	5 (Fri)	**<Facility / Equipment Planning Survey (Aden) >**	
		17:00Team meeting	
22	6 (Sat)	09:30 Supplementary survey at PHC 11:00 Meeting with Director of PHC 11:30 Observation of HIHS	
		17:00Survey of market of furniture	
23	7 (Sun)	09:00 Meeting with GTC of PHC 11:30 Observation of Aden Health Institute	**<Procurement & Cost Estimation Survey (Sana'a ・ 3rd Country) >**
			10:30 Mr.Tsuchiya, Mr.Yokoyama left Aden (IY403) 12:30 Arrive at Sana'a
		14:00Translation & analysis of collected data	14:00 Report to JICA technical cooperation 15:30 Report to Embassy of Japan 18:00 Meeting with local consultant
24	8 (Mon)	09:00 Financial survey of Aden Health Office 10:30 Collection of cost data at Ministry of Construction Aden Office 11:30 Meeting with Asst. DG planning and Health Development	02:10 Mr. Yokoyama left Sana'a (LH653) → Arrive at Narita 5/9 09:00 Survey of construction market
		13:30 Meeting with DG of Aden Health Office	21:30 Mr. Tsuchiya left Sana'a (SV681) 23:05 Arrive at Jeddah
25	9 (Tue)	09:00 Financial survey of Aden Health Office 10:10 Final meeting with Director of PHC	08:30 Survey of steel fabricator 10:00 Survey of construction company
		17:00 Survey of hardware, sanitary fixtures	15:00 Survey of construction material
26	10 (Wed)	07:00 Left hotel 10:00 Survey of Taiz Sub Center	08:30 Survey of mechanical company
		14:30 Left Taiz 16:30 Arrive at hotel	16:00 Left Jeddah (SV552) 19:30 Arrive at Dubai
27	11 (Thu)	06:00 Mr. Nishimura, Mr. Enomoto, Mr. Tojo, Mr. Takase left Aden (IY405)	08:30 Survey of construction company
		06:45 Arrive at Sana'a	13:00 Survey of construction market
28	12 (Fri)	08:15 Mr. Enomoto, Mr. Tojo, Mr. Takase left Sana'a (IY506)	09:00 Observation of construction site in Dubai
		08:45 Arrive at Hodeidah	13:00 Data filing / input
29	13 (Sat)	(Mr. Nishimura) 09:00 Supplementary survey at NTI 11:00 Data collection at MOPH/JICA (Mr. Enomoto, Mr. Tojo, Mr. Takase) 09:00 Survey of Hodeidah Sub Center	03:45 Left Dubai (LH633) 08:35 Arrive at Frankfurt 20:50 Left Frankfurt (JL408) → Arrive at Narita 5/14
30	14 (Sun)	(Mr. Nishimura) 09:00 Supplementary survey at MOPH/JICA	
		(Mr. Enomoto, Mr. Tojo, Mr. Takase) 13:45 Left Hodeidah (IY44) 14:30Arrive at Sana'a 17:00 Survey of local agent for computer	
31	15 (Mon)	08:30 Supplementary survey at MOPH 09:00 Central Health Laboratory CHL) 11:00 Survey of Al-RaiseHC 11:55 Survey of Al- IraqiHC	
		15:00 Data filing / input	
32	16 (Tue)	08:45 Observation of GCRB	
		13:00 Report preparation 16:30 Survey of agent for mechanical equipment	
33	17 (Wed)	09:00 Final report to MOPH 10:00 Final report to MOPD	
		15:00 Final report to Embassy of Japan	
34	18 (Thu)	02:10 Left Sana'a (LH653) 09:45 Arrive at Frankfurt	

		20:50 Left Frankfurt (JL408)
35	19	
	(Fri)	14:55 Arrive at Narita

Appendix 2-2 SURVEY SCHEDULE FOR BASIC DESIGN STUDY
(August 12 ～ September 1, 2000 : 21days)

No.	Date (Day)	Activities	
1	Aug. 12 (Sat)	13:00 Left Tokyo（JL-407、LH-715） Consultant (Mr. Nishimura, Mr. Enomoto, Mr. Tojo, Mr. Tsuchiya, Mr. Takase) 18:00 Arrive at Frankfurt	
2	13 (Sun)	14:15 Left Frankfurt (LH-652) 23:35 Arrive at Sana'a	
3	14 (Mon)	09:00 Embassy of Japan courtesy call 10:00 Team meeting for schedule 11:00 MOPH courtesy call (Mr.Garama), Explanation of Draft Report 12:30 MOPD courtesy call (Mr.Sharaf), Explanation of Draft Report	
4	15 (Tue)	09:00 MOPH courtesy call (Director of Finance) Confirmation of Budget 10:30 Discussion on Draft Report 16:00 Preparation of Document	＜Explanation of Draft Report (ADEN)＞
5	16 (Wed)		11:30 Left Sana'a (IY-804) (Member of Consultant) 12:15 Arrive at Aden 13:00 Aden Health Office courtesy call (Director: Dr.Laswar), Explanation of Draft Report 16:00 Team meeting
6	17 (Thu)	23:35 Dr. Suchi (Team Leader) arrive at Sana'a (LH-652)	09:00 Observation of Construction Site 14:00 Data filing / input
7	18 (Fri)	19:00 Arrive at Sana'a（Mr. Nishimura, Mr.Tojo）	16:00 Team meeting（confirmation of survey item） 18:15 Mr. Nishimura, Mr.Tojo Left Aden (IY-651)
8	19 (Sat)	＜Explanation of Draft Report (SANA'A)＞ 09:00 Embassy of Japan courtesy call 11:00 MOPH courtesy call (Mr.Garama) 12:00 MOPD courtesy call (Mr.Sharaf) 14:00 Data filing / input	＜Survey for Facility Planning-1 (ADEN)＞ 09:00 Explanation & Discussion of Draft Report at PHC Office (Mr. Enomoto, Mr. Tsuchiya, Mr. Takase) 15:00 Data filing / input
9	20 (Sun)	09:00 Observation of NTI 10:30 Meeting with MOPH(Dr.Shaher) 11:00 Meeting with MOPH (Prof.Shaiban) 23:35 Arrive at Sana'a (LH-652) (Mr. Iwaki Mr. Shimoda, Mr. Myouen)	09:00 Confirmation about Application of Building Permit at MOC Aden Office 11:00 Meeting at PHC 14:00 Data filing / input
10	21 (Mon)	10:00 Left Sana'a (IY-812) (Dr. Suchi, Mr. Iwaki, Mr.Nishimura, Mr. Tojo, Mr. Shimoda, Mr. Myouen) 10:45 Arrive at Aden ＜Meeting (ADEN)＞ 11:45 PHC courtesy call (Dr.Hadi) 16:00 Team meeting	09:00 Confirmation about Building Permit, Road connection at Municipality of Mansourah 14:00 Observation of Local Contractor
11	22 (Tue)	09:00 Discussion on Draft Report & confirmation of reference laboratory at PHC 11:30 Aden Health Office courtesy call (Dr.Laswar) 12:00 Aden Governorate courtesy call (Governor: Mr.Ghanem) 17:30 Team meeting	
12	23 (Wed)	09:00 Discussion on Equipment at PHC, Preparation of Draft Minutes 11:30 Report to PHC, Aden Health Office 16:15 Analysis of collected data	＜Survey for Facility Planning-2 (ADEN)＞ 09:00 Confirmation of Telephone incomming, Infrastructure 14:00 Survey of construction material
13	24 (Thu)	06:00 Left Aden (IY-821) (Dr. Suchi, Mr. Iwaki) 06:45 Arrive at Sana'a	09:00 Observation of construction site 16:00 Confirmation of proposed site, surrounding environment
14	25 (Fri)	06:00 Left Aden (IY-821) (Mr. Nishimura, Mr.Tojo) 06:45 Arrive at Sana'a	Data filing / input

No.	Date (Day)	Activities	
15	26 (Sat)	＜Discussion on Minutes (SANA'A)＞ 09:00 Discussion on Draft Minutes at MOPH 11:00 Discussion on Draft Minutes at MOPD	09:00 Confirmation of Water supply, Drainage, Electrical power 11:00 Observation of MOC Aden Office concrete test lab. 14:00 Survey of Public Corporation for Construction and Housing Collection of supplementary data
16	27 (Sun)	09:00 Discussion at MOPD 10:30 MOPH courtesy call to Minister, Signing of Minutes 15:30 Report to Embassy of Japan	09:00 Observation of Aden Governorate General Hospital 14:00 Correction of Basic Design Drawing
17	28 (Mon)	02:10 Left Sana'a (LH-653) → Arrive at Narita (Aug.29) Dr. Suchi, Mr. Iwaki 09:00 Data filing（Mr. Nishimura）, Survey of Local Agent of Equipment (Mr. Tojo)	09:00 Final Report to PHC 10:00 Final Report to Aden Health Office 20:15 Left Aden (IY-813) 21:00 Arrive at Sana'a
18	29 (Tue)	09:00 Survey of construction market at Sana'a（Mr. Enomoto, Mr. Tsuchiya, Mr. Takase, Mr. Shimoda, Mr. Myouen）, Survey of Local Agent of Equipment (Mr. Tojo) Data filing（Mr. Nishimura）	
19	30 (Wed)	09:00 Report to Embassy of Japan 10:00 Report to MOPD 11:00 Report to MOPH	
20	31 (Thu)	02:10 Left Sana'a (LH-653), （Mr. Nishimura, Mr. Enomoto, Mr. Tojo, Mr. Tsuchiya, Mr. Takase, Mr. Shimoda, Mr. Myouen） 09:45 Arrive at Frankfurt	
		20:50 Left Frankfurt (JL-408)	
21	Sep. 1 (Fri)	14:55 Arrive at Narita	

3. List of Party Concerned in the Recipient Country

Appendix 3 List of Party Concerned in the Recipient Country

1. Ministry of Planning & Development: MOPD

Mr. Hisham Sharaf Abdallah	Deputy Minister
Ms. Asma Al-Basha,	Assistant Deputy Minister
Mr. Khalid Afif	DG, Asian and Australian Countries
Mr. Ahmed Hussein Jawi	Director, Asian and Australian Countries

2. Ministry of Public Health: MOPH

Dr. Abdullah Abdul-Wali Nasher	Minister
Dr. Faisal M. Al-Kohaly	Act. Deputy Minister, Planning & Development
Dr. Naif Naser	Director General, Planning & Development
Dr. Mohamed Aid Sahail	Director General, Primary Health Care
Dr. Nagiba Abdul-Gani /Ms.	Director General, MCH
Dr. Amin Noman S.Al-Absi	Director, National TB Control Program
Dr. Shaher Ali Moh'd Saeed	Assistant Director, NTP
Mr. Fawzy Barahim	Lab. Supervisor, NTP
Mr. Ahemad A. Al-Zubair	Financial Administrative, NTP
Mr. Al-Harazi Hussain H	Architect
Mr. Ali Taher Abudulmogni	Director General, Finance Section

3. National Tuberculosis Institute: NTI

Dr. Abdul Malik Al-Kibssi	Director
Dr. Mohamed M. Al-Khawlany	Deputy Director
Dr. Issam Al Kherbi	Deputy Director
Mr. Adnan Al-Akhali	Chief of Laboratory
Mr.Abdul-Khaleq Abu Taleb	Chief of Pharmacy
Mr. Mansour Ali	Chief of Maintenance
Mr. Fateh Ali Ahamed	Account, NTI and NTP
Dr. Mahmud Yeha Mahmoud	Sanaa City TB Coordinator: GTC

4. Central Public Health Laboratory: MOPH

Dr. Mohamed Salem Bin Break	Director General
Dr. Abdul Wahhab Saif	Assistant Director General

5. Al-Raise Health Center

Mr. Abdulla-Al-Dawlah	Director
Dr. Al-Anami	Deputy Director

6. Al-Iraqi Health Center

Dr. Abdul Malik Abood	Director

7. Aden Governorate

Mr. Taha Ahmed Ghanem	Governor
Mr. Abdulla Ibrahim Moh'd	Director General

8. Aden Health Office: MOPH

Dr. Al-Khader Nasser Laswar	Director General
Dr. Enas Taher Mohammed	Director, Human Resources Development
Mr. Ali Saeed Nagi	Asst. DG, Planning and Health Development
Mr. Muhammad Rodein	Chief Accountant, Accounting Section
Mr. Abdulla Seed	Statistical Department

9. Aden PHC Office

Dr. Mohamed Abdulla HADI	Director
Dr. Osama Abdul R. Badeeb	Aden TB Coordinator: GTC
Dr. Abdul Aziz Adam	Assistant GTC
Mr. Fuad Haddad	Chief of Laboratory Supervisor
Mr. Nageeb Nasser	Medical Assistant
Mr. Nasser Awad	Medical Assistant
Mr. Labib Tuajeg	Lab. Technician
Mr. Fadel Rashad	Lab. Technician
Mr. Sadek Saeed	Lab. Staff
Mr. Galeb Ali	Lab. Staff
Mr. Naser Mohamed	Lab. Staff
Ms. Lawahed Mohamed	Lab. Staff

10. Kormaksar Health Unit

Ms. Naila Ahmed	Chief of Laboratory

11. Jumhuriah (Al-Gamhoria) Hospital

Mr. Jamil Abdulrazak Jan	Officer in Charge, Male TB Ward
Mr. Mohamed Abdula Hassan	Director of Maintenance, MOH Aden Branch
Mr. Ahmed Saleh Ali	Manager, Aden Rescuer Center

12. Medan Polyclinic

Dr. Shukri Ali	Director
Dr. Mohamed Mahroos	DTC, Medan District
Mr. Hassan Abdul Rassol	Chief Specialist

13. Mualla Polyclinic

Dr. Mohamed Abdul Halim	Director
Dr. Kamel Ahmed Saeed	DTC, Mualla District
Mr. Khaled Abdul Baki	Chief of Laboratory

14. Tawahi Health Unit

Dr. Nasser	Director

15. Mansoura Polyclinic

Dr. Abdulrab Ahmed Muflhi	Assistant Director General

16. Boreiqa Polyclinic

Dr. Ahamed Awad Abood	Director

17. Sheikh Othman Polyclinic

Dr. Abdul Galil K	Director
Mr. Aid Saeed Kassim	Lab. Staff

18. Ministry of Construction & Housing & Civil Planning, Aden Office

Mr. Saami Abdul Karim	Director of Engineering Department
Mr. Mohamed Akil Said	Structure Engineer
Mr. Muhsin Ali	Electrical Engineer
Ms. Samia Ahmed Musaid	Quantity Surveyor
Mr. Talal Ali Binali	Civil Engineer

19. National Water and Sanitation Corp. Aden: NWSA

Mr. Hassan Saeed Kassim	Deputy General Manager、Water Division
Mr. Ahmed N. Aboteeba	Deputy General Manager、Sewage Division

20. Public Electricity Corporation, Aden

Mr. Aref Abdul Hameed	Distribution Manager

21. Public Telecommunication Corporation, Aden

Ms. Samira Abdulla Mohamed	Superintendent Mu'lla Area

22. Telecom Yemen, Al-Mansourah

Mr. Nasser Daaii	Director of Custom Service

23. Dr. Amin Nashil Higher Institute for Health Sciences: HIHS

Dr. Abdul Jabber H. Mohanmed	Dean

24. Aden Health Institute: HMI

Mr. Muhammad Saleh	Principal

25. Taiz TB Center

Dr. Yassin Radman T. Al-Athwary	Director, GTC Taiz

26. Hodaidah TB Center

Dr. Mohamed Saif Al-Kobate	General Manager
Dr. Fahad Al-Janad	Deputy Manager
Dr. Abdul Wahed Othman	Medical Doctor
Mr. Abdulhady Al-Wakdy	Lab. Technician
Mr. Mohammed Maqubel	Lab. Technician

27. General Corporation for Roads and Bridges: GCRB

Mr. Mohamed Al-Ghazaly	Chief Engineer
Mr. Abdullah Hubaish	Deputy D/G of Workshop
Mr. Mokbel Ameer	Inspector of Workshop
Mr. Abobakr Munasir Humam	Director General for Mechanic & Store
Mr. Abdul Karim Al-Shamafi	Mechanical Engineer
Mr. Amin Al-Ayami	Engineer

28. WHO Yemen Representative Office

Dr. Hashim A. Elzein Elmousaad	Representative

29. UNHCR/UNV, Aden Refugee Camp

Ms. Yayoi Suzuki	UN Volunteer

4. Minutes of Discussions (Basic Design Study)

MINUTES OF DISCUSSIONS ON THE BASIC DESIGN STUDY ON THE PROJECT FOR THE EXPANSION OF TUBERCULOSIS CONTROL IN THE SOUTHERN AND EASTERN GOVERNORATES OF THE REPUBLIC OF YEMEN

In response to a request from the Government of the Republic of Yemen (hereinafter referred to as "Yemen"), the Government of Japan decided to conduct a Basic Design Study on the Project for the Expansion of Tuberculosis Control in the Southern and Eastern Governorates of the Republic of Yemen (hereinafter referred to as "the Project") and entrusted the study to the Japan International Cooperation Agency (hereinafter referred to as "JICA").

JICA sent to Yemen the Basic Design Study Team (hereinafter referred to as "the Team") headed by Dr. Masashi Suchi, Chief, Project Development and Management Division, Department of International Cooperation, The Research Institute of Tuberculosis, Japan Anti-Tuberculosis Association, and is scheduled to stay in the country from April 16 to May18, 2000.

The Team held discussions with the officials concerned in the Government of Yemen and conducted a field survey at the study area.

In the course of discussions and field 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.

Sana'a , May 3, 2000

Dr. Masashi Suchi
Leader
Basic Design Study Team
Japan International Cooperation Agency

Mr. Faisal M. Al-Gohaly
Acting Deputy Minister for Planning and Development
Ministry of Public Health
The Republic of Yemen

3.5.2000

Mr. Hisham Sharaf Abdalla
Deputy Minister for International Cooperation
Ministry of Planning and Development
The Republic of Yemen

ATTACHMENT

1. Objective of the Project

The objective of the Project is to expand and improve the National Tuberuclosis Control Program in the Southern and Eastern Governorates in Yemen through the establishment of the Aden Tuberculosis Control Center and providing medical equipment to related health facilities in Aden.

2. Project Site

2-1 The construction site of the Aden Tuberculosis Control Center is Al Mansoura, Aden Governorate, the Republic of Yemen. The site map is attached in Annex 1.

2-2 The names of related health facilities are described in Annex 1.

3. Responsible and Implementing Agency

3-1 The Responsible Agency is Ministry of Public Health in Yemen.

3-2 The Implementing Agency is Health Office in Aden Governorate in coordination with the National Tuberculosis Control Program in Yemen.

4. Items requested by the Government of Yemen

After discussions with the Team, the following items were finally requested by the Yemeni side. JICA will assess the appropriateness of the request and will recommend it to the Government of Japan for approval.

4-1 Construction of Building and Procurement of Equipment for Aden Tuberuculosis Control Center
Details of items are listed in Annex 2 and 3.

4-2 Procurement of Equipment for Related Health Facilities
Details of items are listed in Annex 4.

5. Japan's Grant Aid Scheme

5-1 The Yemeni side understands the Japan's Grant Aid Scheme explained by the Team, as described in Annex 5.

5-2 The Yemeni side will take the necessary measures, as described in Annex 6, for smooth implementation of the Project, as a condition for the Japan's Grant Aid to be implemented.

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6. Schedule of the Study

6-1 The consultants will proceed to further studies in Yemen until May 18, 2000.

6-2 JICA will prepare the draft report in English and dispatch a mission to Yemen in order to explain its contents in August, 2000.

6-3 In case that the contents of the report are accepted in principle by the Government of Yemen, JICA will complete the final report and send it to the Government of Yemen around November, 2000.

7. Other relevant issues

7-1 The Government of Yemen and the Team confirmed that functions of the Aden Tuberculosis Control Center will be as follows;

(a) Training of health personnel for TB control,

(b) Supervision of TB control activities in related health facilities,

(c) Reference for quality assurance of sputum smear examination and X-ray examination,

(d) Operations research.

7-2 The Government of Yemen and the Team agreed on the establishment of a Task Force for execution of the Project.

7-3 The Government of Yemen shall allocate, in its fiscal yearly budget, the financing and personnel for maximum operation and maintenance of the facility and equipment.

7-4 The Ministry of Public Health, the Government of Yemen shall be responsible for the execution of the Project on the basis of all documents and designs agreed by both Governments.

7-5 The Government of Yemen shall complete the following responsibilities before the commencement of the construction;

(a) to clear the proposed construction site,

(b) to shift existing aerial Electricity and Telephone lines,

(c) to make new gate facing on main road,

(d) to issue necessary Building Permits.

7-6 The Government of Yemen requested the Team to include general furniture in the undertakings by the Government of Japan, and the Team agreed to explain this matter to the Government of Japan.

7-7 The Government of Yemen will submit answers to the questionnaire handed by the Team before May 13, 2000.

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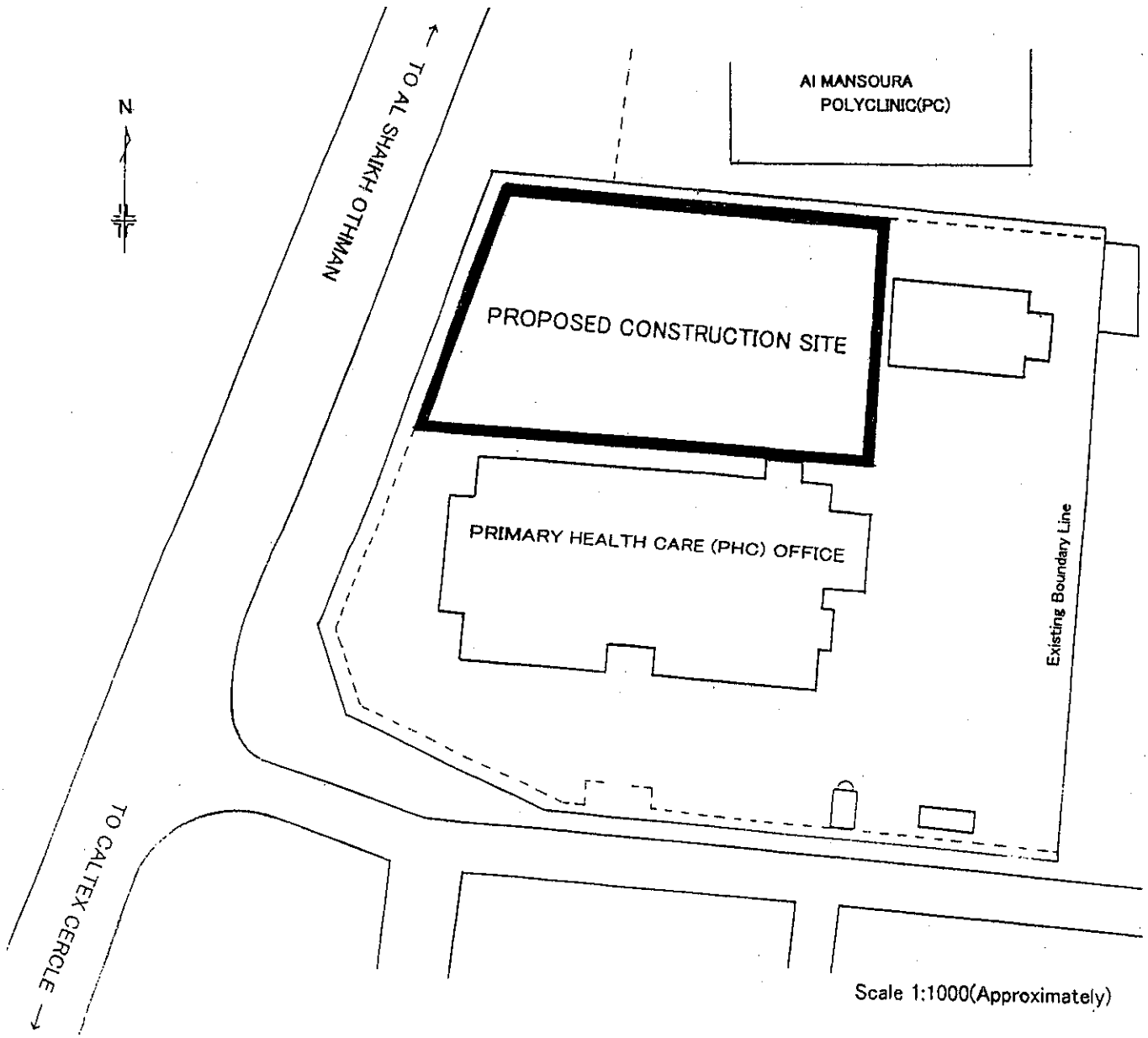
ANNEX-1

I. Proposed Construction Site



II. Name of Related Health Facilities

1. Medan(Crater) Polyclinic
2. Mualla Polyclinic
3. Mansoura Polyclinic
4. Sheikh Othman Polyclinic
5. Boreiqa Polyclinic
6. Tawahi Health Unit
7. Khormaksar Health Unit
8. Jumhuriyah Hospital

ANNEX-2

Requested Rooms for ADEN TB CONTROL CENTER

Departments	Rooms
1) ADMINISTRATION DEPT.	1 Director's Office 2 Administration Room 3 Meeting Room 4 Storage 5 Worker's Room 6 Guard Room 7 Maintenance Room 8 Machine Room
2) EXAMINATION DEPT.	1 Laboratory 2 Preparation Room 3 X-ray Room 4 Dark Room 5 Control Room 6 Labo staff Room 7 X-ray staff Room 8 Waiting Lobby
3) SUPERVISING DEPT.	1 Supervisor's Room 2 Statistics Room
4) TRAINING DEPT.	1 Lecture Room 2 Seminar Room 3 Training Laboratory 4 Training Material Room 5 Library 6 Trainer's Room
5) DORMITORY	1 Reception 2 Single Bed Room (3 rooms) 3 Twin Bed Room (7 rooms) 4 Multi-purpose Room 5 Dining Room 6 Laundry
6) COMMON SPACE	1 Entrance Hall 2 Corridor 3 Restroom 4 Kitchenette

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ANNEX-3

Requested Equipment for Aden TB Control Center

Room	Equipment	Qty	Priority
1) ADMINISTRATION DEPT.			
Director's Office	Desktop Computer	2	A
	Printer	2	A
	Typewriter	1	A
	Facsimile	1	B
Administrative Room	Desktop Computer	1	A
	Printer	1	A
Meeting Room	Overhead Projector	1	A
	Screen	1	A
Storage	Medical Refrigerator	1	A
Maintenance Room	Floor Cleaner	2	A
	Maintenance Tools	1	A
2) EXAMINATION DEPT.			
Laboratory	Biological Microscope	4	A
	Safety Cabinet (Clean Bench)	1	A
	Bunsen Burner	3	A
	Autoclave	1	A
	Reagent Cabinet	1	A
	Instrument Cabinet	1	B
	Medical Refrigerator	1	A
	Incubator	1	A
	Centrifuge	1	A
Preparation Room	Hot-Air Oven	1	A
	Inspissator(Coagulator)	1	A
	Pipette Washer(ultra-sound)	1	A
	Water Distiller	1	A
	Analytical Balance	2	A
	Water Bath	1	A
	Glassware	1	A
	Reagent Cabinet	1	A
	Instrument Cabinet	1	B
	Glassware Dryer	1	A
	Refrigerator	1	A

Room	Equipment	Qty	Priority
X-ray Room	X-ray unit with accessory	1	A
Dark Room	Automatic Film Developer(Roll)	1	A
	Manual Film Developer	1	A
	Dark Room Equipment	1	A
	Instrument Cabinet	1	B
	Refrigerator	1	A
	Pass Box	1	A
Control Room	Film Illuminator	1	A
	RP Film Illuminator	1	A
3) SUPERVISING DEPT.			
Supervisor's Office	Desktop Computer	1	A
	Printer	1	A
Statistics Room	Desktop Computer	1	A
	Printer	1	A
4) TRAINING DEPT.			
Lecture Room	Object Projector	1	A
	Screen	1	A
	Sound System (movable)	1	A
	TV with Console Box	1	A
	Video Recorder/Player	1	A
Training Laboratory	Biological Microscope	8	A
	Microscope with Teaching Head	1	A
	Safety Cabinet	1	A
	Bunsen Burner	4	A
	Reagent Cabinet	1	A
	Instrument Cabinet	1	B
	Autoclave	1	A
Training Material Room	Copy Machine with sorter	1	A
	Film Illuminator (movable)	1	A
	Video Camera	1	B
Others	Bus	1	B
	Mini Bus	1	B
	4WD Vehicle	2	A

Requested Equipment for Related Health Facilities in Aden

Item No.	Name of Equipment	Total Qty	Name of Health Facilities															
			Md		Ml		Ma		SO		Br		Tw		Kh		JH	
			Qty	Priority	Qty	Priority	Qty	Priority	Qty	Priority	Qty	Priority	Qty	Priority	Qty	Priority	Qty	Priority
1	Microscope	2													1	B	1	B
2	Motorbike	4	1	A	1	A			1	A	1	A						
3	TeleVideo	5	1	B	1	B	1	B	1	B	1	B						
4	Suction Pump	2															2	A
5	Resuscitator (Ventilator)	4															4	A
6	Refrigerator	8	1	B	1	B	1	B	1	B	1	B	1	B			2	B
7	Air conditioner	7	1	B	1	B	1	B	1	B	1	B	1	B	1	B		

Related Health Facilities:

Md : Medan(Crater)PC
Ml : Mualla PC
Ma : Mansoura PC
SO : Sheikh Othman PC
Br : Boreiqa PC
Tw : Tawahi HU
Kh : Khormaksar HU
JH : Jumhuriyah Hospital

ANNEX-4

ANNEX- 5

Japan's Grant Aid Scheme

1. Grant Aid Procedures

1) Japan's Grant Aid Program is executed through the following procedures.

Application	(Request made by a recipient country)
Study	(Basic Design Study conducted by JICA)
Appraisal & Approval	(Appraisal by the Government of Japan and Approval by Cabinet)
Determination of Implementation	(The Notes exchanged between the Governments of Japan and the recipient country)

2) Firstly, the application or request for a Grant Aid project submitted by a recipient country is examined by the Government of Japan (the Ministry of Foreign Affairs) to determine whether or not it is eligible for Grant Aid. If the request is deemed appropriate, the Government of Japan assigns JICA (Japan International Cooperation Agency) to conduct a study on the request.

Secondly, JICA conducts the study (Basic Design Study), using (a) Japanese consulting firm(s).

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, once approved by the Cabinet, becomes official with the Exchange of Notes signed by the Governments of Japan and the recipient country.

Finally, for the implementation of the project, JICA assists the recipient country in such matters as preparing tenders, contracts and so on.

2. Basic Design Study

1) Contents of the Study

The aim of the Basic Design Study (hereafter referred to as "the Study"), conducted by JICA on a requested project (hereafter referred to as "the Project") is to provide a basic document necessary for the appraisal of the Project by the Japanese Government. The contents of the Study are as follows:

a) Confirmation of the background, objectives, and benefits of the requested Project and also institutional capacity of agencies concerned of the recipient country necessary for the Project's implementation.
b) Evaluation of the appropriateness of the Project to be implemented under the Grant Aid Scheme from a technical, social and economic point of view.
c) Confirmation of items agreed on by both parties concerning the basic concept of the Project.
d) Preparation of a basic design of the Project
e) Estimation of the costs of the Project

The contents of the original request are not necessarily approved in their initial form as the contents of the Grant Aid Project. The Basic Design of the Project is confirmed considering the guidelines of Japan's Grant Aid Scheme.

The Government of Japan requests the Government of the recipient country to take whatever measures are necessary to ensure its self-reliance in the implementation of the Project. Such measures must be guaranteed even though they may fall outside of jurisdiction of the organization in the recipient country actually implementing the Project. Therefore, the implementation of the Project is confirmed by all relevant organizations in the recipient country through the Minutes of Discussions.

2) Selection of Consultants

For the smooth implementation of the Study, JICA uses (a) registered consultant firm(s). JICA selects (a) firms(s) based on proposals submitted by interested firms. The firm(s) selected carry

(ies) out the Basic Design Study and write(s) a report, based upon terms of reference set by JICA. The consulting firm(s) used for the Study which is (are) recommended by JICA to the recipient country to also work on the Project(s) implementation after the Exchange of Notes, in order to maintain technical consistency.

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 the facilities, equipment and services (engineering services and transportation of the products, etc.) for economic and social development of the country under the principals in accordance with the relevant laws and regulations of Japan. Grant Aid is not supplied through the donation of materials as such.

2) Exchange of Notes (E/N)

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

3) "The period of the Grant Aid" means the one fiscal year in which the Cabinet approves the Project for. Within the fiscal year, all procedure such as exchanging of the Notes, concluding contracts with (a) consultant firm(s) and (a) contractor(s) and final payment to them must be completed. However in case of delays in delivery, installation or construction due to unforeseen factors such as weather, the period of the Grant Aid can be further extended for a maximum of one fiscal year at most by mutual agreement between the two Governments.

4) Under the Grant Aid, in principle, Japanese products and services including transport or those of the recipient country are to be purchased.

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

However the prime contractors, namely, consulting contracting and procurement firms, are limited to "Japanese nationals". (The term "Japanese nationals" means persons of Japanese nationality or Japanese corporations controlled by persons of Japanese nationality.)

5) Necessity of "Verification"

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

6) Undertakings required of the Government of recipient country

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

a) To secure land necessary for the sites of the Project and to clear, level and reclaim the land prior to commencement of the construction.

b) To provide facilities of the distribution of electricity, water supply and drainage and other incidental facilities in and around the sites.

c) To secure buildings prior to the procurement in case the installation of the equipment.

d) To ensure 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.

g) To bear an advising commission of an authorization to pay (A/P) and payment commissions to the bank, with which the Government of the recipient country opens an account for the Project.

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7) "Proper Use"

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

8) "Re-export"

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

9) Banking Arrangements (B/A)

a) The Government of the recipient country or its designated authority should open an account in the name of the Government of the recipient country in a 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 the Government of the recipient country or its designated authority under the Verified Contracts.

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.

ANNEX- 6

Major Undertakings to be taken by Each Government

NO	Items	To be covered by Grant Aid	To be covered by Yemeni side
1	To secure land		●
2	To clear, level and reclaim the site when needed		●
3	To construct gates and fences in and around the site		●
4	To construct the parking lot	●	
5	To construct roads		
	1) Within the site	●	
	2) Outside the site		●
6	To construct the building	●	
7	To provide facilities for the distribution of electricity, water supply, drainage and other incidental facilities		
	1)Electricity		
	a.The distributing line to the site		●
	b.The drop wiring and internal wiring within the site	●	
	c.The main circuit breaker and transformer	●	
	2)Water Supply		
	a.The city water distribution main to the site		●
	b.The supply system within the site (receiving and/or elevated tanks)	●	
	3)Drainage		
	a.The city drainage main (for storm, sewer and others) to the site		●
	b.The drainage system (for toilet sewer, ordinary waste, storm drainage and others) within the site	●	
	4)Gas Supply		
	a.The city gas main to the site		●
	b.The gas supply system within the site	●	
	5)Telephone System		
	a.The telephone trunk line to the main distribution frame / panel (MDF) of the building		●
	b.The MDF and the extension after the frame / panel	●	
	6)Furniture and Equipment		
	a.General furniture		●
	b.Project equipment	●	
8	To bear the following commissions to a bank of Japan for the banking services based upon the B/A		
	1) Advising commission of A/P		●
	2) Payment commission		●
9	To ensure prompt unloading and customs clearance at the port of disembarkation in recipient country		
	1) Marine(Air) transportation of the products from Japan to the recipient country	●	
	2) Tax exemption and customs clearance of the products at the port of disembarkation		●
	3) Internal transportation from the port of disembarkation to the project site	●	

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10	To accord Japanese nationals whose services may be required in connection with the supply of the products and the services under the verified contract such facilities as may be necessary for their entry into the recipient country and stay therein for the performance of their work		●
11	To exempt Japanese nationals from customs duties, internal taxes and other fiscal levies which may be imposed in the recipient country with respect to the supply of the products and services under the verified contract		●
12	To maintain and use properly and effectively the facilities constructed and equipment provided under the Grant Aid		●
13	To bear all the expenses, other than those to be borne by the Grant Aid, necessary for construction of the facilities as well as for the transportation and installation of the equipment		●

5. Minutes of Discussions (Explanation on Draft Report)

MINUTES OF DISCUSSIONS ON THE BASIC DESIGN STUDY ON THE PROJECT FOR THE EXPANSION OF TUBERCULOSIS CONTROL IN THE SOUTHERN AND EASTERN GOVERNORATES OF THE REPUBLIC OF YEMEN (EXPLANATION OF DRAFT REPORT)

In April, 2000 the Japan International Cooperation Agency (hereinafter referred to as "JICA") dispatched a Basic Design Study Team on the Project for the Expansion of Tuberculosis Control in the Southern and Eastern Governorates of the Republic of Yemen (hereinafter referred to as "the Project") to the Republic of Yemen (hereinafter referred to as "Yemen"), and through discussion, field survey, and technical examination of the results in Japan, JICA prepared a draft report of the Study.

In order to explain and to consult the Yemeni side on the components of the draft report, JICA sent to Yemen the Draft Report Explanation Team (hereinafter referred to as " the Team "), which is headed by Dr. Masashi Suchi, Chief, Project Development and Management Division, Department of International Cooperation, The Research Institute of Tuberculosis, Japan Anti-Tuberculosis Association, from August 14 to August 30, 2000.

As a result of discussions, both parties confirmed the main items described on the attached sheets. The Team will proceed to further works and prepare the Basic Design Study Report.

Sana'a , August 27 , 2000

Dr. Masashi Suchi
Leader
Draft Report Explanation Team
Japan International Cooperation Agency

27/8/00

Mr. Mohamed Gharama Al-Raee
Deputy Minister
for Health Planning and Development
Ministry of Public Health
The Republic of Yemen

Ms. Asma Al-Basha
Assistant Deputy Minister for International Cooperation
Ministry of Planning and Development
The Republic of Yemen

ATTACHMENT

1. Components of the Draft Report

The Government of Yemen agreed and accepted in principle the components of the draft report of the Project dated on August 2000, which was delivered to the Ministry of Public Health and the Ministry of Planing and Development and explained by the Team. The finally agreed lists of facilities and equipment are in ANNEX-1 and ANNEX-2.

2. Japan's Grant Aid Scheme

The Yemeni side understands the Japan's Grant Aid Scheme and the necessary measures to be taken by the Government of Yemen as explained by the Team and described in ANNEX-5 and ANNEX-6 of the Minutes of Discussions signed by both parties on May 3, 2000.

3. Schedule of the Study

JICA will complete the final report in accordance with the confirmed item and send it to the Government of Yemen by December, 2000.

4. Other relevant issues

4-1 The Government of Yemen and the Team confirmed that the Aden Tuberculosis Control Center (hereinafter referred to as "ATCC") would have the following functions;

(a) Training of health personnel for TB control,
(b) Supervision of TB control activities in related health facilities,
(c) Reference for quality assurance of sputum smear examinations and X-ray examinations, and
(d) Operations research.

4-2 The Ministry of Public Health (the Health Planning and Development Sector) shall take the full responsibility of making sure that all the responsibilities of the Government of Yemen in the Project implementation will be fulfilled as scheduled, including securing necessary budgets for the Project.

4-3 A Steering Committee shall be established by the chairmanship of the Planning and Development Sector in the Ministry of Public Health and with representatives of the Ministry of Planning and Development and the Ministry of Finance.

4-4 The Aden Governorate shall take the full responsibility of actually conducting physical works to be born by the Yemeni side, such as connection works of utility lines to ATCC, and establish a Task Force consisting of the Governorate Tuberculosis Coordinator and representatives of the Primary Health Care Department and the Maintenance Department of the Aden Health Office in order to implement such physical works for the Project.

4-5 Before and during the construction work of ATCC, the Government of Yemen shall make necessary budget allocations to the works specified in the APPENDIX-5 "Scope of Works and Cost" of the draft report and complete the works according to "Time schedule for Yemeni Side Works" in the same appendix. The Government of Yemen understands that completing the required works on schedule is essential for smooth implementation of the Project.

4-6 After the handing-over of ATCC, the Government of Yemen shall allocate sufficient budget for the operation of ATCC estimated in the Section 2-2 "Operation and Maintenance Plan" of the draft report and assign necessary personnel with required capabilities to ATCC as explained in the draft report.

4-7 The Government of Yemen strongly requested air-conditioners for rooms in the dormitory. To respond to the request, the Team explained that it would take the request back to Japan and make a further analysis of its necessity although the Team could not guarantee the inclusion of the requested air-conditioners in the Project.

ANNEX- 1

Requested Rooms for Aden TB Control Center

Departments	Rooms
1) ADMINISTRATION DEPT.	1. Director's Office 2. Administration Room 3. Meeting Room 4. Storage 5. Maintenance Room 6. Worker's Room 7. Reception 8. Guard Room
2) EXAMINATION DEPT.	1. Reference Laboratory 2. Preparation Room 3. Sterilization Room 4. Ante Room 5. X-ray Room 6. Dark Room 7. Control Room 8. X-ray Technician's Room
3) SUPERVISING DEPT.	1. Supervisor's Room 2. Statistics Room 3. Laboratory Staff Room
4) TRAINING DEPT.	1. Training Laboratory 2. Training Material Room 3. Lecture Room 4. Seminar Room 5. Library 6. Trainer's Room
5) DORMITORY	1. Trainee's Rooms 2. Multi-purpose Room 3. Kitchen / Dining Room 4. Laundry
6) COMMON SPACE	1. Entrance Hall 2. Corridor, Stairs 3. WC 4. Shower Room 5. Pantry 6. Machine Room

ANNEX-2

Requested Equipment for Aden TB Control Center

Room	Equipment	Qty
1) Administration Dept.		
Director's Office	Desk and Chair, Tables and Chairs	1
Administration Room	Desktop Computer	1
	Printer	1
	Desks and Chairs, Cabinets, Lockers,	1
Meeting Room	Overhead Projector	1
	Screen	1
	Tables and Chairs, White Board	1
Medical Storage	Medical Refrigerator	1
	Desks and Chairs , Shelves, Cabinets	1
Maintenance Room	Maintenance Tools	1
	Work Table and Chairs, Shelves, Cabinet, Locker	1
Worker's Room	Floor Cleaner	1
	Floor Polisher	1
	Tables and Chairs, Shelves, Locker	1
Guard Room	Bed	1
2) Examination Dept.		
Reference Laboratory	Biological Microscope	4
	Safety Cabinet	1
	Bunsen Burner	1
	Autoclave	1
	Reagent Cabinet	1
	Medical Refrigerator	1
	Freezer	1
	Incubator	1
	Centrifuge	1
	Water Distiller	1
	Laboratory Tables and Chairs, Instrument Cabinet	1
Preparation Room	Coagulator	1
	Analytical Balance	2
	Water Bath	1
	Glassware	1
	Reagent Cabinet	1
	Refrigerator	1
	Laboratory Table and Chair, Work Table	1
Sterilization Room	Hot-Air Oven	1
	Pipette Washer	1
	Glassware Dryer	1
	Laboratory Table and Chair, Work Table, Instrument Cabinet	1
X-ray Room	X-ray unit with accessory	1

Rooms	Equipment	Qty
Dark Room	Automatic Film Developer	1
	Dark Room Equipment	1
	Pass Box	1
Control Room	Chair	1
X-ray Technician's Room	Film Illuminator	1
	RP Film Illuminator	1
	Desks and Chairs, Cabinet, Locker	1
3) Supervising Dept.		
Supervisor's Office	Desktop Computer	1
	Printer	1
	Desks and Chairs, Cabinet, Lockers	1
Statistics Room	Desktop Computer	1
	Printer	1
	Tables and Chairs	1
Laboratory Staff Room	Desks and Chairs	1
4) Training Dept.		
Training Laboratory	Biological Microscope	8
	Microscope with Teaching Head	1
	Safety Cabinet	1
	Bunsen Burner	2
	Reagent Cabinet	1
	Autoclave	1
	Laboratory Tables and Chairs, Instrument Cabinet	1
Training Material Room	Copy Machine with sorter	1
	Film Illuminator (movable)	1
	Cabinets	1
Lecture Room	Objective Projector	1
	Screen	1
	Sound System (movable)	1
	TV with Console Box	1
	Video Recorder / Player	1
	Tables and Chairs, Cabinets, White Board	1
Seminar Room	Tables and Chairs, White Board	1
Library	Tables and Chairs, Book Shelves	1
Trainer's Room	Desks and Chairs, Tables and Chairs, Locker, Cabinets	1
5) Dormitory		
Trainee's Rooms	Beds, Tables and Chairs, Lockers	1
Multi-purpose Room	Tables and Chairs	1
Kitchen / Dining Room	Tables and Chairs, Cupboard	1
6) Others		
	4WD Vehicle	1

6. Cost Estimation Borne by the Recipient Country

Appendix 6 Cost Estimation Borne by the Recipient Country

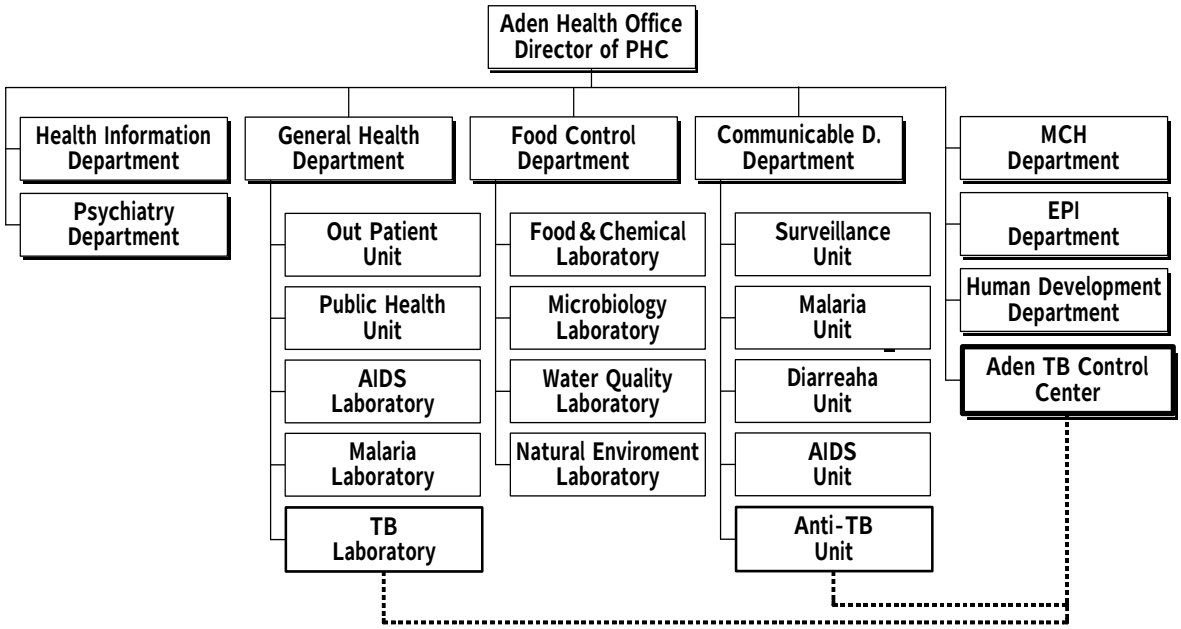
Japanese Side Work	Yemeni Side Work	Cost Estimation
(1) External works	**Approx.**	**2,820,000 YR**
a) Approach road pavement b) Car parking c) Concrete pavement	a) Site clearance b) Shift of aerial power line b) Entrance gate & Fence c) Access road pavement d) Planting, etc.	a) 60,000 YR b) 120,000 YR c) 200,000 YR d) 2,140,000 YR e) 300,000 YR
(2) Building works		
a) ATCC Main Building b) Service Building	a) Shift/Repair of existing TB office and Laboratory.	
(3) Electrical works	**Approx.**	**2,088,000 YR**
a) Power trunk facilities b) Lighting and outlets c) Emergency generator d) Telephone system e) Fire alarm system	a) Electricity Main connection b) Telephone line connection	a) 2,000,000 YR b) 88,000 YR
(4) Water Supply & Drainage	**Approx.**	**34,000 YR**
a) Water supply system b) Sewage system c) Fire-extinguisher	a) Water supply connection b) Sewage pipe connection	a) 24,000 YR b) 10,000 YR
(5) General Furniture	**Approx.**	**700,000 YR**
a) Training furniture b) Dormitory furniture c) Basic office furniture	a) Additional office furniture, curtain and utensils, etc b) Amenities for dormitory	a) 600,000 YR b) 100,000 YR
(6) Others	**Approx.**	**946,000 YR**
	a) Application / permission for building b) Smooth custom clearance, tax exemptions and prompt internal transportation for the imported materials and equipment. c) Commissions for Banking Arrangement (B/A) and Authorization to Pay (A/P) d) Issuance of Visa, Tax exemption and necessary preferential treatment for the Japanese staff. e) Smooth entry/re-entry and departure for the Japanese staff. f) All expenses, other than those to be borne by the Japan's Grant Aid within the scope of the Project.	a) by MOH, Aden Gov. appx. 140,000 YR b) by MOH, Aden Gov. c) by MOH, MOPD (appx. 0.1% of E/N amount: 806,000YR) d) by MOH, MOPD, and Aden Gov. e) by MOH, MOPD, and Aden Gov. f) by MOH, MOPD, and Aden Gov.
Total Cost for Extent of Works:	**Approx.**	**6,588,000 YR**
Operation & Maintenance Cost:	**Approx.**	**Annually 4,259,000 YR**
	a) Management and operation cost (excluding personnel expenses) b) Maintenance cost	a) 1,450,000 YR b) 2,809,000 YR by Aden Gov.

Time Schedule for Yemeni Side Works **(YR)**

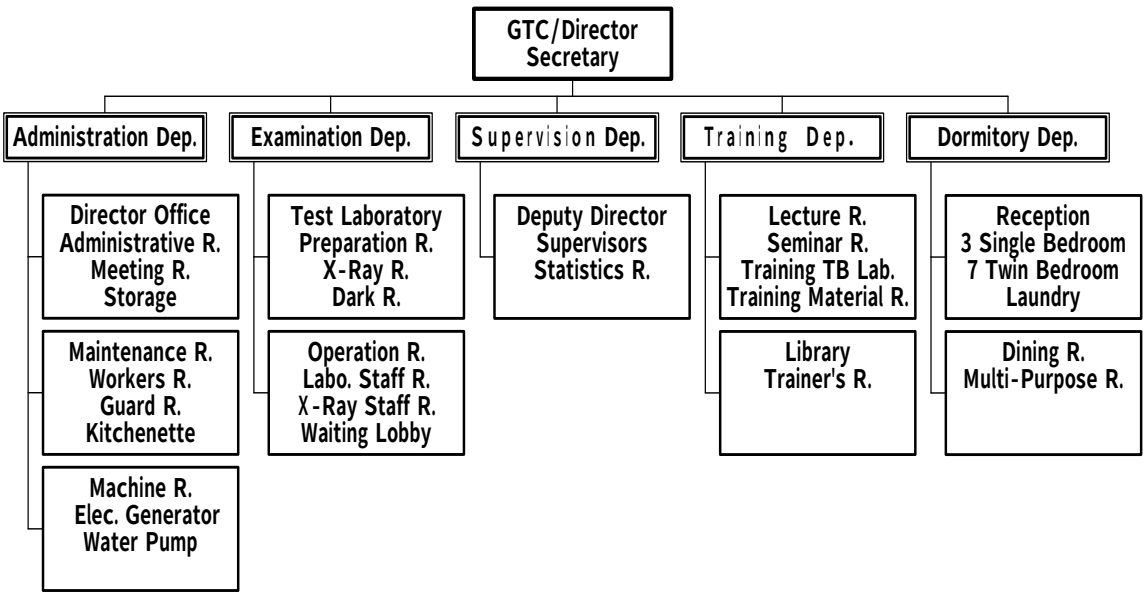
Fiscal Year	2000	2001	2002
(1) Construction Related Cost			
1) Site clearance	60,000	-	-
2) Reroute of existing electrical line	120,000	-	-
3) Construction of new gate	200,000	-	-
4) Connection of approach road	-	2,140,000	-
5) Gardening	-	-	300,000
(2) Infrastructure connection cost			
1) Power connection	-	2,000,000	-
2) Telephone connection	-	88,000	-
3) Water connection	-	24,000	-
4) Sewerage connection	-	10,000	-
(3) Banking arrangement	806,000	-	-
(4) Building permit	140,000	-	-
(5) Furniture and office equipment	-	-	700,000
Total	1,326,000	4,262,000	1,000,000

7. Organization Chart

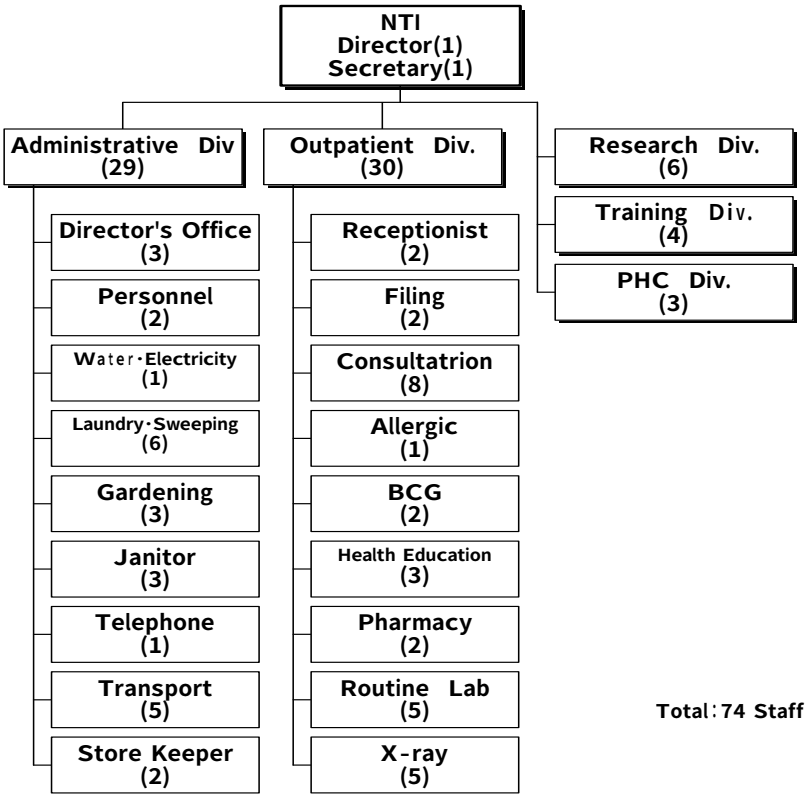
Appendix 7 Organization Charts



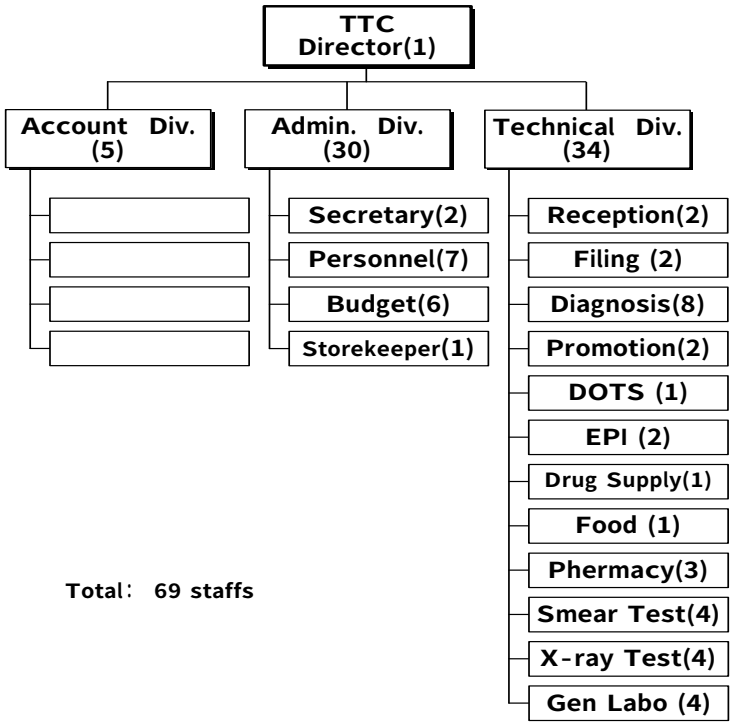
Aden Health Office Directorate of Primary Health Care PHC Office



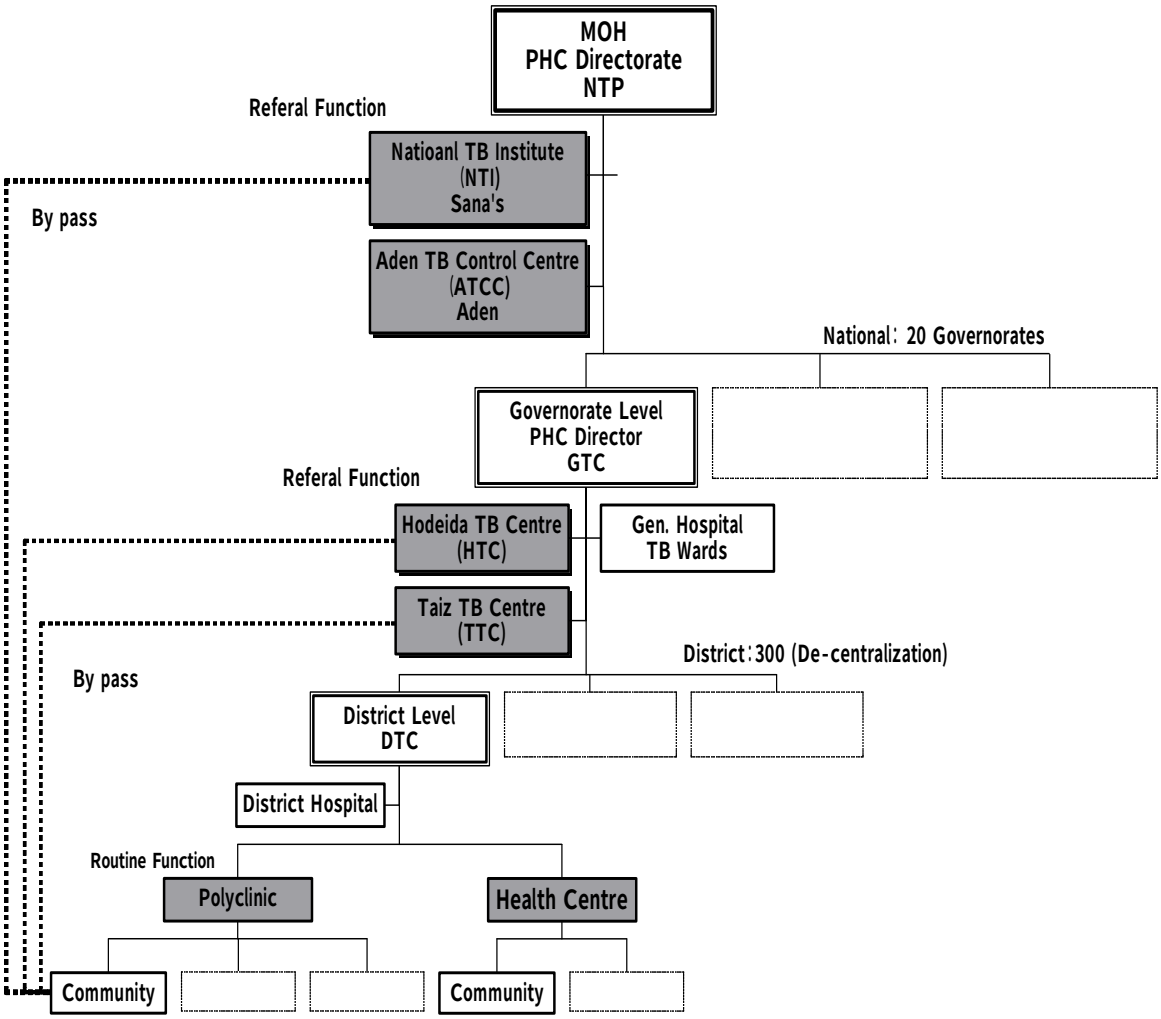
Aden TB Control Center



National Tuberculosis Institute (NTI)



Taiz TB Centre (TTC)



Yemen TB Control Programme

8. Staff Allocation Plan

Appendix 8 Staff Allocation Plan

A: Technical Staff Allocation

Position	Name	Age	Specialty	Existing Post/Job	Educational/Training Background
Director	Dr. Osama A.R. Badeer		General Practitioner	GTC from 1992, PHC	GP Moscow(University of No.3) 1988
Dpty. Director	Dr. Adul Aziz Adam	30	General Practitioner	Asst. GTC, PHC	GP, Aden Medical College, 1998
Pharmacist	Ms. Oiam Alsbani	32	Pharmacist	Al Gamuhuria Hosp.	Amin Nasher Institute,
	Mr. Nasher Ahmed	35	Pharmacist	Al Gamuhuria Hosp.	Amin Nasher Institute,
Labo Technician	Mr. Ahmad Ali	35	Labo Technician	Al Gamuhuria Hosp.	Japan, 1994
	Mr.Gamal Saheh	38	Labo Technician	Al Gamuhuria Hosp	Japan, 1992
	Mr. Fouad Hadad	48	Labo Superintendent	PHC	Master Degree, 1985
	Mr. Nasser Saleh	40	Labo Technician	PHC	Aden Medical College,
X-ray Technician	Mr. Nbas Ali	50	X-ray Technician	Al Gamhuria Hosp.	Amin Nasher Institute
	Mr. Hani Fadel	34	X-ray Technician	Daar Saad Polyclinic	Amin Nasher Institute
Statistician	Mr. Ali Zin Ali	54	Statistician	Al skanderia 2000	
	Dr. Mohamed Taher	32	Physician	Physician-NTP	Aden Medical College
Supervisor	Mr. Nageb Nasser	49	Medical Assistant	PHC	Amin Nasher Institute, 1990
	Mr. Fahmi Mohmed	35	Medical Assistant	PHC	Amin Nasher Institute,
	Mr. Safiah Mohamad	60	Medical Assistant	PHC	Amin Nasher Institute,
Trainer	Mr.Nasser A. Saleh	38	Medical Assistant	Amin Nasher Institute	Amin Nasher Institute,
	Mr. Ali Omer Alhed	42	Medical Assistant	DTC, Al Mansura	Amin Nasher Institute
	Mr. Mohamed A. Rhman	48	Medical Assistant	DTC, Al Medan	Amin Nasher Institute
	Mr. Kaled Seef Mohamed	40	Medical Assistant	DTC, Al Bureiqua	Amin Nasher Institute
Others	Mr. Sadek Mohamed Ali		(Dormitory Assistant)	PHC	
Total					

B: General Staff Allocation Plan

Position	Name	Age	Specialty	Existing Post	Education / Training Background
Accountant	Mr. Abdul Elah	33		Accountant, PHC	
General Admin.	Mr. Fatehe Mohamad	42		Administrator, PHC	
	Mr. Naser Aziz	40		PHC	
	Mr. Galeb Abdulah			Reception, PHC	
Secretary					
Maintenance					
Transport	Mr. Ahmad Awad				
	Mr. Abdulah Mukbel				
Guard	Mr. Borhan Mohamed	50		PHC	
	Mr. Kahlid Mohamed	55		PHC	
Sweeper					
Janitor					
Others	Mr. Nagat Ahmed			Clerk, PHC	
Total					

C: Exiting Maintenance Staff in PHC Office

Position	Name	Age	Specialty / Existing Post	Educational/Training Background
Building	Mr. Hassan Mahamed Saleh	35	Building	
	Mr. Wael Ahmed Abdoh	22	Mechanical	Vocational Training Certificate
Water/	Mr. Adnan Tabet Mohamed	44	Water and Sanitation	Junior High School
	Mr. Mohamed Noor Aden	38	Water and Sanitation	
Electricity	Mr. Raaid Ismael	40	Electrician	
	Mr. Saad Mohamed Ali	22	Electrician	Vocational Training Certificate

9. Planned Training Schedule at NTI

Apendix 9 Planned Traaining Schedule at NTI

Curriculum: I District TB Coordinator (DTC)

CR: Classroom, LB: Laboratory

Day-1(Sat)			
9:00	10:00	Registration and Opening	CR
10:00	10:30	Introduction	CR
10:30	11:00	Break	
11:00	13:30	Treatment Administration	CR

Day-2(Sun)			
8:30	10:30	Treatment Administration	CR
10:30	11:00	Break	
11:00	13:30	Patients Resistration	CR

Day-3(Mon)			
8:30	9:30	Patients Registration	CR
9:30	10:30	Recognizing of Suspected cases	CR
10:30	11:00	Break	
11:00	13:30	Monitoring of treatment	CR

Day-4(Tue)			
8:30	10:30	Case Finding	CR
10:30	11:00	Break	
11:00	12:00	Case Finding	CR
12:00	13:30	Treatment Outcomes	CR

Day-5(Wed)			
8:30	10:30	Treatrment Outcomes	CR
10:30	11:00	Break	
11:00	13:30	Insuring of Regular Drug Spply	CR

Day-6(Thu)			
8:30	10:00	Laboratory Services & Supervision	LB
10:00	10:30	Break	
10:30	12:00	Visit to a Health Facility	Site
12:00	12:30	Closing	

Curriculum: II Laboratory Technician (LT)

CR: Clasroom, LB: Laboratory

Day-1(Sat)			
8:30	10:30	Opening - The importance of TB lab.	CR
10:30	11:00	Break time	
11:00	14:00	Lecture about how to receive & prepare	LB

Day-2(Sun)			
8:30	10:30	Practice about sputum sample	LB
10:30	11:00	Break time	
11:00	14:00	Lecture and Practice about stain	LB

Day-3(Mon)			
8:30	10:30	Practice about sputum sample	LB
10:30	11:00	Break time	
11:00	14:00	Microscopical examination for sputum	LB

Day-4(Tue)			
8:30	10:30	Lecture about how to avoid mistakes	CR
10:30	11:00	Break time	
11:00	14:00	Preparation & microscopical examination	LB

Day-5(Wed)			
8:30	10:30	Preparation & Microscopical examination	LB
10:30	11:00	Break time	
11:00	14:00	Preparation & Microscopical examination	LB

Day-6(Thu)			
8:30	10:00	Lecture about how to perform laboratory	CR
10:00	10:30	Break time	
10:30	14:00	* Theoretical and practical examination. * Microscopical examination of ready * Providing of the trainees with the	CR/LB

Curriculum: III PHC Health Workers

Day-1(Sat) CR: Classroom, LB: Laboratory

8:30	9:00	Opening	CR
9:00	9:30	Intrpduction on TB & DOTS strategy	CR
9:30	10:30	Filling Treatment Card (Group practice)	CR
10:30	11:00	Tea Break	
11:00	13:00	Administering Treatment (Group practice)	CR

Day-2(Sun)

8:30	10:30	Registering cases (Group practice)	CR
10:30	11:00	Tea Break	
11:00	12:00	Health Education	CR
12:00	13:00	Visit to lab. Section	LB

Day-3(Mon)

8:30	9:30	Visit to DOTS room in the Center	LB
9:30	10:30	Reporting (Group Practice)	CR
10:30	11:00	Tea Break	
11:00	12:30	Reporting (Group Practice)	CR
12:30	13:30	Training Evaluation & Closing	CR

Curriculum: IV Laboratory Quality Control Workshop

Day-1(Sat)

8:30	9:00	Opening / Orientation	CR
9:00	9:45	National Report	CR
9:45	11:15	Report of Governorate Laboratory	CR
11:15	11:30	Tea	
11:30	13:00	Report of Governorat (3)	CR
13:00	14:00	Lunch	
14:00	15:00	Report (2)	CR
15:00	16:30	Analysis of problem related to supervision	CR

* Presentation of each Governorate: 20 mim plus 10 min discussion.

Day-2(Sun)

8:30	9:30	Analysis of problems, related to	CR
9:30	11:15	Technique of supervision and QC	CR
11:15	11:30	Tea	
11:30	13:00	Relationships of lab with other section and	CR
13:00	14:00	Lunch	
14:00	16:00	Recording and reporting system	CR

Day-3(Mon)

8:30	10:00	Content of supervision check-list	CR
10:00	11:00	Practicing collection of data from lab	CR
11:00	11:15	Tea	
11:15	12:30	Case study with group discussion	CR
12:30	13:00	Action Plan and Evaluation of workshop	CR

10. ATTC Courses and Meeting Plan 2001

Appendix 10 ATTCCourses and Meeting Plan

A. DOT Expansion Plan in the Southern and Eastern Governorates.

DOTS Staff: Basic Requirement

Governorate	Districts	DOTS staff				S.Total	Pop/Ds (Y2005)
		Doctors	DTCs	Lab.T.	PH Wks.		
1 Aden	8	8	8	8	16	40	78,125
2 Abyan	10	10	10	10	20	50	53,800
3 Dhalea	10	10	10	10	20	50	
4 Lahj	15	15	15	15	30	75	48,800
5 Shabwa	16	16	16	16	32	80	45,875
6 Mahra	8	8	8	8	16	40	8,750
7 Hadramout	29	29	29	29	58	145	32,241
8 Baidha	12	12	12	12	24	60	59,917
Total	108	108	108	108	216	540	40,306

Each district will have one Doctor, one DTC, one Lab.Ts. and two PHC Workers.

New Training - 2000

Governorate	Districts	DOTS staff				S.Total
		Doctors	DTCs	Lab.T.	PH Wks.	
1 Aden	8	5	5	5	10	25
2 Abyan	10	3	3	3	6	15
3 Dhalea	10	3	3	3	6	15
4 Lahj	15	0	0	0	0	0
5 Shabwa	16	13	13	13	26	65
6 Mahra	8	6	6	6	12	30
7 Hadramout	29	23	23	23	46	115
8 Baidha	12	6	6	6	12	30
S.Total	108	59	59	59	118	295

New Training - 2001

Governorate	Districts	DOTS staff				S.Total
		Doctors	DTCs	Lab.T.	PHC Wks.	
1 Aden	8	3	3	3	6	15
2 Abyan	10	7	7	7	14	35
3 Dhalea	10	7	7	7	14	35
4 Lahj	15	15	15	15	30	75
5 Shabwa	16	3	3	3	6	15
6 Mahra	8	2	2	2	4	10
7 Hadramout	29	6	6	6	12	30
8 Baidha	12	6	6	6	12	30
S.Total (2001)		49	49	49	98	245
S.Total (2000)		59	59	59	118	295
Total	108	108	108	108	216	540

Annual Refresh Training

Governorate	Districts	Doctors	DTCs	Lab.T.	PHC Wks.	S.Total
1 Aden	8	3	3	3	6	15
2 Abyan	10	4	4	4	8	20
3 Dhalea	10	3	3	3	6	15
4 Lahj	15	5	5	5	10	25
5 Shabwa	16	2	2	2	4	10
6 Mahra	8	2	2	2	4	10
7 Hadramout	29	3	3	3	6	15
8 Baidha	12	3	3	3	6	15
Taiz	18	5	5	5	10	25
Ibb	18	5	5	5	10	25
Total	144	35	35	35	70	175

B. ADEN TB CONTROL CENTER: Training and Meeting Plan from 2001

	Course / Meeting	Persons (prsns)	Duration (days)	No./years (times)	T. Person (prsns)	Annual Schedule												Domtry Rm Usage (Day*Prsn)
						Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
	DOTS Staff New Trainings																	
1	New Doctors	12	6	4	48		○			○			○			○		288
2	New District TB Cordinaters	12	6	4	48			○			○			○			○	288
3	New Labo. Technicians	6	6	6	36	○		○		○		○		○		○		216
4	New PH Workers	14	3	6	64	○		○		○		○		○		○		252
	DOTS Staff Refresh Trainings																	
5	Refresh for Doctorts	12	2	4	48		○			○			○			○		96
6	Refresh for District TB Cordinaters	12	2	4	48			○			○			○			○	96
7	Refresh for Labo. Technician	6	2	4	24		○			○			○			○		48
8	Refresh for PH Workers	14	2	4	56	○			○			○			○			112
	PHC Related Trainings																	
9	Village Health Workers	20	2	4	80	○			○			○			○			160
10	Community Leaders	20	1	4	80		○			○			○			○		-
11	Health Volunteerss	20	1	4	80			○			○			○			○	-
12	Others: Communicable Disease Contro	(apx. 20)	3	2	(apx. 40)				○						○			(apx. 120)
13	Reproductivfe Health	(apx. 20)	3	2	(apx. 40)				○						○			(apx. 120)
14	Health Education	(apx. 18)	3	2	(apx. 36)				○						○			(apx. 108)
	TB Meeting s																	
15	Governorate TB Control (GTC) Meetin	25	3	1	-	○												75
16	District TB Control (DTC) Meeting	30	2	4	-	○			○			○			○			240
17	YATA Regional Meetings	20	2	2	-		○						○					80
18	Internal Weekly Meeting	10	1	48	-	○	○	○	○	○	○	○	○	○	○	○	○	-
19	PHC Monthly Meeting	20	1	12	-	○		○		○		○		○		○		-
20																		

Annual Room Usage (Day*Perso 1951

No. of Districts = Aden 8, Lahji 15, Abyan 10, Shabwa 16, Baida 12, Hadramaut 29, Mahra 9, Dhala 9 = Total 108 Districts 1951 / 14 beds = 139days / 260 = 53%