

資料5 討議議事録 (M/D)

(1) 現地調査時 M/D

MINUTES OF DISCUSSIONS  
ON THE BASIC DESIGN STUDY  
ON THE PROJECT FOR ZANZIBAR URBAN WATER SUPPLY DEVELOPMENT  
IN THE UNITED REPUBLIC OF TANZANIA

Based on the results of the Preparatory Study which was conducted in November 2002, the Government of Japan decided to conduct a Basic Design Study (hereinafter referred to as "the Study") on THE PROJECT FOR ZANZIBAR URBAN WATER SUPPLY DEVELOPMENT (hereinafter referred to as "the Project") and entrusted the study to the Japan International Cooperation Agency (hereinafter referred to as "JICA").

JICA sent to the United Republic of Tanzania (hereinafter referred to as "Tanzania") the Basic Design Study Team (hereinafter referred to as "the Team"), which is headed by Yoshio Fukuda, Team Director, Water and Sanitation Team, Project Management Group I, Grant Aid Management Department, JICA, and is scheduled to stay in the country from October 24 to November 25, 2004.

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

In the course of discussions and field survey, 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.

Zanzibar, October 28, 2004

福田義夫

Mr. Yoshio Fukuda  
Leader  
Basic Design Study Team  
Japan International Cooperation Agency(JICA)  
Japan

Witness

Mapunjo

Ms. Joyce K. G. Mapunjo  
for Permanent Secretary  
Ministry of Finance  
The United Republic of Tanzania



Mr. Yasser D. Costa  
Principal Secretary  
Ministry of Water, Construction, Energy and Lands  
Zanzibar  
The United Republic of Tanzania

Mr. Julian Raphael  
Principal Secretary  
Ministry of Finance and Economic Affairs  
Zanzibar  
The United Republic of Tanzania

## ATTACHMENT

### 1. Objective of the Project

The objective of the Project is to improve water supply situations in the urban area in Unguja Island in Zanzibar in order to upgrade living standards of inhabitants, through the rehabilitation and expansion of the water supply facilities.

### 2. Project Site

The Project site is Zanzibar Urban Area in Unguja Island of Zanzibar shown in Annex- I.

### 3. Responsible and Implementing Agency

The Responsible Agency is the Ministry of Water Construction Energy and Lands (MWCEL) in Zanzibar and the Implementing Agency is the Department of Water Development (DWD). In case Zanzibar Water Supply Authority (ZWSA) will be established after the approval of bill by the House of Representatives, then ZWSA will be the implementing Agency.

### 4. Items requested by the Tanzanian side

After discussions with the Team, the items described in Annex-II and III were finally requested by the Tanzanian side. JICA will assess the appropriateness of the request and will recommend to the Government of Japan for approval.

### 5. Japan's Grant Aid Scheme

- 5-1. The Tanzanian side understood the Japan's Grant Aid Scheme explained by the Team and described in Annex-IV.
- 5-2. The Tanzanian side will take the necessary measures as described in Annex-V, for smooth implementation of the Project, as a condition for the Japanese Grant Aid to be implemented.

### 6. Schedule of the Study

- 6-1. The consultants will proceed to further studies in Zanzibar until November 25, 2004.
- 6-2. JICA will prepare the draft report in English and dispatch a mission in order to explain its contents in February 2005.
- 6-3. In case that the contents of the report are accepted in principle by the Tanzanian side, JICA will complete the final report and send it to the Tanzanian government by May 2005.

### 7. Other relevant issues

- 7-1. The Tanzanian side explained reforms in water sector as follows:
  - (1) The House of Representatives of the Zanzibar Government approved "Water Policy on Zanzibar" in February 2004 that ensure to reform existing administration and management of water supply including reintroduction of water tariff collection.
  - (2) The bills for water Acts to support this policy will be submitted to the House of Representatives for approval in January 2005.
  - (3) After its approval, Zanzibar Water Supply Authority will be established. The water tariff collection will commence specifically to areas with water.

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The Japanese side explained that these reforms including water tariff collection would be a crucial issue when the Japanese Government decides implementation of the Project, and strongly requested the Tanzanian side not only provide information of the progress timely but also take necessary measures to approve and enforce the related acts in water sector.

- 7-2. The Tanzanian side requested laboratory equipment for water quality control, and workshop equipment including pick-up truck(s) for maintenance of the facilities shown in Annex-III. However the Tanzanian side understood that items included to the Project will be examined their appropriateness and necessity in the Study.
- 7-3. The Tanzanian side strongly requested technical assistance with necessary software and equipment for the billing and tariff system for the Zanzibar Water Supply Authority in order to ensure stable and safe water supply. The Japanese side explained that necessary technical assistance will be examined in the Study and some technical assistance as soft component program will be included in the Project. The Tanzanian side promised that the action plan including setting up tariff system will be prepared in February 2005.
- 7-4. The Tanzanian side explained that KfW, Germany has just started preparation of tender documents of the project for rehabilitation and expansion of sewerage, drainage and solid waste disposal system in the urban area of Zanzibar Municipality.  
The Tanzanian side explained that World Bank has done the appraisal of the Integrated Infrastructure Development program for the Zanzibar Municipality. The program will include town roads and storm water drainage.
- 7-5. Both sides agreed that the Japanese side will bear new construction and replacement of necessary main transmission and distribution pipe line in the Project and the Tanzanian side will bear installation of other distribution pipe line, connection and service pipe line from main distribution pipe line.
- 7-6. Both sides agreed that Zanzibari water quality standard will be applied to assess the water quality of newly developed groundwater wells.
- 7-7. The Japanese side stated that topographic survey, electric resistivity survey and soil investigation which are scheduled in the Study contracting with local contractor should be exempted from VAT. The Tanzania side asked the Japanese side to submit letter for exemption and agreed that the Tanzanian side will take necessary measures for VAT exemption.
- 7-8. The Tanzanian side promised to clear construction site in the Welezo Station before the commencement of the Project.

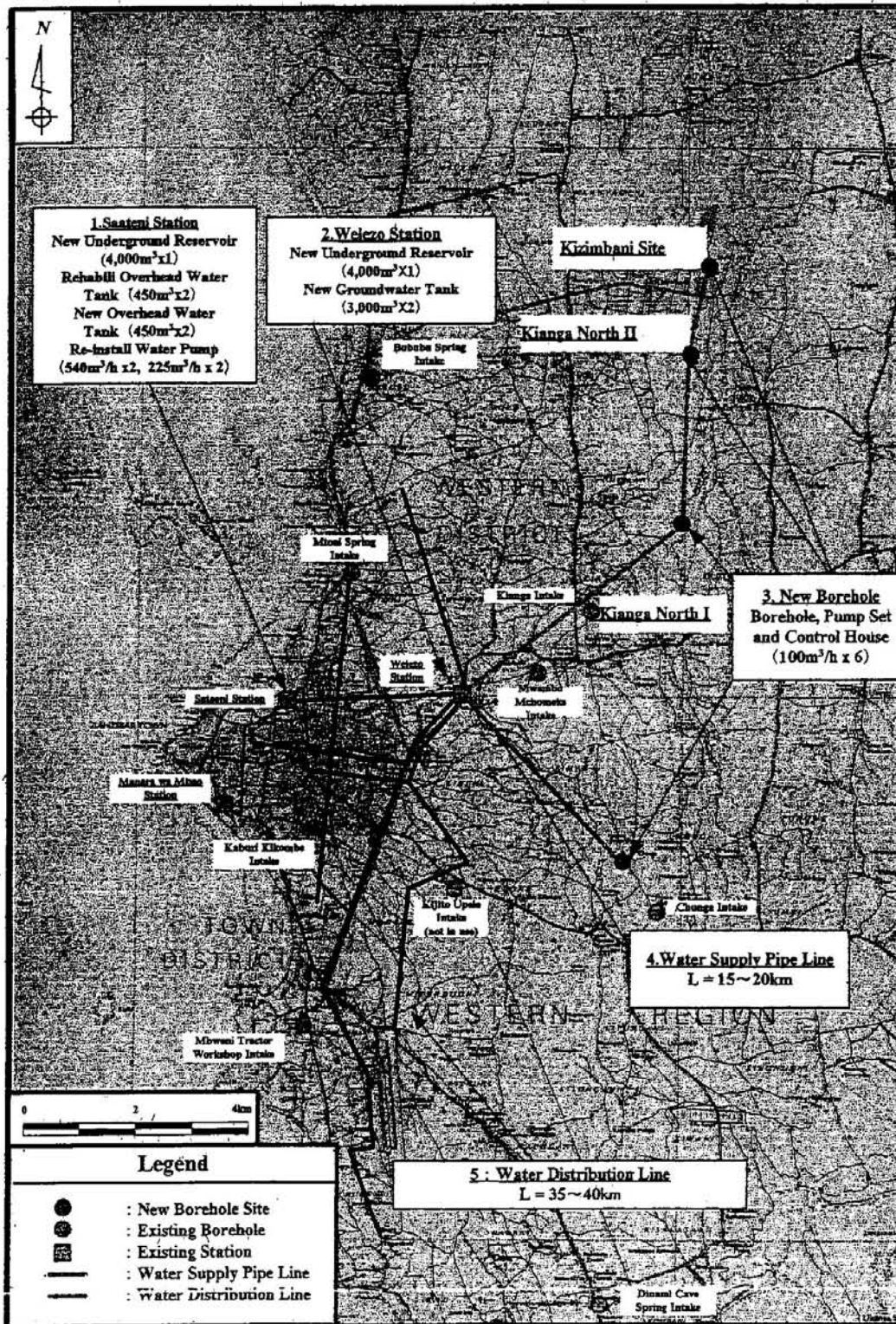
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ANNEX - I



Study Area

Zarzibar Urban Water Supply Development

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## Components of the Project requested by the Government of Zanzibar

Items		Qty
1) Saateni Station		
Construction of Underground Reservoir	4,000m <sup>3</sup>	1
Re-Construction of Overhead Water Tank	450m <sup>3</sup>	2
Construction of Overhead Water Tank	450m <sup>3</sup>	2
Re-installation of Centrifugal Water Pump Set	540m <sup>3</sup> /h	2
Re-installation of Centrifugal Water Pump Set	225m <sup>3</sup> /h	2
Construction of Chlorination system		1
2) Welezo Station		
Construction of Underground Water Reservoir	4,000m <sup>3</sup>	1
Construction of Ground Water Tank	3,000m <sup>3</sup>	2
Construction of Chlorination system		1
3) New Borehole		
Borehole drilling, Installation of Pump set and Construction	100m <sup>3</sup> /h	6
Control House and Fencing Work		
4) Water Supply Pipe Line		
New Borehole site to Welezo Station		20km
5) Water Distribution Line		
From Saateni and Welezo Station to Zanzibar Town		35km

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Water Laboratory Equipment requested by the Tanzanian side

1. Automatic Absorption Spectrophotometer with reagents for water Analysis
2. pH meter
3. Turbidity meter
4. Distiller-Automatic Water Stills (for distilled water)
5. Titration Cartridge with full reagents for Hardness, Calcium, Alkalinity, Carbon dioxide, Chloride
6. Media for Fecal Coliform and for total Coliform
7. Reagent and sample cell for papua Lab-Photo meter

Workshop equipment requested by the Tanzanian side

1. Hack saw machine
2. Presser machine
3. Milling machine
4. Surface grinder machine
5. Block re boring machine
6. Tools for shaping
7. Workshop based mobile crane
8. Taps of dies
9. Forging accessories
10. Reamer
11. Drill bit
12. Tool box
13. Pipe wrenches
14. Welding machines
15. Welding equipment
16. Bench vices
17. Bending machine
18. Hydraulic bending machine for pipes
19. Bench shears
20. Heat treatment equipment
21. Blow lamps
22. Hydraulic hammer
23. Turning lathe
24. Horizontal grinding machine
25. Pick-up truck(s)









## 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 (The Notes exchanged between the Governments of Japan

Implementation 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 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 (hereinafter referred to as "the Study"), conducted by JICA on a requested project (hereinafter 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:






- 1) Confirmation of the background, objectives, and benefits of the Project and also institutional capacity of agencies concerned of the recipient country necessary for the Project's implementation.
- 2) Evaluation of the appropriateness of the Project to be implemented under the Grant Aid Scheme from a technical, social and economic point of view.
- 3) Confirmation of items agreed on by both parties concerning the basic concept of the Project.
- 4) Preparation of a basic design of the Project.
- 5) Estimation of 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 the jurisdiction of the organization in the recipient country actually implementing the Project. Therefore, the implementation of the Project is confirmed by all relevant organizations of the recipient country through the Minutes of Discussions.

(2) Selection of Consultants

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

The consulting firm(s) used for the Study is (are) recommended by JICA to the recipient country to also work in the Project's implementation after the Exchange of Notes, in order to maintain technical consistency.

3. Japan's Grant Aid Scheme

(1) Grant Aid

The Grant Aid Program provides a recipient country with non-reimbursable funds to procure the facilities, equipment and services (engineering services and transportation of the products, etc.) for economic and social development of the country under principles in accordance with the relevant laws and regulations of Japan. Grant Aid is not supplied through the donation of materials as such.

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(2) Exchange of Notes (E/N)

Japan's Grant Aid is extended in accordance with the Notes exchanged by the 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" means the one fiscal year which the Cabinet approves the project for. Within the fiscal year, all procedures such as exchanging of the Notes, concluding contracts with (a) consulting 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 by mutual agreement between the two Governments.

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

When the two Governments deem it necessary, the Grant Aid may be used for the purchase of the products or services of a 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 the 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 of Japanese taxpayers.

(6) Undertakings required to the Government of the Recipient Country

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

- 1) To secure a lot of land necessary for the sites of the Project, and to clear, level and reclaim the land prior to commencement of the construction.
- 2) To provide facilities for the distribution of electricity, water supply and drainage and other incidental facilities in and around the site;
- 3) To secure buildings prior to the procurement in case the installation of the equipment.



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- 4) To ensure all expenses and prompt execution for unloading, customs clearance at port of disembarkation and internal transportation of the products purchased under the Grant Aid.
  - 5) 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.
  - 6) To accord Japanese nationals whose services may be required in connection with the supply of the products and services under the Verified contracts, such facilities as may be necessary for their entry into the recipient country and stay therein for the performance of their work.
  
  - (7) Proper Use  
The recipient country is required to maintain and use the facilities constructed and equipment purchased under the Grant Aid properly and effectively and to assign staff necessary for this operation and maintenance 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 Arrangement (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.

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## Major Undertakings to be taken by Each Government

NO	Items	To be covered by Grant Aid	To be covered by Recipient 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		•
j.	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	(•)	(•)
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		•

Remarks B/A: Banking Arrangement, A/P: Authorization to Pay

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(2)概要説明時 M/D


MINUTES OF DISCUSSIONS  
ON THE BASIC DESIGN STUDY ON THE PROJECT  
FOR ZANZIBAR URBAN WATER SUPPLY DEVELOPMENT  
IN THE UNITED REPUBLIC OF TANZANIA  
(EXPLANATION ON DRAFT REPORT)

In October 2004, Japan International Cooperation Agency (hereinafter referred to as "JICA") dispatched the Basic Design Study Team on THE PROJECT FOR ZANZIBAR URBAN WATER SUPPLY DEVELOPMENT (hereinafter referred to as "the Project") to the United Republic of Tanzania (hereinafter referred to as "Tanzania"), and through discussions, field survey in Tanzania and technical examination of the results in Japan, JICA prepared a draft report of the study.

In order to explain and to consult with Tanzania on the components of the draft report, JICA sent to Tanzania the Draft Report Explanation Team (hereinafter referred to as "the Team"), which is headed by Mr. Toshihiro OBATA, Resident Representative of JICA in Tanzania, from March 8 to March 20, 2005.

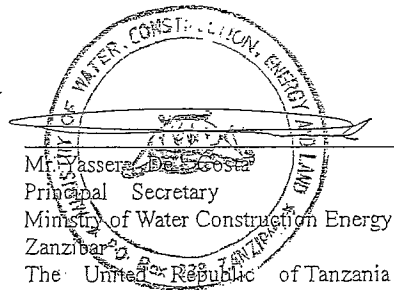
As a result of discussions, both parties have confirmed the main items of the Project as described on the attached sheets.

Zanzibar, March 17, 2005

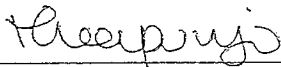


Mr. Toshihiro OBATA  
Leader  
Basic Design Study Team  
Japan International Cooperation Agency (JICA)  
Japan

Witness

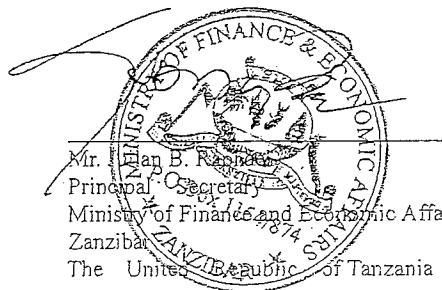


Mr. Yasser De Costa  
Principal Secretary  
Ministry of Water Construction Energy and Lands  
Zanzibar  
The United Republic of Tanzania

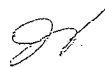


Ms. Joyce K.G. Mapunjo  
for Permanent Secretary  
Ministry of Finance  
The United Republic of Tanzania

PERMANENT SECRETARY  
THE TREASURY



Mr. Alan B. Rashed  
Principal Secretary  
Ministry of Finance and Economic Affairs  
Zanzibar  
The United Republic of Tanzania



## ATTACHMENT

### 1. Components of the Draft Report

The Tanzanian side agreed and accepted in principle the components of the draft report explained by the Team. After discussions with the Team, the Tanzanian side finally confirmed the items and components which will be procured and constructed under the Project as described in Annex I when the Government of Japan finally decides to implement the Project.

### 2. Minutes of Discussions (October 28, 2004)

Both sides read and confirmed again all the contents of the previous Minutes of Discussions signed by both parties on October 28, 2004.

### 3. Japan's Grant Aid Scheme

The Tanzanian side has understood Japan's Grant Aid Scheme and the necessary measures to be taken by the Government of Tanzania as explained by the Team and described in Annex-IV and Annex-V of the Minutes of Discussions signed by both parties on October 28, 2004.

### 4. Schedule of the Study

JICA will complete the final report in accordance with the confirmed items and send it to Tanzania around June 2005.

### 5. Other Relevant Issues

#### (1) Reforms in water sector including water tariff collection

Both sides confirmed that the reforms in water sector including water tariff collection are vital for the sustainability of the Project. The Team stated that the introduction of tariff collection shall be prerequisite for the Government of Japan to implement the Project. Therefore the Team strongly requested the Tanzanian side to take immediate and necessary measures for the approval and enforcement of the Water Act so as to realize the Zanzibar National Water Policy. However, since the Bill for an Act to Provide for Water Management and Development has not gone through the final Government approval stage, the Tanzanian side proposed to allocate sufficient funds from 2005/06 budget and open a special account to deposit the funds on monthly basis during the transition period until the established Zanzibar Water Supply Authority is in full operation. The account will fully and sufficiently serve for operation, maintenance and management aspect of the water supply in the Project area. The Team took note of the proposal and promised to convey the same to the Government of Japan. The Team also requested the Tanzanian side to submit the action plan to the Japanese side in the near future.

#### (2) Obligation and budgetary arrangement of the Tanzanian side

The Tanzanian side agreed to be responsible for the items and make necessary budgetary arrangement to cover the required items as shown in Annex-II for the smooth implementation of the Project.



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## The Proposed Components of the Project

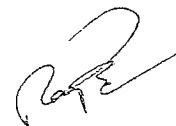
<u>Items</u>		<u>Q'ty</u>
<b>1. Construction</b>		
1) Saateni Station		
Renewal of Transmission Pumps	400m <sup>3</sup> /hr	2
Renewal of Transmission Pumps	200m <sup>3</sup> /hr	2
Renewal of Disinfection Facility		1
2) Welezo Station		
Construction of Reservoirs	4,000m <sup>3</sup>	2
Construction of Disinfection Facility		1
3) Dole Station		
Construction of Reservoir	1,200m <sup>3</sup>	1
Construction of Disinfection Facility		1
4) Kinuni Station		
Construction of Reservoir	2,700m <sup>3</sup>	1
Construction of Disinfection Facility		1
5) New Borehole		
Borehole drilling, installation of Pump set and		
Construction of Control House	60m <sup>3</sup> /hr	11
6) Pipelines		
Transmission pipes		Approx.24km
Distribution pipes		Approx.20km
<b>2. Equipment procurement</b>		
1) Pickup trucks		4
<b>3. Soft component programme</b>		
1) Engineering training		
2) Support for organizational strengthening (Management training)		
3) Support for public education program		

Annex-II

Obligation and Budgetary Arrangement of the Tanzanian Side

To achieve the objectives of the Project and on the basis of the scope of works covered by the Government of Japan, the costs for the following items shall be undertaken by the Tanzanian side.

- 1) To secure the proposed project sites for reservoirs, new boreholes and transmission/distribution pipelines.
- 2) To construct gates and fences in and around the proposed project sites for reservoirs and new boreholes.
- 3) To provide the electrical distribution line to the proposed new borehole sites.
- 4) Disposal of replaced existing pumps in Saateni Station.



## TECHNICAL NOTE

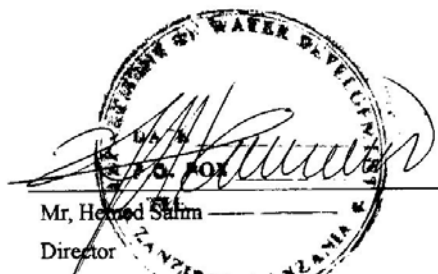
ON THE BASIC DESIGN STUDY  
ON THE PROJECT FOR ZANZIBAR URBAN WATER SUPPLY  
DEVELOPMENT  
IN THE UNITED REPUBLIC OF TANZANIA

AGREED UPON BETWEEN  
MINISTRY OF WATER CONSTRUCTION ENERGY AND LANDS  
AND  
JICA STUDY TEAM

23 NOVEMBER, 2004

藤原 廣輝

Mr. Hiroki FUJIWARA  
Chief Consultant  
JICA Study Team



Mr. Hemed Salm  
Director  
Department of Water Development (DWD),  
Ministry of Water Construction Energy and  
Lands, Zanzibar,  
The United Republic of TANZANIA



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After a series of discussions during the field survey in Zanzibar from 25<sup>th</sup> October 2004 through 23<sup>rd</sup> November 2004, the following points were agreed between the Department of Water Development (DWD), Ministry of Water Construction Energy and Lands, Zanzibar, The United Republic of TANZANIA and the JICA STUDY TEAM (Team). Based on the agreement, the Team will further analyze the results of field survey in consultation with JICA and concerned parties in Japan and will prepare a draft final report which includes the layout and design of facilities and/or equipment for the project.

#### 1. Tariff Collection

Zanzibar side promised take necessary measures to approve and enforce the related acts in water sector.

#### 2. Land Acquisition

Most of proposed site for boreholes, reservoirs/tanks and transmission/distribution pipeline are the national land. DWD promised that the necessary land will be acquired by them even if it is private land.

#### 3. Basic Concept of the Water Supply Planning

- |                            |  |
|----------------------------|--|
| (1) Target year:           | 2010   |
| (2) Service area:          | Zanzibar Urban and West                                    |
| (3) Population:            | Approx. 495,000 people in Zanzibar Urban/West in 2010      |
| (4) Water demand criteria: | Based on FINNIDA report, 1991                              |
| (5) Water demand:          | Approx. 54,000 m <sup>3</sup> /day (daily maximum) in 2010 |

#### 4. Borehole Capacity and Location

The shortage of water resource is about 600 m<sup>3</sup>/hr. It will be managed by the ground water development. We found the proper capacity for each borehole shall be minimum 60 m<sup>3</sup>/hr against the 100 m<sup>3</sup>/hr in the request. Total number of new boreholes shall be 9 – 10 for full demand. The proposed new borehole sites are presented in Appendix 1.

#### 5. Reservoirs and Overhead Tanks

##### (1) Location

Although the reservoirs and overhead tanks are concentrated in Saateni station and Welezo station in the request, it will be better to relocate as Appendix 1.

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(2) Disinfection

The contamination was found in tapped water as the result of water quality survey, proper and continuous disinfection is strongly recommended.

(3) Transmission pumps

The transmission pumps are aging and the performance is decreasing, the replacement of pumps and electric panels are recommended in the Saateni station.

6. Transmission/ Distribution pipe line

(1) Minimum earth cover

Minimum earth cover shall be 0.8 m in principle.

7. Equipment

(1) Pickup trucks

Four pickup trucks are strongly requested by DWD. The specification is as follows;

Double cabin, 4WD, 2500 cc grade 4 units

(2) Workshops and laboratory

Equipment for workshops and laboratory is requested but the priority is lower than boreholes, reservoirs/tanks and transmission/distribution pipeline.

8. House Connection

House connection has been implemented by DWD and more than 240,000 people can be connected at present. DWD has enough ability to conduct house connection and other piping works.

9. Soft Component

The necessity of following fields of soft component was recognized.

Organization development related with the technical assistance program

Operation and maintenance of Water supply facilities

10. Obligations of Zanzibar side

DWD will undertake the land acquisition, fencing, power supply, etc. according to the Minute of Discussions signed on 28 October 2004, Annex-V.

11. Standards

Japanese standards including JIS, JWWA can be adopted as an international standards as BS, ISO, DIN.

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12. Scope of Work of the Japanese Grant Aid

The Team explained that all the scope of the Project may not be implemented by Japanese Grant Aid.

The priority of the component is as follows;

- (1) Boreholes/ Transmission pipeline/ Reservoirs
- (2) Distribution pipelines
- (3) Equipment for workshop and laboratory

The priority of the area of reservoir is as follows;

- (1) Welezo station
- (2) Dole station
- (3) Kinuni station
- (4) Saateni station

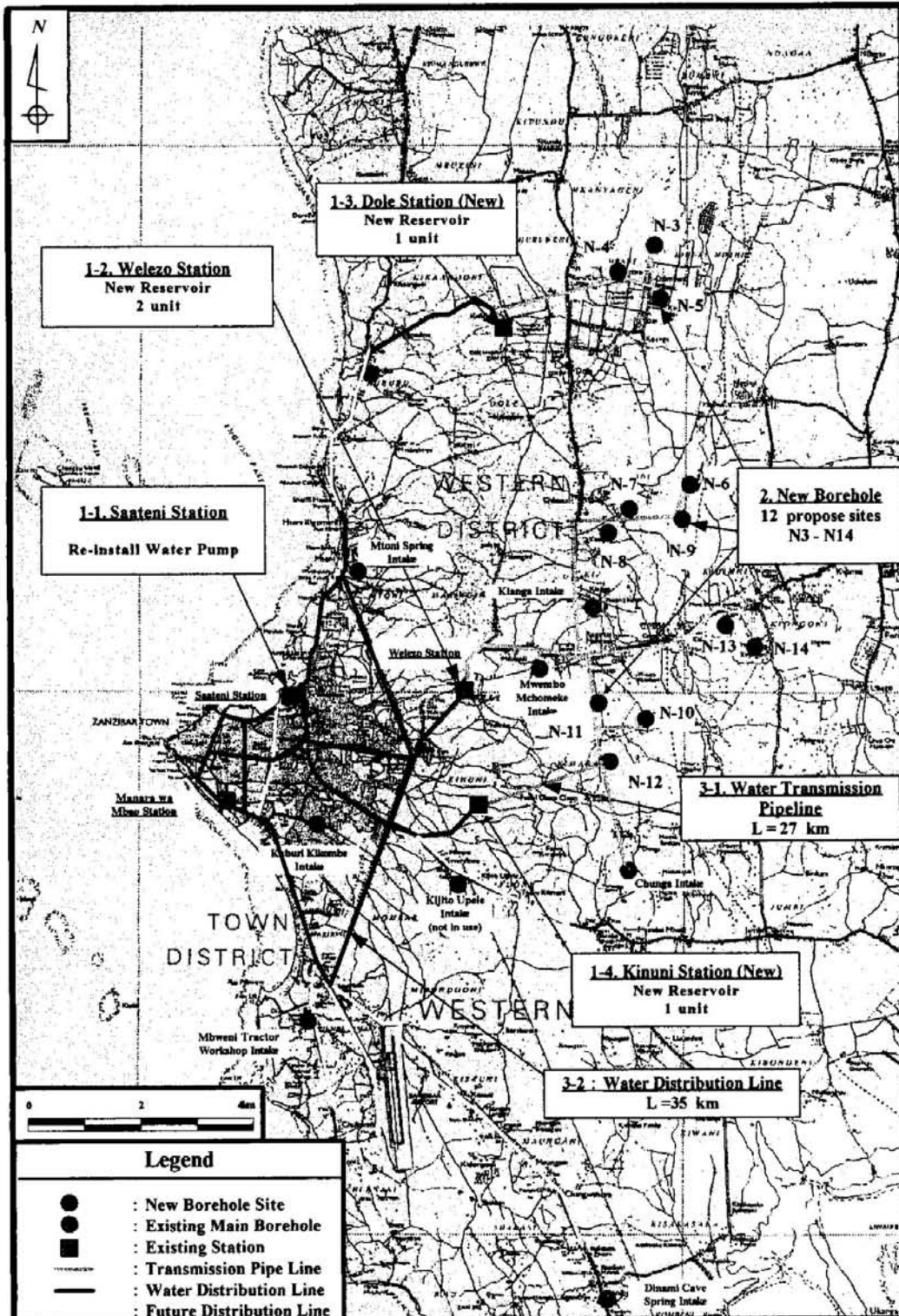
The component is summarized in Appendix 2

13. EIA

The Team confirmed to DWD that EIA for this project can be conducted by Zanzibar side, Department of Environment.

## Appendix-2

Number	Item	Request	Study Result	Remarks
A	Facilities			
A 1	Reservoir Construction			
A 1-1	Saateni Station			
(1)	Construction of Underground Reservoir	4,000 m <sup>3</sup> × 1	—	Modification of Distribution system
(2)	Re-Construction of Overhead Water Tank	450 m <sup>3</sup> × 2	—	DWD is repairing
(3)	Construction of Overhead Water Tank	450 m <sup>3</sup> × 2	—	Modification of Distribution system
(4)	Re-installation of Centrifugal Water Pump Set	540 m <sup>3</sup> /hr × 2 250 m <sup>3</sup> /hr × 2	Approx. 400 m <sup>3</sup> /hr × 2 200 m <sup>3</sup> /hr × 2	(1 stand-by for each capacity included)
(5)	Construction of Chlorination System	1 set	1 set	
A 1-2	Welezo Station			
(1)	Construction of Reservoir	4,000 m <sup>3</sup> × 1 3,000 m <sup>3</sup> × 2	Approx. 4,000 m <sup>3</sup> × 2	Modification of Distribution system
(2)	Construction of Chlorination System	1 set	1 set	
A 1-3	Dole Station	—		Modification of Distribution system
(1)	Construction of Reservoir		Approx. 1,200 m <sup>3</sup> × 1	
(2)	Construction of Chlorination System		1 set	
A 1-4	Kinuni Station	—		Modification of Distribution system
(1)	Construction of Reservoir		Approx. 2,700 m <sup>3</sup> × 1	
(2)	Construction of Chlorination System		1 set	
A 2	Borehole Construction	100 m <sup>3</sup> /hr × 6 sets	60 m <sup>3</sup> /hr × 10 sets +stand-by 1 set	12 candidate sites were surveyed
A 3	Network Construction			
A 3-1	Transmission Pipeline	Length approx. 20km	Length approx. 27km	D=150 ~ 600
A 3-2	Distribution Pipeline	Length approx. 35km	Length approx. 35km	D=200 ~ 600
B	Equipment			
B1	Water Laboratory Equipment	1 set	—	
B2	Workshop Equipment	1set	Pickup Trucks 4 units	- Pump maintenance - Laboratory & Chlorine - Pipe repair - Monitoring



**Appendix-1** **Proposed Development Plan**  
**Zanzibar Urban Water Supply Development**

**List of Land Owner**

Facility	Place	Land Owner
<b>(Boreholes)</b>		
N-3	Kinu Moshi	Government
N-4	Kizinbani	Government
N-5	Kizinbani	Government
N-6	Chemani	Government
N-7	Chemani	Government
N-8	Kianga	Government
N-9	Kianga	Government
N-10	Chunga	Government
N-11	Chunga	Government
N-12	Chunga	Government
N-13	Koani	Government
N-14	Koani	Government
<b>(Distribution Reservoirs)</b>		
Welezo New Reservoir No.1	Welezo (beside hospital)	Government
Welezo New Reservoir No.2	Welezo (beside existing reservoir)	Government
Dole New Reservoir	Dole	Government (Zanzibar Vocational School)
Kinuni New Reservoir	Kinuni	Government (Military security area)
<b>(Elevated Tanks)</b>		
Sateeni New Tank	Sateeni Waterworks	Government
Mazizini New tank	Mazizini	Government (Islamic Academy)
<b>(Transmission Pipeline)</b>		
N-3 to road		Government
N-4 to road		Government
N-5 to road		Government
N-6 to road		Government
N-7 to road		Government
N-8 to road		Government
N-9 to road		Government
N-10 to road		Government
N-11 to road		Government
N-12 to Kinuni Reservoir		Government
N-13 to road		Government
N-14 to road		Government
<b>(Distribution Pipeline)</b>		
Urban area		Government
Urban extension area		Government
Peri-urban area		Government