

Appendices

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A1. Member List of the Study Team

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(1) Field survey 1

From November 27, 2007 to February 1, 2008

	Name	Job title	Occupation
1	Yuji MARUO	Team Leader	Japan International Corporation Agency (JICA) International Corporation Adviser
2	Jun MURAKAMI	Planning Management	Water Resources Development and Environment Management Team, Project Management Group III, Grant Aid Management Dept., JICA
3	Hiroshi FUJITA	Chief Consultant/ Water Supply Facility Design 2	Project Management Div. Overseas Operational Dep. Kokusai Kogyo Co., Ltd.
4	Takatoshi FUJIYAMA	Water Sully Facility Design 1	Mineral Develop Dep. Mitsui Mineral Development Engineering Co., Ltd
5	Toshiyuki MATSUMOTO	Hydrogeology/ Trial Borehole Management	Environmental Management Div. Overseas Operational Dep. Kokusai Kogyo Co., Ltd.
6	Tugio ISHIKAWA	Geophysical Prospecting	Mineral Develop Dep. Mitsui Mineral Development Engineering Co., Ltd
7	Takashi NAKANO	Execution Plan/ Cost Estimation	Project Management Div. Overseas Operational Dep. Kokusai Kogyo Co., Ltd
8	Risako IMAI	Socio Economic Survey/ O&M Management	Environment Management Div. Overseas Operational Dep. Kokusai Kogyo Co., Ltd.
9	Norikazu YAMAZAKI	Coordinator	Urban Management Div. Overseas Operational Dep. Kokusai Kogyo Co., Ltd.

(2) Field survey 2

From March 9, 2008 to March 18, 2008

	Name	Job title	Occupation
1	Hiroshi FUJITA	Chief Consultant/ Water Supply Facility Design 2	Project Management Div. Overseas Operational Dep. Kokusai Kogyo Co., Ltd.
2	Toshiyuki MATSUMOTO	Hydrogeology/ Trial Borehole Management	Environmental Management Div. Overseas Operational Dep. Kokusai Kogyo Co., Ltd.

(3) Explanation of Draft Basic Design Report

From August 2, 2008 to August 9, 2008

	Name	Job title	Occupation
1	Yuji MARUO	Team Leader	Japan International Corporation Agency (JICA) International Corporation Adviser
2	Hiroshi IKEURA	Planning Management	Water Resources Development and Environment Management Team, Project Management Group III, Grant Aid Management Dept., JICA
3	Hiroshi FUJITA	Chief Consultant/ Water Supply Facility Design 2	Project Management Div. Overseas Operational Dep. Kokusai Kogyo Co., Ltd.
4	Toshiyuki MATSUMOTO	Hydrogeology/ Trial Borehole Management	Environmental Management Div. Overseas Operational Dep. Kokusai Kogyo Co., Ltd.

A2. Study Schedule

A2. Study Schedule

(1) Field Survey 1

Study schedule for Basic Design Study as follows.

	Date	JICA			Consultant					Coordinator (Mr. Yamazaki)		
		Team Leader (Mr. Maruo) Planning Management (Mr. Murakami)	Chief Consultant/ Water Supply Facility Design 2 (Mr. Fujita)	Hydrogeologist/ Trial Boring Management (Mr. Matsumoto)	Water Supply Facility Design 1 (Mr. Fujiyama)	Geophysical Prospecting (Mr. Ishikawa)	Execution Plan/ Costing (Mr. Nakano)	Social Survey/ O&M Plan (Ms. Inai)				
1	November	27	Tue	Traveling (HND-KIX-DXB)							Traveling (HND-KIX-DXB-DAR), Meeting Courtesy Call Explanation of ICR	
2		28	Wed	Continue DXB-DAR, Internal Meeting								
3		29	Thu	Courtesy Call to Ministry of Water, EOJ, JICA Office								
4		30	Fri	Explanation of ICR at Ministry of Water (MOW)								
5	December	1	Sat	AM Traveling (Dar Es Salaam-Mwanza) Representative of MOW will attend PM Site Investigation at Mwanza Region							Preparation of Local Assignment Works	
6		2	Sun	Site Investigation at Mara Region								
7		3	Mon	Explanation and Discussion of ICR at Mwanza								
8		4	Tue	AM Discussion of ICR at Mwanza, PM Traveling (Mwanza-Dar Es Salaam) Regional adviser will attend to Dar Es Salaam								
9		5	Wed	Discussion of Minute of Meeting at MOW								
10		6	Thu	Discussion of Minute of Meeting at MOW								
11		7	Fri	Signing of Minute of Meeting, Reporting to JICA, EOJ								
12		8	Sat	Traveling (DAR-DXB-KIX-HND)	Local Assignment Works Tender, Signing							Local Assignment works
13		9	Sun		Internal Meeting							Internal Meeting
14		10	Mon		Local Assignment Works Tender, Signing							Local Assignment Works Tender, Signing
15		11	Tue	Field Investigation Longitudinal and Plan Survey Works	Field Investigation Trial Boring, Water Pumping Test and Water Quality Analysis	Traveling (HND-KIX-DXB-DAR)				Traveling (HND-KIX-DXB-DAR) Discussion with Other Dona, Japanese Technical Assistant Member Field Investigation		Local Assignment Works Management, Supporting of Field Works
16	12	Wed										
17	13	Thu										
18	14	Fri										
19	15	Sat										
20	16	Sun										
21	17	Mon										
22	18	Tue										
23	19	Wed										
24	20	Thu										
25	21	Fri										
26	22	Sat										
27	23	Sun										
28	24	Mon										
29	25	Tue										
30	26	Wed										
31	27	Thu										
32	28	Fri										
33	29	Sat										
34	30	Sun										
35	31	Mon										
36	January	1	Tue							Social Survey Work	Local Assignment Works Management, Supporting of Field Works	
37		2	Wed									
38		3	Thu									
39		4	Fri									
40		5	Sat									
41		6	Sun									
42		7	Mon									
43		8	Tue									
44		9	Wed									
45		10	Thu									
46		11	Fri									
47	12	Sat										
48	13	Sun										
49	14	Mon										
50	15	Tue										
51	16	Wed										
52	17	Thu										
53	18	Fri										
54	19	Sat										
55	20	Sun										
56	21	Mon										
57	22	Tue										
58	23	Wed										
59	24	Thu										
60	25	Fri										
61	26	Sat										
62	27	Sun										
63	28	Mon										
64	29	Tue										
65	30	Wed										
66	31	Thu										
67	Feb	1	Fri							Field Investigation for Execution of Works	Social Survey Work	Local Assignment Works Management, Supporting of Field Works
68		2	Sat									

(2) Field Survey 2

Date				Consultant	
				Chief Consultant/ Water Supply Facility Design 2 (Mr. Fujita)	Hydrogeologist/ Trial Boring Management (Mr. Matsumoto)
1	March	8	Sat	Traveling (NGO-DXB-DAR)	
2		9	Sun		
3		10	Mon	Discussion with Implementing Agency	
4		11	Tue		
5		12	Wed		
6		13	Thu		
7		14	Fri		
8		15	Sat	Document Filing	
9		16	Sun	Signing of Technical Note	
10		17	Mon		
11		18	Tue	Traveling (DAR-DXB-KIX)	
12		19	Wed		

(3) Explanation of Draft Final Report

Date				JICA		Consultant	
				Team Leader (Mr. Maruo)	Planning Management (Mr. Ikeura)	Chief Consultant/ Water Supply Facility Design 2 (Mr. Fujita)	Hydrogeologist/ Trial Boring Management (Mr. Matsumoto)
1	August	2	Sat	Travelling (NGO-DXB)	Traveling (HND-KIX-DBX)		
2		3	Sun	Traveling (DBX-DAR), Internal meeting			
3		4	Mon	Caustady call to Ministry of Water and Irrigation and JICA Tanzania office			
4		5	Tue	Explanation of DF/R (MoWI)			
5		6	Wed				
6		7	Thu	Discussion of M/D (MoWI)			
7		8	Fri	Signing of M/D, Traveling (DAR-DBX)			
8		9	Sat	Traveling (DBX-NGO)	Traveling (DBX-KIX-HND)		

A3. List of Parties Concerned in the Recipient Country

A3. List of Parties Concerned in the Recipient Country

(1) Tanzanian Side

♦ Ministry of Water and Irrigation (MoWI)

Deputy General Manager	Mr. Christpher N. Sayi
Assistant Director	Mr. Mziray
Assistant Director	Mr. Kwigizile
Assistant Director	Mr. Kongola
Assistant Director	Ms. Nkya
Senior Engineer	Mr. Ruoezemamu
Senior Engineer	Mr. Chusi
Senior Engineer	Mr. Kilua
Civil Engineer	Mr. Siarrz
Engineer	Mr. Masasi
Design Section	Ms. Massawe
Principal Hydrologist	Mr. Rumambo

♦ Regional Water Adviser (RWA)

Mwanza region office	Mr. Nkanwa
Mara region office	Mr. Nkande

♦ District Water Engineer Office (DWE)

Misungwi office	Mr. Cassian
Sengerema office	Mr. E. Edward
Kwinba office	Mr. Boaz
Magu office	Mr. Josef
Geita office	Mr. Abudalla Abdul
Ukerewe office	Mr. Kahulananga
Bunda office	Mr. M.Nyandiga
Musoma office	Mr. Felix Mboje
Tarime office	Mr. Machumu
Serengeti office	Mr. J.Ngodagula

♦ Ministry of Finance (MoF)

Commissioner for External Finance Division	Mr. Magonya
External Finance Division	Mr. Dulle

(2) Japanese Side

◆ Embassy of Japan in Tanzania

Makoto ITO	Ambassador
Hiroshi ITO	First Secretary

◆ JICA Tanzania office

Ryo KASHIWAYA	Representative
Koji MAKINO	Deputy Representative
Daigo KOGA	Assistant Resident Representative
Tetsuya YAMAMOTO	Assistant Resident Representative
Yusuke ANDO	Expert

◆ Rural Water Supply and Sanitation Capacity Development Project

Yuichi HATA	Project Manager
Hiroyoshi YAMADA	
Kimiko AZUMA	
Tomohiro KATO	

A4. Minutes of Discussions

A4. Minutes of Discussions

(1) Minute of Discussions (December 7, 2007)

MINUTES OF DISCUSSIONS
ON THE BASIC DESIGN STUDY
ON THE RURAL WATER SUPPLY PROJECT
IN MWANZA AND MARA REGIONS
IN THE UNITED REPUBLIC OF TANZANIA

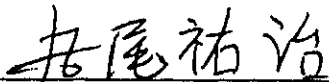
In response to a request from the Government of the United Republic of Tanzania (hereinafter referred to as "Tanzania"), the Government of Japan decided to conduct a Basic Design Study on the Rural Water Supply Project in Mwanza and Mara Regions (hereinafter referred to as "the Project") and entrusted the study to the Japan International Cooperation Agency (hereinafter referred to as "JICA").


JICA sent to Tanzania the Basic Design Study Team (hereinafter referred to as "the Team"), which is headed by Dr. Yuji Maruo, Senior Advisor, Institute for International Cooperation, JICA, and is scheduled to stay in the country from 28th November to 1st February and from 24th February to 7th March.

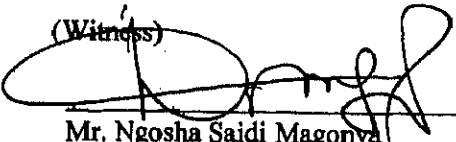
The Team held discussions with the officials concerned of the Government of Tanzania and conducted a field survey at the study area.

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.

Dar es Salaam, 7th December, 2007


Dr. Yuji Maruo
Leader
Basic Design Study Team
Japan International Cooperation Agency
Japan


Mr. Christopher N. Sayi
for: Permanent Secretary
Ministry of Water
The United Republic of Tanzania

(Witness)

Mr. Ngosha Saidi Magonya
Commissioner for External Finance
Ministry of Finance
The United Republic of Tanzania

The Team explained that it is difficult for Japanese Government to accept both construction of new water supply system and procurement of equipment for constructing the above new water supply system in one project according to the policy of Japanese Grant Aid. Therefore the drilling equipment will not be procured in the Project.

After discussions with the Team, both sides confirmed that the contents of final request by Tanzanian side are as follows;

Construction of new water supply system and rehabilitation of existing water supply facilities for 45 villages in the project site

- Construction of 289 sets Level-1 supply system (Deep and Medium depth boreholes with hand pump): 158 deep boreholes and 131 medium depth boreholes in 35 villages.
- Construction of 7 sets Level-2 supply system (motorized pump and piped scheme) with water source of groundwater (4sets in 4 villages) and Lake Victoria water (3sets in 4 villages).
- Rehabilitation and Extension of existing Level-2 supply system: 1 scheme with water source of Lake Victoria water covering 2 villages

Requested villages are listed in Annex-5.

2 spring sources which were recommended for spring protection as priority project by JICA Development Study (2005) are also included in the above mentioned list.

The Team explained that the above requested schemes are defined to be the target of this Basic Design Study and JICA will assess the appropriateness of the final request in this study. JICA will present the outcome of the assessment to the Government of Japan to obtain its approval.

7. Other relevant issues

7-1. Target water source in the Project

Both sides agreed that shallow aquifers of less than 20m deep are not considered to be the target of the Project.

7-2. Screening and prioritization of the requested water supply facilities

Both sides agreed that the all requested boreholes schemes will be screened and prioritized through the field study and internal analysis based on the flowchart shown in Annex-6.

The Team stated that there is no replacement of candidate borehole sites other than initial point, if in case some sites will be excluded as a result of the field survey.

Tanzanian side agreed and accepted it.



7-3. Qualifications for successful boreholes

Both sides agreed the qualifications for successful boreholes for Level-1 and Level-2 are listed in the Table below;

Categories	Standards for Successful Boreholes
Quantity	Level-1 scheme ; should not be less than 15 liter/min.
	Level-2 scheme; should not be less than 15 liter/min, and to meet the water demands of the requested community
Water Quality	Standard of Water Quality of Domestic Water in Tanzania (1981) will be basically applied The WHO guideline (2004) will be applied to those items to be analyzed which may affect the human health.
Water Level	Level-1 scheme ; dynamic water level should not be more than 50m from the ground

7-4. Use of existing boreholes

There are some existing boreholes with sufficient proven yield which were drilled by JICA and other donors.

The Tanzania side approved the use of above mentioned existing boreholes for the Project.

7-5. The technologies of schemes

Both sides agreed that the technologies of schemes will be made based on the flowchart shown in Annex-7 if there is not substantial change in social conditions of the project sites and the condition of boreholes from the previous study.

7-6. Basic unit of water supply

Both sides agreed that basic unit of water supply in the Project is set to be 25 liters per capita per day which is described in "Design Manual for Water Supply and Waste Water Disposal (1997)".

The Team will evaluate the feasibility of requested level-2 schemes based on the above mentioned condition particularly in such respects as the water potential, estimated operation and maintenance cost, affordability to pay the water fee and etc.

7-7. Duplication with other projects

Tanzanian side explained that the target sites of the Project are not duplicated with any other projects at this moment. The Team will provide exact locations of borehole when the draft final report of this study is presented. The Tanzanian side agreed that the target sites of the Project will not be allocated to any other project.





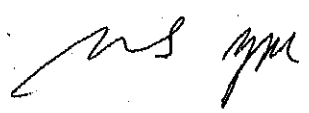
7-8. Progress of arrangement of water right

Tanzanian side promised the Team to complete the acquisition of necessary water right for the Project.

7-9. Necessity of EIA (Environmental Impact Assessment)

Tanzanian side explained that IEE (Initial Environmental Evaluation) has been conducted during the Development Study. The result of IEE which was approved by National Environment Management Council (NEMC) does not require EIA to be conducted.



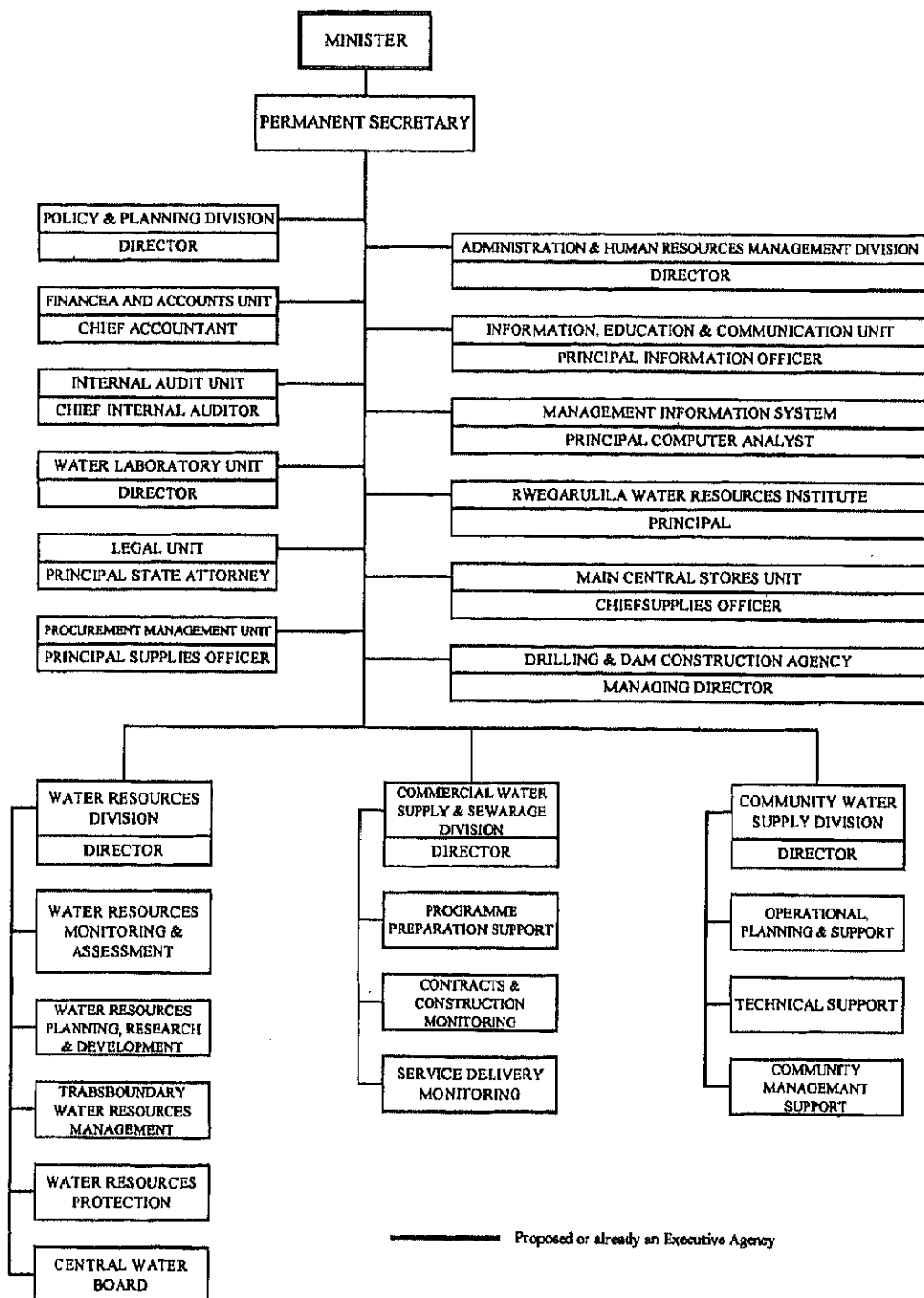


A4-5

ANNEX 2: ORGANIZATION CHART

THE ORGANIZATION STRUCTURE OF THE
MINISTRY OF WATER

(Approved by the President on 18th April, 2006)



Annex-3

JAPAN'S GRANT AID**Japan's Grant Aid Scheme**

The Grant Aid scheme 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 relevant laws and regulations of Japan. The Grant Aid is not supplied through the donation of materials as such.

(1) Grant Aid Procedures

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)

Firstly, the application or a 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 the 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 Scheme, 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 (E/N) signed by the Governments of Japan and the recipient country.

Finally, for the smooth 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 Government of Japan. The contents of the Study are as follows:

- i) 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.



Annex-3

- ii) Evaluation of the appropriateness of the Project to be implemented under the Grant Aid Scheme from a technical, social and economic point of view.
- iii) Confirmation of items agreed upon by both parties concerning the basic concept of the Project.
- iv) Preparation of a Basic Design of the Project,
- v) 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 consulting 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 on the Project's implementation after the Exchange of Notes, in order to maintain technical consistency.

(3) Japan's Grant Aid Scheme

1) 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.

- 2) "The period of the Grant Aid" 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 natural disaster, 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.

- 3) Under the Grant Aid, in principle, Japanese products and services including transport or



nex-3

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, constructing 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.)

4) Necessity of the "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 to Japanese taxpayers.

5) 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:

- i) To secure land necessary for the sites of the Project and to clear, level and reclaim the land prior to commencement of the construction.
- ii) To provide facilities for the distribution of electricity, water supply and drainage and other incidental facilities in and around the sites.
- iii) To secure buildings prior to the procurement in case the installation of the equipment.
- iv) To ensure all the expenses and prompt execution for unloading, customs clearance at the port of disembarkation and internal transportation of the products purchased under the Grant Aid.
- v) 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.
- vi) 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.

6) "Proper Use"

The recipient country is required to operate and maintain 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.



inex-3

7) "Re-export"

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

8) 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 (A/P) issued by the Government of the recipient country or its designated authority.

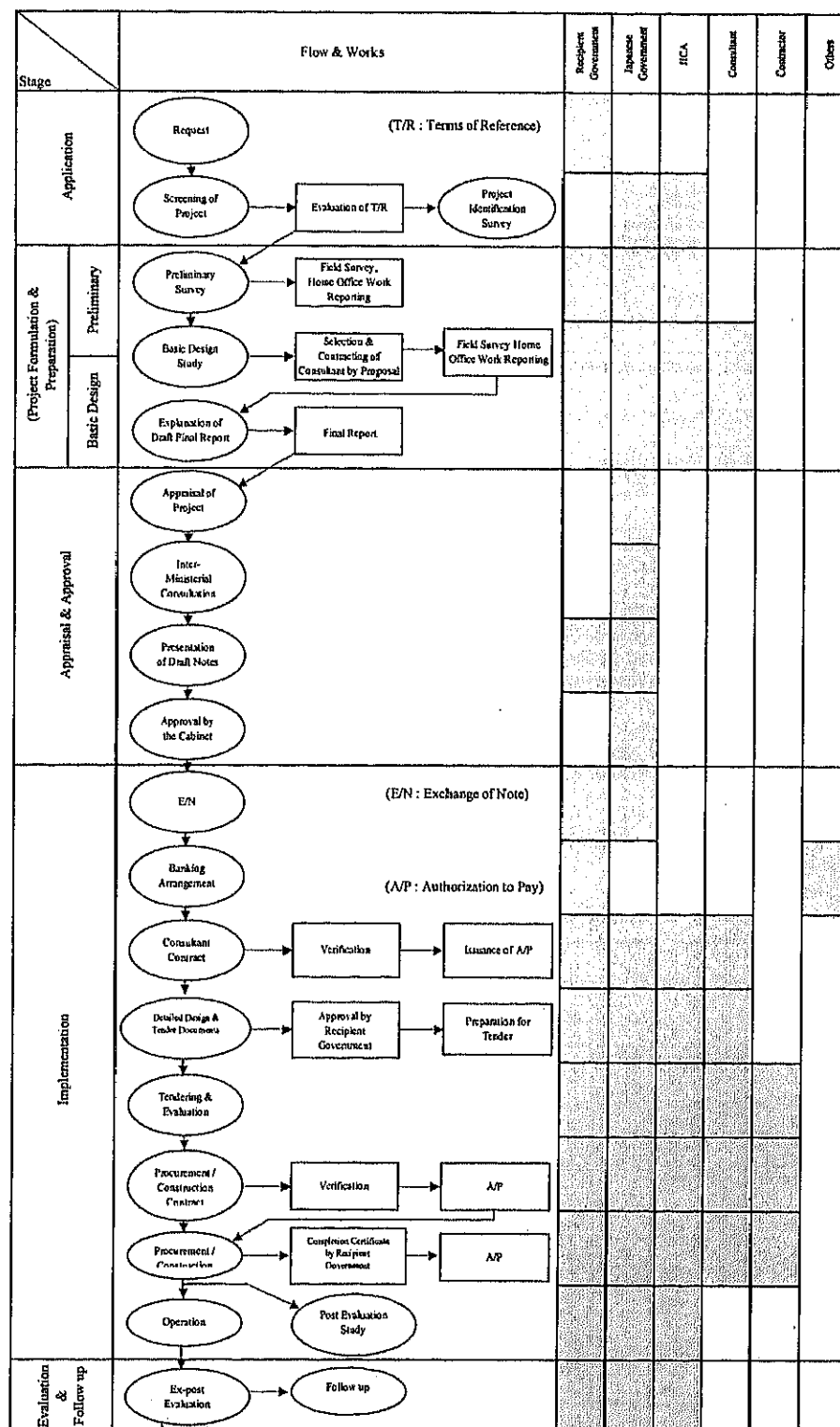
9) Authorization to Pay (A/P)

The Government of the recipient country should bear an advising commission of an Authorization to Pay and payment commissions to the Bank.



Annex-3

Figure Flowchart of Japan's Grant Aid Procedures



Annex-4

Major Undertakings to be taken by Each Governments

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 Bear the following commissions to the Japanese banking services based upon the B/A		
	1) Advising commission of A/P		•
	2) Payment commission		•
5	To ensure unloading and customs clearance at port of disembarkation in recipient country		
	1) country Marine (Air) transportation of the products from Japan to the recipient country	•	
	2) Tax exemption and custom clearance of the products at the port of disembarkation		•
	3) Internal transportation from the port of disembarkation to the project site	(•)	(•)
6	To accord Japanese nationals whose service 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		•
7	To exempt Japanese nationals from custom 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 contracts		•
8	To maintain and use properly and effectively the facilities contracted and equipment provided under the Grant		•
9	To bear all the expenses, other than those to be borne by the Grant, necessary for construction of the facilities as well as for the transportation and installation of the equipment		•

B/A : Banking Arrangement

A/P : Authorization to Pay




Annex -5

List of Villages for Level-1 Facilities

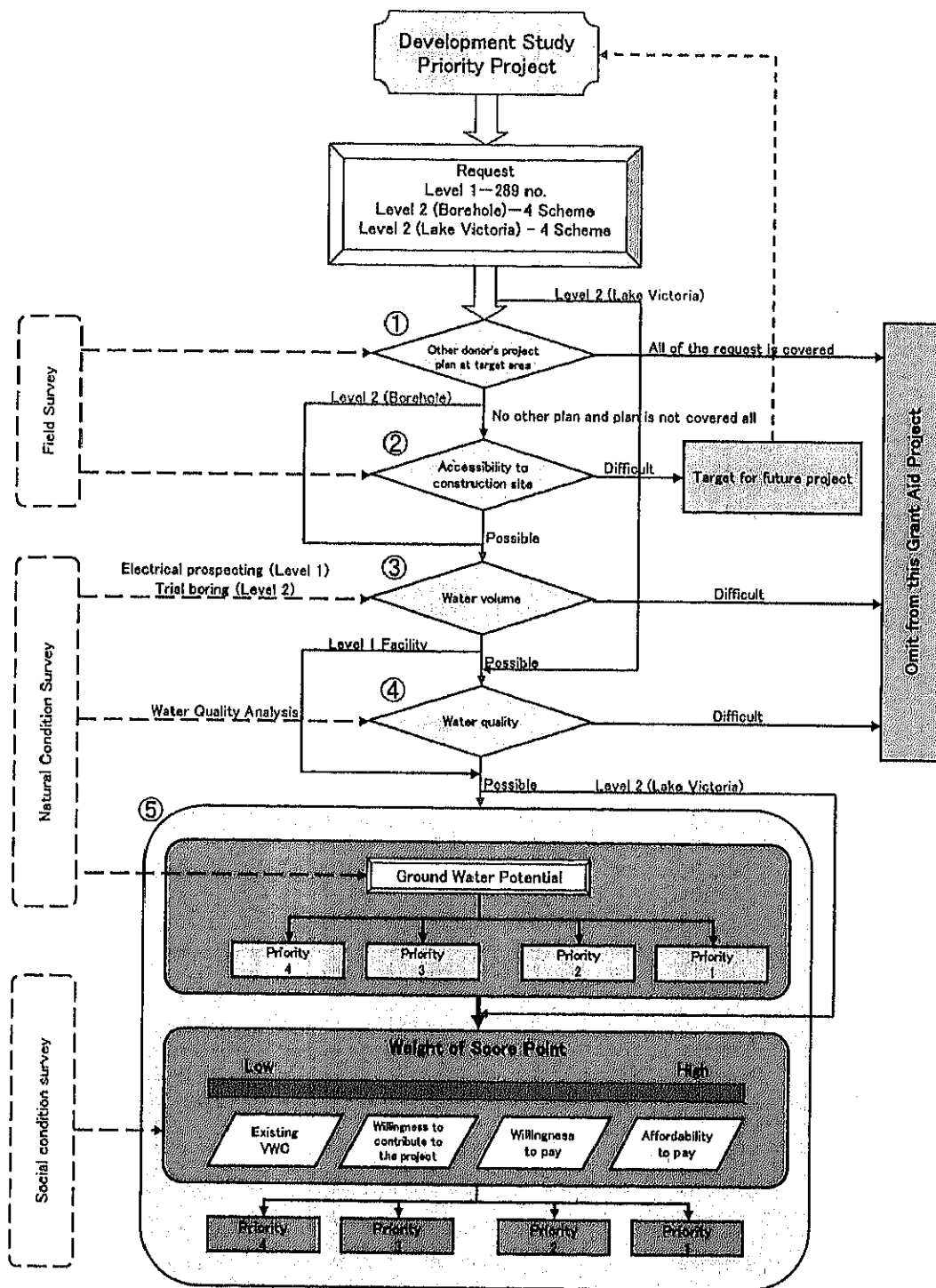
no	Region	District	Village	Souce of Water		
				Deep Well	Middle	Spring
1	Mwanza	Sengerema	Sogoso	6	3	
2			Sotta	5	2	
3			Isole	5	2	
4			Busekeseke	4	3	
5			Katoma	5	3	
6			Magulukenda	6	2	
7			Nyancheche	5	4	
8		Kwimba	Mhulya	4	4	
9		Magu	Kijereshi	8	2	
10		Geita	Bugulala	5	6	
11			Kasota	5	4	1
12			Kamena	5	3	
13			Ndelema	3	7	
14			Nyashishima	2	3	
15			Bogogo	6	2	
16			Ikina	2	5	
17			Ibondo	7	6	
18	Mara	Bunda	Mcharo	4	1	
19		Musoma	Sirorisimba	4	4	
20			Ryamisanga	6	2	
21			Kisamwene	6	5	
22			Bugoji	7	3	
23			Isaba	3	7	
24		Tarime	Nyankunguru	5	4	
25			Kiwanja	4	1	
26			Bisarwi	3	5	
27			Kisumwa	2	3	
28			Nyankonge	2	3	
29			Masike	5	6	
30			Bukama	4	7	
31			Oliyo	5	4	
32			Tatwe	5	6	
33		Serengeti	Busawe	3		1
34			Nyansurura	3	6	
35	Kebancha		4	3		
Total				158	131	2

List of Villages for Level-2 Facilities

no	Region	District	Scheme	Village	Existing/ New	Source of water
1	Mwanza	Misungwi	Busongo	Busongo	New	Deep well
2		Misungwi	Ngaya	Ngaya	New	Lake Victoria
3		Sengerema	Buswelu	Buswelu	New	Deep well
4		Sengerema	Nyamiswi	Nyamiswi	New	Lake Victoria
5				Nyakasasa		
6		Sengerema	Nyakahako	Nyakahako	New	Lake Victoria
7		KWIMBA	Hungumalwa	Hungumalwa	New	Deep well
8		Ukerewe	Bukonyo	Bukonyo	Existing	Lake Victoria
9				Namilembe		
10	Mara	Musoma	Saragana	Saragana	New	Deep well

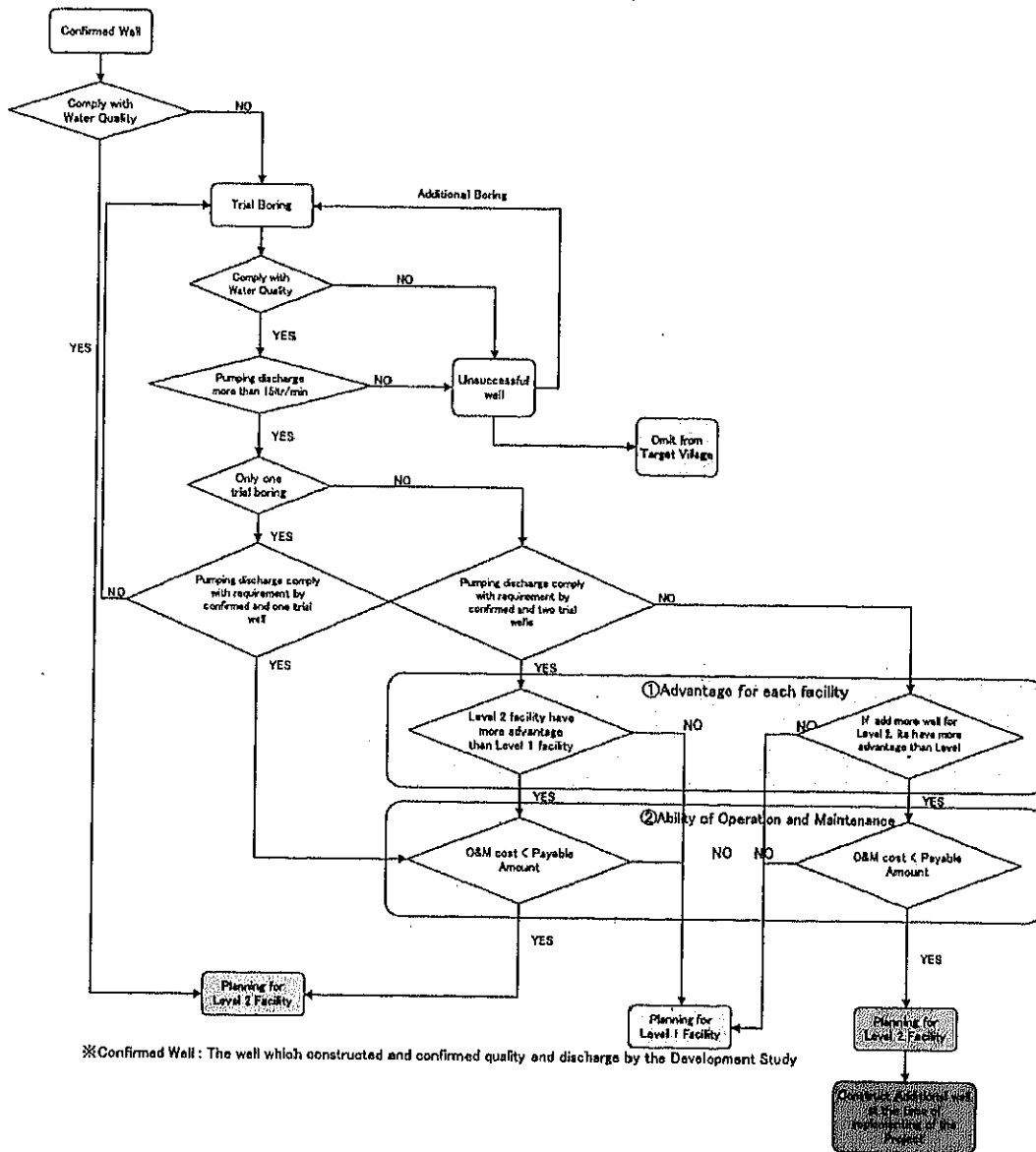
Annex-6

Flow for Prioritization of Level 1 and 2 schemes



Annex-7

Flow Chart to Determine Technologies of Scheme



(2) Technical Note (March 17, 2008)

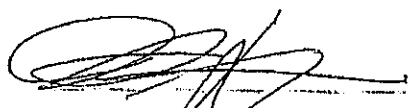
MINUTE OF MEETING
(TECHNICAL NOTE)
FOR THE BASIC DESIGN REPORT
ON THE PROJECT FOR RURAL WATER SUPPLY IN MWANZA AND MARA REGIONS
IN THE UNITED REPUBLIC OF TANZANIA
(DISCUSSION OF BASIC PLAN FOR THE PROJECT)

In response to a request from the Government of the United Republic of Tanzania (hereinafter referred to as "Tanzania"), the Government of Japan decided to conduct a Basic Design Study on the Rural Water Supply Project in Mwanza and Mara Regions (hereinafter referred to as "the Project") and entrusted the study to the Japan International Cooperation Agency (hereinafter referred to as "JICA").

JICA sent to Tanzania Mr. Fujita and Mr. Mutsumoto, members of the Basic Design Study Team (hereinafter referred to as "Study Team") and is scheduled to stay in the country from 9th March to 19th March. The team members have held discussions with the officials concerned of the Government of Tanzania on March 10, 2008 and March 14, 2008.

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

Dar es Salaam, March 17, 2008



Mr. Hiroshi FUJITA
Chief consultant
Basic Design Study Team
Kokusai Kogyo Co., Ltd.



Mr. Christopher N. Sayi
for the Permanent Secretary
Ministry of Water and Irrigation
The United Republic of Tanzania

ATTACHMENT

1. TIME AND DATE OF DISCUSSIONS

(1) Meeting No.1

Date : March 10, 2008 (Mon) 15:00-20:00

Venue : Conference room Ministry of Water and Irrigation

Attendance : See Annex 1

(2) Meeting No.2

Date : March 14, 2008 (Fri) 15:00-20:00

Venue : Conference room Ministry of Water and Irrigation

Attendance : See Annex 2

2. CONTENTS OF DISCUSSION

(1) Setting of target year

MoWI The target year for this project was set at year 2015 for the facilities if the facilities were constructed by year 2005. Since the facilities will be constructed by year 2010, MoWI requested to change the target year to 2020 instead of year 2015.

JICA ST JICA ST agreed to change target year to 2020 instead of 2015. However, as the maintenance costs which were presented to MoWI were calculated based on population in 2015, after changing target year to 2020 facilities capacity will be bigger than that was presented. It might bring about increasing of the operation and maintenance costs. Furthermore, the analysis might eliminate some of the schemes from the project.

MoWI MoWI agreed and accepted the concept.

(2) Depth of aquifer

MoWI The words "aquifer is located deeper than 50m the point will be eliminated from project", is written under policy for geophysical survey. However, based on the experience aquifer's depths are usually more than 50m deep and if depth is set at 50m will limit the number of wells distribution and affect the water service distribution.

JICA ST The definition is not for location of aquifer, but defines dynamic water level. In case dynamic water level is deeper than 50m it will be difficult to extract water using hand pumps, especially by children and women.

MoWI MoWI agreed that 50m should be the dynamic water level and not the borehole depth.

(3) Utilization of the shallow water

MoWI MoWI requested JICA to include shallow wells in project.

JICA ST The Grant Aid project has a policy to supply safe water to villagers. Shallow wells which are located within 20m from the ground might be contaminated with contaminants such as NO₃ etc; therefore, based on the policy of The Grant Aid, the project shall not utilize shallow wells.

MoWI The project should include rehabilitation of the existing wells.

JICA ST The basic design study was conducted based on the Tanzania's request; however rehabilitation was not in the initial request, therefore rehabilitation of the existing well is not considered in this project.

MoWI MoWI agreed and accepted.

(4) Selection of Level 2 scheme based on payable amount

MoWI The judgment has been made based on income and operation and maintenance cost. However, if a facility is constructed that may shorten the time villagers use to fetch water and hence villagers may have more time to engage in production activities and therefore increase their income. Therefore MoWI request to construct all of the Level 2 schemes (total 8 schemes) regardless of the current village income assessment on O&M capability.

JICA ST It is understandable situation, however based on the Grant Aid Policy "the constructed facility should be sustainably utilized by the recipients", therefore JICA ST have to adopt such selection criteria for the facility.

MoWI MoWI understand Grant Aid Policy and accepted it.

(5) Method of socio-economic survey

MoWI The income for each village shown in the report does not reflect actual income as the survey team was not conversant with the area and method used did not capture all data.

JICA ST Method of income survey adopted was random sampling method, number of sample were taken from 3 households from sub-villages. We have employed experts who conducted a survey in the same development study. They have good knowledge of the situation of villages and questionnaire was conducted by oral interviews with villagers in separate rooms. The prepared questionnaire included detailed items and therefore the income survey was said to be reasonable.

MoWI MoWI accepted.

(6) Willingness to pay

MoWI In the defined criteria it was mentioned that "water price is less than 30Tsh/20ltr". It is a common rate in Tanzania however people's attitude is changing with time. MoWI recommend ignoring this criterion from scheme selection.

JICA ST JICA ST understands it. It shall ignore from criterion.

(7) Coverage of water point

MoWI The presented schemes do not comply with Tanzania design standards that "Water source shall be within 400m from their residence", MoWI requested the design to comply with design manual.

JICA ST For coverage for Level 2 facilities to comply with design standards, pipeline and other equipments requirements will be more. This may increase initial costs and more maintenance costs during project running. For sustainable operation and maintenance of schemes, we have discussed this issue with relevant personnel and decided on number and location of water points together with villagers, Regional Water Advisors and/or District Water Engineers. On the other hand, initial cost and cost effectiveness has to be calculated and compared against other country's projects. It should be in the average range for Grant Aid project. Furthermore for Level 1 points were selected based on hydro-geophysical survey, therefore some areas are not possible to be covered.

MoWI MoWI commented that the design criteria in the design manual should be adopted.

(8) Water served ratio

JICA ST Explained schemes were designed based on the water service of 25 liters/capita/day. The result shows that most of schemes can not recover the operation and maintenance costs by the payable water fees. Present alternative design is based on water service of 10 liters/capita/day up to 20 liters/capita/day. We would like to know your opinion.

MoWI Using less water service ratio below 25 liter/capita/day will result in under-sized facilities which will not suffice up to target year.

JICA ST JICA ST will design the facilities based on water service of 25 liters/capita/day.

(9) Number of level 1 facility

MoWI Some eliminated Level 2 schemes have changed into Level 1, the number of the Level 1 points are smaller compared with Level 2 scheme points. Is it possible to maintain same number of water points as level 2 points?

JICA ST The Level 1 points were set at maximum based on hydro-geophysical survey. Therefore it is not possible to increase the number of the points.

MoWl MoWl agreed.

MoWl Is the presented number of the wells to be maintained in this project?

JICA ST In principle, the presented number of the wells is secured, however in case some unforeseen condition such as shortage of Grant Aid budget occur, several number of the wells will be eliminated from this project.

End of the minute

(3) Minute of Discussion (August 8, 2008)

MINUTES OF DISCUSSIONS
ON
THE BASIC DESIGN STUDY
ON
THE RURAL WATER SUPPLY PROJECT IN MWANZA AND MARA REGIONS
IN THE UNITED REPUBLIC OF TANZANIA
(EXPLANATION ON DRAFT REPORT)

In November 2007, the Japan International Cooperation Agency (hereinafter referred to as "JICA") dispatched a Basic Design Study Team on the Rural Water Supply Project in Mwanza and Mara Regions (hereinafter referred to as "the Project") to the Government of the United Republic of Tanzania (hereinafter referred to as "Tanzania") and through discussion, field survey and technical evaluation of the results in Japan, JICA prepared a draft report of the study.

In order to explain and consult with the Government of Tanzania on the components of the draft report, JICA sent to Tanzania the Draft Report Explanation Team (hereinafter referred to as "the Team"), which was headed by Dr. Yuji Maruo, Senior Advisor, JICA, from 3rd to 8th August 2008.

As a result of discussions, both parties confirmed the main items described in the attached sheets.

Dar es Salaam, 8th August, 2008

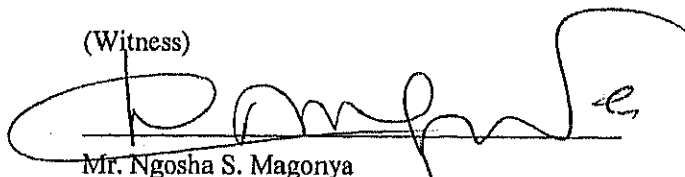


Dr. Yuji Maruo
Leader
Draft Report Explanation Team
Japan International Cooperation Agency
Japan



Mr. Christopher N. Sayi
for Permanent Secretary
Ministry of Water and Irrigation
The United Republic of Tanzania

(Witness)



Mr. Ngosha S. Magonya
Commissioner for External Finance
Ministry of Finance
The United Republic of Tanzania

ATTACHMENT

1 Components of the Draft Report

Tanzania side agreed and accepted in principle the components of the Draft Basic Design Study Report explained by the Team. The components of the project are shown in Annex-1 and 2.

2 Japan's Grant Aid Scheme

Tanzania side understood the Japan's Grant Aid Scheme and the necessary measures to be taken by Tanzania side as explained by the Team and described in Annex-3 and Annex-4 of the Minutes of Discussions signed by both parties on 7th December 2007.

3 Responsible and Implementing Agency

3.1 The Responsible Agency is the Ministry of Water and Irrigation (hereinafter referred to as "MoWI").

3.2 The Implementing Agency is the Community Water Supply Division of MoWI.

4 Schedule of the Study

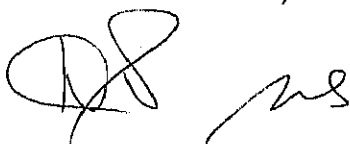
JICA will complete the final report in accordance with the confirmed item and send it to the Government of Tanzania by November 2008.

5 Other Relevant Issues

5.1 Undertakings of Tanzania side

The Team requested to the Government of Tanzania to abide by following undertakings of the Tanzania side in addition to major understandings described in Annex-4 of the Minutes of Discussions signed by both parties on 7th December 2007. The Tanzania side agreed to it.

- 1) To assign some counterpart personnel (hereinafter referred to as "C/Ps") who will work together with Japanese consultant for operation and maintenance (hereinafter referred to as "O/M") and hygienic education during the technical assistance program of the Project.
- 2) To bear the allowances and other expenses related to the activities for C/Ps.
- 3) To plant grass on slope of the platform to prevent soil erosion (by beneficiaries)
- 4) To construct fence around platform to protect from animals (by beneficiaries)
- 5) To excavate drainage ditch from the end of drain of the platform to avoid water pool (by beneficiaries)



5.2 Reliable Water Source

Tanzania side pointed out that fresh water from Lake Victoria is generally regarded to be one of the most reliable sources for the village water supply scheme compared with groundwater and other surface water sources. On this point of view, Tanzania side requested to know why all four schemes which utilize Lake Victoria water are not selected for present project. The Team explained that in order to make Lake Victoria water potable for the rural water supply, water treatment plant must be constructed. Three of the four supply schemes are eliminated because they are not financially viable for sustainable operation of the water supply scheme, while remaining one scheme was eliminated because it was not technically viable to operate the water treatment plant. In order for such schemes to be sustainable, they might need professional private operators who will be fully assigned in the operation and maintenance of the schemes and some kind of government support in terms of subsidy to cover full O/M cost.

Tanzania side is still concerned about the elimination of the four schemes despite earlier emphasis to the Team that these schemes should not be dropped. The reasons put up by the Tanzania side include the following:

- Communities in these areas have been mobilized to participate in the construction of the scheme,
- There are other communities in these areas which are able to sustain the service,
- Community capacity building will enhance sustainability of schemes,
- Lake Victoria is a reliable water source compared to groundwater.

However the Team replied that it is not possible to include these schemes in the Project.

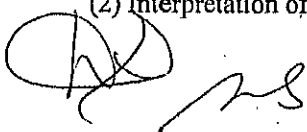
5.3 Application of Magnetic Survey

Tanzania side believes that magnetic survey is a useful tool for detecting fracture zones in basement rocks and asked whether the Team applied magnetic survey for detecting fracture zones or not in the present study. Tanzania side suggested that in order to detect fracture zones efficiently other geophysical exploration methods should be introduced rather than applying electric resistivity prospecting method only. The Team replied that the Team did not introduce magnetic survey, instead the Team applied horizontal electric resistivity prospecting method in order to detect fracture zones.

5.4 Siting of Boreholes

Tanzania side requested to be provided with the siting method used for location of borehole sites. The Team explained that the following steps were deployed to determine the exact location of borehole sites.

- (1) Lithological and structural analysis on existing geological map
- (2) Interpretation of aero-photograph and lineament analysis




- (3) Field investigation on geomorphology, geology and hydrogeology
- (4) Determination of geophysical survey sites
- (5) Determination of the drilling points

5.5 Expected Successful Rate

Tanzania side requested the Team to explain how the expected successful rate was determined in the present study. The Team explained that successful rates were determined applying the previous drilling results of Health through Sanitation and Water (HESAWA) project executed by Swedish International Development Authority (SIDA), Development Study and Basic Design Study of JICA at respective geological unit.

5.6 Survey on Spring Source

Tanzania side pointed out that only two spring protection schemes were selected for the Project while there might be many more potential spring sources in target area. The Team explained that during the Development study more than 20 spring sources were studied in terms of water quality and amount of discharge during the dry seasons, and only two sites finally satisfied the selection criteria.

5.7 Standardization of Handpumps

Tanzania side explained that it has standardized following three handpumps in the rural water supply of this country, namely Afridev, Malda and Walimi. Tanzanian side requested that handpumps for the deep wells should be selected among above three types in the Project considering the spare parts supply chain which is expected to be established in the near future. The Team fully understood the situation and accepted the request.

5.8 Project Cost Estimation

The Team explained to the Tanzania side the Project cost estimation as described in Annex-3. The Team and Tanzania side agreed that the Project cost estimation should never be duplicated or released to any outside parties before signing of all the Contract(s) for the Project. The government of Tanzania understood that the Project cost estimation attached as Annex-3 is not final and is subject to change.

However Tanzania side has the opinion that the estimated cost of the Project is on the high side compared to the actual cost of such facilities in the Project area. The Team replied that the cost was properly estimated based on the actual price in accordance with the regulation of Japan's Grant Aid. The Team also mentioned that the estimated cost may look expensive because success rate of drilling is 52% in the Project area so that in order to obtain 177 successful boreholes the contractor might actually drill 341 boreholes.

Project Components

1. Water Supply Facilities

- All eight (8) requested Public Faucet schemes have been reclassified into Handpump Well schemes.
- Total 177 sets of handpump type wells will be newly constructed by this project.
- Five (5) sets of handpump will be installed in the trial boreholes in the Development Study.
- One (1) spring protection scheme shall be implemented.
- Number of water supply facilities in each village is shown in Annex-2.

2. Technical Assistance (Soft components)

Following technical assistance for Operation and Maintenance (O/M) shall be implemented in this project.

- Participatory approach for O/M by beneficiaries
- Establishing Village Water Committee, Water and Sanitation User Group
- Accounting Training
- Planning for O/M
- Technical training for O/M
- Hygienic Education

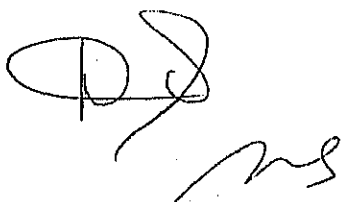


Table 1 Number of Water Supply Facilities in each village

Handpump Well Scheme

Region	District	Village	To be constructed wells by this project	Trial boreholes in Development Study	Spring Protection	To be supplied water population
Mwanza	Sengerema	Sogoso	4			1,000
		Sotta	4			1,000
		Isole	3			750
		Buskeseke	3			750
		Kasoma	5			1,250
		Magulukenda	7			1,750
		Nyancheche	6			1,500
	Kwimba	Mhula	6			1,500
	Magu	Kijereshi	4			1,000
	Geita	Bugulala	5			1,250
		Kasota	7		1	2,000
		Kamena	2			500
		Ndelema	1			250
		Nyashishima	2			500
		Bugogo	3			750
		Ikina	2	1		750
		Ibondo	8			2,000
Mara	Bunda	Mcharo	4	1		1,250
	Musoma	Sirorisimba	3			750
		Ryamisanga	5			1,250
		Kisamwene	6			1,500
		Bugoji	3			750
		Isaba	6			1,500
	Tarime	Nyankunguru	2			500
		Kiwanja	1			250
	Rorya	Kisumwa	3			750
		Nyankonge	4			1,000
		Masike	3			750
		Bukama	4			1,000
		Oliyo	3			750
		Tatwe	4			1,000
	Serengeti	Busawe	3			750
		Nyansurura	6			1,500
		Kebancha	4			1,000
Sub total			136	2	1	34,750

Scheme changed village from Public Faucet to Handpump Well

Region	District	Village	To be constructed wells by this project	Trial boreholes in Development Study	Spring Protection	To be supplied water population
Mwanza	Mitsungwi	Busongo	5	1		1,500
		Ngaya	5			1,250
	Sengerema	Buswelu	3			750
		Nyamisiwi	4			1,000
		Nyakasasa	5			1,250
		Nyakahako	6			1,500
	Kwimba	Hungmalwa	3			750
	Ukerewe	Bukonyo	2			500
		Namilemba	3			750
Mara	Musoma	Saragana	5	2		1,750
Sub total			41	3	0	11,000

Total			177	5	1	45,750
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Annex-3

Project Cost Estimation

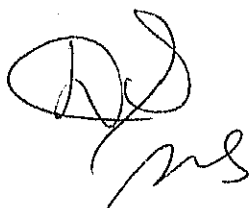
1. Japan's Grant Aid

Description	Amount (JPY)
<ul style="list-style-type: none"> ● Construction of 177 Handpump Wells, installation of 182 Handpumps (including five (5) boreholes which were drilled during Development Study) and construction of one (1) Spring Protection ● Detail Design, Construction Supervision 	967,000,000
● Technical Assistance	20,000,000
Total	987,000,000

2. Obligation of the Government of Tanzania

Description	Amount (TSH)
To secure main access road to villages	—
Obtain water permit	—
Obtain relevant authority approval for the project	—
Salary and necessary cost for persons who are in charge of technical Assistance for the project	35,700,000

1US\$=118.58 JPY, 1TSH=0.1017JPY




A5. Soft Component (Technical Assistance) Plan

A5. Soft Component (Technical Assistance) Plan

1 Background of Soft Component

(1) Background

The target of this project is to “provide safe water to beneficiaries living in the project area and to improve the water supply ratio”. To achieve this target requires not only constructing the facilities, but also the important task of utilizing the facilities sustainably. According to Tanzania Water policy in rural water supply, operation and maintenance of the facilities shall primarily be by the beneficiaries with support from the implementing agencies, the district water engineer’s office (DWE) and Regional Water Adviser (RWA). However, there has been little clarification of the proposed beneficiary-centered operation and maintenance system or the role of authorities in these tasks as of yet, so the policy remains brittle. Furthermore, the knowledge of the beneficiaries and implementing agency staff concerning operation and maintenance is insufficient to conduct the works. Under these circumstances, the facilities constructed by Japanese Grant Aide Scheme would not be operated and maintained appropriately and it would be difficult to achieve the target.

(2) Current condition and Objective

177 new boreholes, hand pumps and platforms at 182 locations (including 5 existing boreholes which were constructed in the development study), and one (1) spring protection facility will be constructed in this project. The constructed facilities are to be operated and maintained by the beneficiaries with support by the implementing agency. However, existing conditions for operation and maintenance by the beneficiaries are as follows:

- O&M management is not properly established
- The villagers lack knowledge on hygiene
- Villagers’ and implementing agency’s repair system for hand-pump wells is insufficient
- Overall management capability, from the collection of the water fee to payment for repairs, is insufficient
- Support for hand pump maintenance by implement agency is insufficient

Beneficiaries shall design the facilities to be constructed in this project that they would be able to operate and maintain. Nevertheless, beneficiaries’ performance for O&M is considered to be insufficient, and would require support to smoothly carry out these tasks through the Soft Component (technical assistance). Output of the Soft Component activities is as follows:

- | | |
|-----------|---|
| Output 1: | Strengthened O&M capability of Implementing Agency and Beneficiaries |
| Output 2: | Reliable collection of water fees to secure operation and maintenance costs. |
| Output 3: | Beneficiaries understand the concept of hygiene and are able to effectively utilize facilities |
| Output 4: | Established concrete roles and responsibilities for facility repair |
| | <ul style="list-style-type: none"> ● Minor repairs are performed by beneficiaries (Village Level Operation & Maintenance) ● Commission major repairs to commercial companies ● Provide technical support to villages |

(3) Formation of O&M management

The proposed formation of O&M management in this project is as shown below.

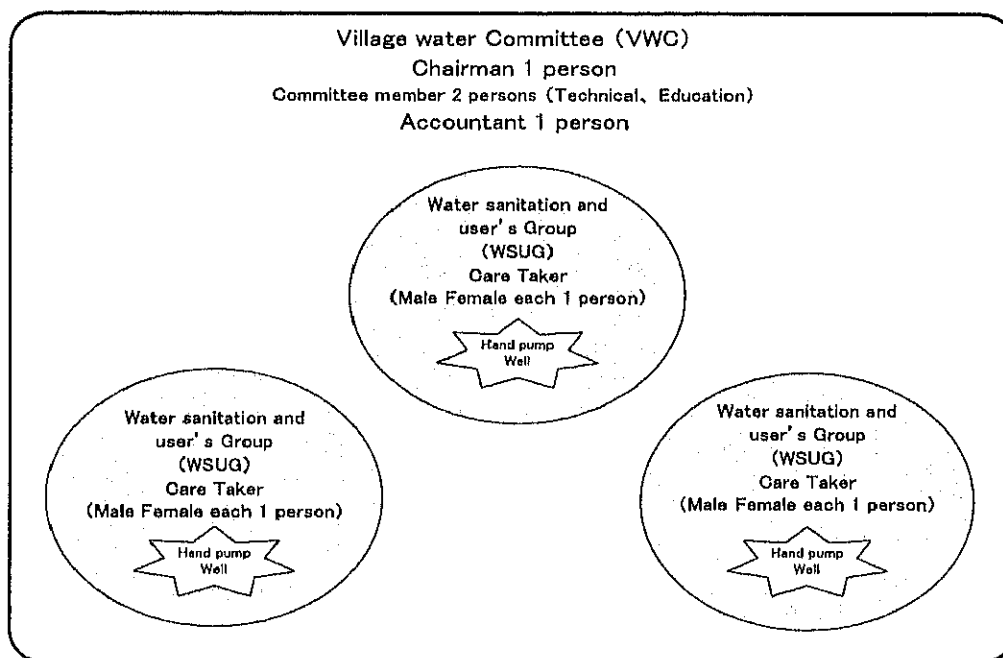


Figure 1: O&M organization at village level

Establish a Water and Sanitation Users' Group (WSUG) at each facility. Appoint one group leader and one caretaker and conduct regular maintenance, cleaning, minor repairs and collect the operation and maintenance fee.

While village water committees already existed in the target villages, most of them were not functioning properly. Therefore, the activities of the VWCs were monitored and, in some cases, a suggestion was made to re-organize. VWC will control village WSUG and make requests to DWE and RWA for support when it is time to procure spare parts.

(4) Role for related parties

The role of O&M management in this project is given below. In addition, the organization of O&M will be different depending on the type of pump. Afridef pumps, the de facto standard in Tanzania, shall be adopted in this project and planning O&M organization will be based on them.

1) Water and Sanitation Users' Group (WSUG)

A) Role

- ♦ Operation and maintenance of the water supply facilities
- ♦ Minor repairs of the water supply facilities
- ♦ Collection of repair costs from users and payment to VWC

B) Structure

- ♦ Group leader (1): Acts as a coordinator for WSUG users. Decides the rules for using the hand pump wells. Implements the rules on use of the wells. Contacts VWSC when the well breaks down. Collects the repair costs.
- ♦ Caretakers (1 man, 1 woman): Regularly inspect the hand pump wells, perform repairs and clean up around the wells, etc.

2) Village Water Committee (VWC)

A) Role

- ♦ Promotion of formation of WSUG and coordination of groups
- ♦ Contact point for village in negotiations with RWA and DWE
- ♦ Safekeeping of repair reserve funds
- ♦ Technical support for WSUG in O&M of hand pump wells

B) Structure

- ♦ Chairman (1): Acts as coordinator for WSUG, notifies RWA and DWE when a well breaks down, communicates with other administrative agencies
- ♦ Person in charge of management of the facilities (1): Acts as coordinator in technical areas such as support for repair of the water supply facilities and procurement of spare parts
- ♦ Person in charge of hygiene education (1): Promotes hygiene education. Verifies the cleaning of each well
- ♦ Person in charge of accounts (1): Manages the water charges paid by WSUG. Reviews subsidies for major repairs, etc.

3) District Water Engineer's Office (DWE)

- ◆ Management of well inventory
- ◆ Regular visits to water supply facilities and repair, or arrangement for repair, of major breakdowns
- ◆ Support for procurement of spare parts
- ◆ Provision of O&M education
- ◆ Technical support for WSUG regarding minor repairs

4) Regional Water Advisor (RWA)

- ◆ Supervision of DWE
- ◆ Technical support for DWE
- ◆ Support for procurement of spare parts
- ◆ Major repairs
- ◆ Guidance for setting up VWC and WSUG
- ◆ Provision of hygiene education
- ◆ Fostering of private well repair firms

Previously, the Regional Water Engineer's office (RWE) and DWE controlled district administrative organization whereas afterwards that duty was transferred to the district level, where it remains. As a result, RWA no longer exists and the Regional Water Adviser (a formal staff of RWE) is working for an adviser in region, therefore RWA is able to involve this project.

2 Target of Soft Component

(1) Objective

1) Objective

The objective of the soft component is framed so that "operation and maintenance is properly conducted by the beneficiaries". Also, the overall goal is defined as "long-term utilization of facilities after completion of the project". In other words, the target is for the facility to be utilized sustainably by beneficiaries after the project is completed, which is in agreement with the project target mentioned earlier.

2) Points to consider for support organization

In order to assure work efficiency, the soft component activity will be conducted for each village, not for each well unit (WSUG unit). In addition, to raise awareness and provide adequate education at the community level, the soft component activity will be conducted in two phases: 1) community development, which takes place before well construction, and 2) hygiene education and O&M, conducted during construction and after completion.

The soft component activity will be conducted mainly by the Japanese consultant with the support of local consultants through On-the-Job Training (OJT). The participation of DWE in this project is proposed for next year, the exact dates and duration for which will be discussed with DWE. The project will mainly involve DWE personnel who have received education so that they can play a central role.

3 Output of soft component

The expected outputs of the soft component are summarized as follows.

Output 1: Beneficiaries will conduct O&M activities with a sense of ownership

In order for beneficiaries to sustainably implement O&M activities, it is necessary to enhance their sense of project ownership. In order to achieve this, it is important for the beneficiaries to be involved in the decision making process, such as making user regulations and operation and maintenance rules at each stage of the project. The workshop included in the soft component will help to ensure that VWC, WSUG and the beneficiaries have a common recognition of operation and maintenance. In addition, in order to explain the contents of this project to villagers, village meetings will be held where the beneficiaries are able to express their opinions freely and come to an understanding of the project.

Output 2: Clarify the roles and support system of WSUG and the implementing agencies

So far, a number of user unions have been organized in villages, but a closer look at the actual state of their activities reveals a significant margin for improvement. In addition, the establishment of user unions and other beneficiary organizations alone is not enough; it is necessary to have a cooperative system between the village and the implementing agency (i.e. DWE and RWA) that supports operation and management by providing technical guidance and hygiene education. With the Soft Component, analysis of the related parties is carried out and the workshop pays mind to all related parties such as WSUG, VWC and the villagers. This clarifies the roles of each party and serves to construct a cooperative system of mutual connections where, with the beneficiary at the center, the operation and maintenance framework is built on a solid foundation.

Output 3: Formulation and execution of village O&M plan based on the role of beneficiaries

In order to carry out beneficiary-centred O&M, the beneficiaries themselves shall formulate a feasible operation and maintenance plan. Nevertheless, given that beneficiaries are inexperienced in such tasks, it would be ideal that the implementing agencies (DWE and RWA) provide support; however, in this case, neither DWE nor RWA possess sufficient experience to do so. With the DWE staff as facilitator, a workshop is held targeting the

beneficiaries, where they decide on an operation and maintenance plan which includes usage rules, measures to deal with maintenance and repair, and special measures, such as how to handle payment of water fees for those without the economic resources to do so. Consideration for such disadvantaged members of society is an important element to ensure that the water supply is widely utilized by the villagers. This workshop is conducted using OJT, which improves the ability of the DWE staff to support the villagers.

Once the operation and maintenance plan is decided, it is carried out as prescribed and the villagers and related personnel collaborate to conduct monitoring and evaluation of the conditions. A realistic and effective plan will be put in place based on the practice of reviewing these results and making any necessary revisions.

Output 4: Master the techniques needed for operation and maintenance

In order to promote operation and maintenance by the beneficiaries themselves, it is necessary for DWE and RWA to acquire the techniques needed to encourage villager participation. The person in charge at the implementing agencies receive training on theory and concrete techniques regarding villager participation so that they are able to properly support operation and maintenance. In addition, to uphold regular maintenance management, WSUG performs everyday maintenance of the facility and repairs minor malfunctions. When WSUG is unable to handle a repair, it corresponds with DWE staff for repair (who contact a well repair professional). Mechanical training regarding facility maintenance and repair will be carried out for the person in charge of facility management in the WSUG or VWC, or the DWE staff, so that the person in charge is able to acquire the necessary skills. A relationship of trust between the community (village) and the implementing agency (DWE) is strengthened when a member of DWE acts as the instructor to train the facility manager of the WSUG.

Regular operation and maintenance also necessitates that the utilization fee is properly collected and managed. The VWC chairman and accountant receive training on everyday operational costs, in addition to training regarding the establishment of facility utilization fees by taking into consideration the price of spare parts, travel costs for DWE staff, etc., and fee collection management methods. Furthermore, it is necessary to keep records of facility usage and work done in connection with accounting and monitoring, so the person in charge at VWC is given training on this and how to produce the records so that this is carried out faithfully.

Output 5: Improve beneficiaries' concept of health and hygiene

Reportedly, one of the reasons why facilities fall into disuse is poor awareness of hygiene.

In particular, conventional water sources (such as rainwater and surface water) tend to be used in the rainy season, which causes various hygiene problems. As such, hygiene education is provided to beneficiaries, along with the promotion of more sanitary water, to improve the health condition of villagers and promote the practice of regular operation and maintenance measures.

4 Indicator of output achievement

The indicator and measurement used to confirm the achievement of the five output items are given in the table below.

Table 1: Indicator to achieve output

No.	Output	Indicator	Measurement
1	Beneficiaries will conduct O&M activities with a sense of ownership	1. Do authorized personnel have common recognition of the role of the beneficiaries in operation and maintenance?	1. Questionnaire to person concerned
2	Clarify the roles and support system of WSUG and implementing agencies	1. Is the role of the concerned authority clear? 2. Is the role of the concerned personnel clear?	1. Organization Chart for O/M 2. Questionnaire to person concerned
3	Formulation and Execution of village O&M plan based on the role of beneficiaries	1. Is user regulation formulated? 2. Are measures for maintenance and repair clear? 3. Are monitoring and evaluation conducted according to plan?	1. User regulation 2. Maintenance and repair regulation 3. Monitoring record
4	Master required technique for operation and maintenance	1. Have periods of breakdown decreased? 2. Has the frequency of breakdowns decreased? 3. Are reports made and kept for collection of water fees, operation and maintenance?	1. Activity records for VWC, WUG 2. Operation records 3. Records
5	Improve beneficiaries' concept of health and hygiene	1. Has the beneficiaries' concept of hygiene education improved?	1. Questionnaire to beneficiaries

5 Activities of the soft component (Input Plan)

(1) Category of Activities

The soft component activities are categorized into two sections: community development before construction, and hygiene education and O&M activity during construction and after completion (refer to next page). The activities will be carried out by the Japanese consultant in cooperation with DWE and RWA.

Community development (Before construction)

A1: Participatory approach, A2: Form VWC and WSUG

Hygiene education and O&M (During construction and after completion)

A3: Management training (accounting, record-keeping), A4: Maintenance Plan, A5: Technical Training, A6: Hygiene Education

Table 2: Contents of soft component activity

	Activity Items			Contents	Feature	Target Audience
Community development	A1 Participatory approach	A1-1	Beneficiary participation training	Provide beneficiary participation training to related organizations	Seminar, on the job training	DWE, RWA
		A1-2	Village meeting	Organize village meeting to spread understanding of the project	Village meeting	Beneficiaries
	A2 Form VWC and WSUG	A2-1	Re-examine VWC structure	Re-examine VWC organization based on current activity	Workshop	VWC
		A2-2	Establishment of O/M organization	Establish O/M organization based on beneficiary level	Workshop	VWC, WSUG
Operation & Maintenance and Hygiene Education	A3 On the job training for management (Accounting, recording)	A3-1	Accounting training (C/P staff)	Provide C/P staff with training for accounting, reporting, recording	On the job training, seminar	DWE, RWA
		A3-2	Accounting training (Accountant)	Provide accountant with training for accounting, recording, reporting	On the job training, seminar	Person in charge for accounting of VWC
	A4 Planning for O/M	A4-1	Formulation of O/M Planning	Formulate operation and maintenance plan including user regulation, response to breakdowns at each villages	Workshop, on the job training	Beneficiaries
		A4-2	O/M Activity	Conduct O/M activity based on O/M plan	Monitoring, recording	Beneficiaries
	A5 Technical Training	A5-1	Technical Training	Conduct technical training for repairing of hand pump	On the job training	DWE, RWA
		A5-2	Training for person in charge	Provide person in charge with technical training for facility repairs	On the job training	Person in charge for facilities operation of WSUG
	A6 Hygiene Education	A6-1	Hygiene Education	Provide hygiene education to beneficiaries	Seminar	Beneficiaries
		A6-2	Guidance visit	Provide guidance visit for hygiene education to beneficiaries	Guidance visit	Beneficiaries

(2) Role

Role of Japanese consultant and Local consultant are summarized as below.

1) Japanese consultant

Japanese consultant shall as a manager to in charge for activities as below;

- ◆ Supporting establishment of workshop and seminar
- ◆ Establishing supporting organization for O&M management by DWE and RWA
- ◆ Conduct on the job training for DWE
- ◆ Planning for detailed execution plan
- ◆ Review of activities result and its feed back

2) Local consultant

Local consultant shall manage on site activities, involving plan execution continuously and follow up according to Japanese consultant instruction. And local consultant shall reporting situation and progress to Japanese consultant at the time necessary.

- ◆ Supporting establishment of WSUG
- ◆ Formulate method of beneficially participation and supporting beneficially participation
- ◆ Conducting educational campaign and educational activities to beneficially
- ◆ Comprehending of existing condition and problem in the target village
- ◆ Conducting technical training for management method to WSUG
- ◆ Supporting DWE and RWA activities and advice to DWE and RWA

(3) Contents of Activities

The contents of the soft component activities are as below. The overall flow of these activities is shown in Figure 2.

1) Community development: before construction

A1-1 Beneficiary participation training

Beneficiary participation training will be provided to DWE staff and RWA for facility operation and maintenance. Training will include a lecture to effectively visualize items such as consideration for gender and the social weaker, and discuss the concepts therein. In addition, the presenters will make use of comment cards for participants to express their opinions freely when holding a meeting, and methods to practice concrete techniques such as gender analysis and the seasonal calendar.

A1-2 Village meeting

Village meetings are held, attracting many of the beneficiaries in the target village. The central focus of the meeting is for DWE staff to explain the project, but it is also necessary for the beneficiaries to understand the reason for the selection of facility level, the role of villagers in operation and maintenance, and, especially, collection of the utilization fee.

A2-1 Re-examination of VWC structure

A workshop will be held for existing or previous VWCs which will focus on reviewing past activities and clarifying issues and problem areas through discussion. Based on the results of this discussion, consideration will be given to future operation and maintenance centered on beneficiary participation, and this will include discussion on the members of VWC, their roles, method of member selection and management.

A2-2 Establishment of Operation and Maintenance organization

A workshop will be held among beneficiaries, WSUG, VWC and village council, establishing an organization for operation and maintenance that is main body by beneficiary.

2) Hygiene education and Operation & Maintenance: During construction and after completion

A3-1 Accounting training (for C/P staff)

Administrative training is conducted for DWE staff and RWA on collection of management fees, method of maintenance, method of operation and recording of operation conditions. In addition, training will be held on cost calculation for repair work orders from VWC.

A3-2 Accounting training (for person in charge)

Administrative training for person in charge of VWC on setting water fees with regard to costs incurred when DWE arranges repairs, method of fee collection, method of account management, and record-keeping of facility operation.

A4-1 Formulation of O/M plan

A workshop will be held for beneficiaries facilitated by DWE. The workshop will help to analyze utilization of water and facility problems using the PCM method. On the basis of the results, participants formulate user regulations, a manual for dealing with breakdowns and a monitoring plan. User regulation shall include the amount for the water fee, method to collect the fee and special measures for the social weaker. Through this workshop, the beneficiaries are expected to come to recognize the necessity of their central role in operation and maintenance. In addition, DWE learns technical skills as a facilitator.

A4-2 O&M activities

The soft component will help to ensure that the practices included in the operation and maintenance plan that is established are carried out by the person in charge of each activity. DWE will monitor the activities and the local consultant will follow-up by checking that activity records are being produced properly.

A5-1 Technical training (for C/P staff)

Technical training, such as for hand pump repair, will be provided to DWE staff and RWA to transfer such technology. In addition, information is shared on the method of response in case a major breakdown arises which can not be repaired by VWC or WSUG.

A5-2 Technical training (for person in charge)

Technical training will be provided to the person in charge of VWC on minor repairs and such, facilitated by DWE. In addition, information is provided on how to purchase spare parts and such necessary for operation and maintenance.

A6-1 Hygiene education

Hygiene education will be provided to beneficiaries in order to improve their health and regular, long-term utilization of facilities. The seminar will focus on the prevention of water-borne illness, and also include general health issues such as the prevention of disease, nutrition intake, and preventing overwork. The hygiene education program is provided to beneficiaries as an opportunity to improve their awareness of hygiene and improve their motivation to conduct operation and maintenance.

A6-2 Guidance visit

In order to improve the way villagers think and act regarding hygiene, a guidance visit will be held as a follow-up measure. The target of this visit will be selected based on the circumstances in each village; however from an effectiveness point of view, individual guidance will be provided for households mainly through women's groups and the PTA.

6 Method of procurement of implementing resource for Soft Component

Soft component activities shall be conducted mainly by the Japanese consultant, and the activities will take a long time so that the local consultant shall be effectively employed. The Japanese consultant shall be dispatched at the necessary times. During activities, the local consultant shall act together with Japanese consultant. Finally, the local consultant shall understand the objectives and modify the plan when necessary.

7 Implementing schedule for Soft Component

(1) Content of Implementation

The soft component is divided into two phases each financial year: "community development" and "Hygiene education and operation and maintenance". A Japanese consultant will be dispatched 6 times for a total of 4 months out of the total construction period of 28.4 months, and the local consultant will be active for 17.1 months. It is difficult to comprehend activities and problems on site, so the Japanese consultant will keep close communicate with the local consultant and give instructions where needed.

Table 3: Duration of Soft Component Activity

Japanese Consultant	Phase 1	Phase 2	Phase 3	Total
Community development	0.3 month	0.9 month	0.6 month	1.8 month
Hygiene education and O&M management	0.5 month	1.1 month	0.6 month	2.2 month
Total	0.8 month	2.0 month	1.2 month	4.0 month
Local Consultant	Phase 1	Phase 2	Phase 3	Total
Community development	1.3 month	4.0 month	2.7 month	8.0 month
Hygiene education and O&M management	1.6 month	4.5 month	3.0 month	9.1 month
Total	2.9 month	8.5 month	5.7 month	17.1 month

8 Output of Soft Component

The output of the Soft Component Activities is summarized as below.

- ◆ Completion report (To be submitted to the Recipient Country side and Japanese side)
- ◆ Report for Soft Component Activity (To be submitted each dispatch of Japanese consultant)
- ◆ Beneficiary participation training report (Activity A1-1)
- ◆ Village meeting report (Activity A1-2)
- ◆ Minutes of VWC re-structuring meeting (Activity A2-1)
- ◆ Workshop report (Activity A2-2)
- ◆ Draft report of O&M organization (Activity A2-2)
- ◆ Accounting training report (Implementing agency) (Activity A3-1)
- ◆ Accounting training report (Person in charge) (Activity A3-2)
- ◆ User regulations (Activity A4-1)
- ◆ Breakdown management manual (Activity A4-1)
- ◆ Monitoring plan (Activity A4-1)
- ◆ O&M activity report (Activity A4-2)
- ◆ Technical Training report (Implementing agency) (Activity A5-1)
- ◆ Technical training report (Person in charge) (Activity A5-2)
- ◆ Hygiene education report (Activity A6-1)
- ◆ Guidance visit report (Activity A6-2)

9 Estimated cost for Soft Component

Initial cost for the Soft Component is estimated to be 20,790,000 Japanese Yen.

10 Role for Implementing Agency

The role of the implementing agencies (DWE and RWA) are summarized below.

Table 4 : Role of Implementing Agency

Organization	Role
DWE and RWA	<ul style="list-style-type: none">● Manage the overall programme through collaboration with the Japanese consultant and report to Implementing Agency Head Office● Request relevant authorities for their collaboration in implementing the project● Conduct workshop for target village, VWC and WSUG● Monitor water supply facility after they are handed over● Technical training to WSUG for hand pump repair and maintenance

Table 5 : PDM for Soft Component

Summary of Project	Indicators	Measurement	External conditions
Overall goal To improve the living environment of target area villagers	Decreased rate of waterborne disease among villagersA	•Statistical health data •Questionnaire survey	
Project goal To supply safe water and improve water supply rate in the target area	Population of those receiving safe water supply	•VWC users Inventory list	No major changes in government water supply policy
Output 1. Beneficiaries will conduct O&M activities with a sense of ownership 2. Clarify the roles and support system of WSUG and the implementing agencies 3. Formulation and execution of village O&M plan based on the role of beneficiaries 4. Master the techniques needed for operation and maintenance 5. Improve beneficiaries' concept of health and hygiene	1. Authorized personnel have common recognition of the role of the beneficiaries in operation and maintenance 2.1 The role of the concerned authority is clear 2.2 The role of the concerned authority is clear 3.1 User regulation is formulated 3.2 Measures for maintenance and repair are clear 3.3 Monitoring and evaluation are conducted according to plan 4.1 Periods of breakdown have decreased 4.2 The frequency of breakdowns has decreased 4.3 Reports are made and kept for collection of water fees, operation and maintenance 5. The beneficiaries' concept of hygiene education has improved	1. Questionnaire to person concerned 2.1 Organization Chart for O/M 2.2 Questionnaire to person concerned 3.1 User regulation 3.2 Maintenance and repair regulation 3.3 Monitoring record 4.1 Activity records for VWC, WUG 4.2 Operation records 4.3 Records 5. Questionnaire to beneficiaries	No rapid increase or shift in population
Activity Community Development A1-1 Beneficiary participation training A1-2 Village meeting A2-1 Re-examination of VWC structure A2-2 Establishment of Operation and Maintenance organization Hygiene Education and O&M Management A3-1 Accounting training (for C/P staff) A3-2 Accounting training (for person in charge) A4-1 Formulation of O/M plan A4-2 O&M activities A5-1 Technical training (for C/P staff) A5-2 Technical training (for person in charge) A6-1 Hygiene education A6-2 Guidance visit			Prerequisite The beneficiary desires to execute the project

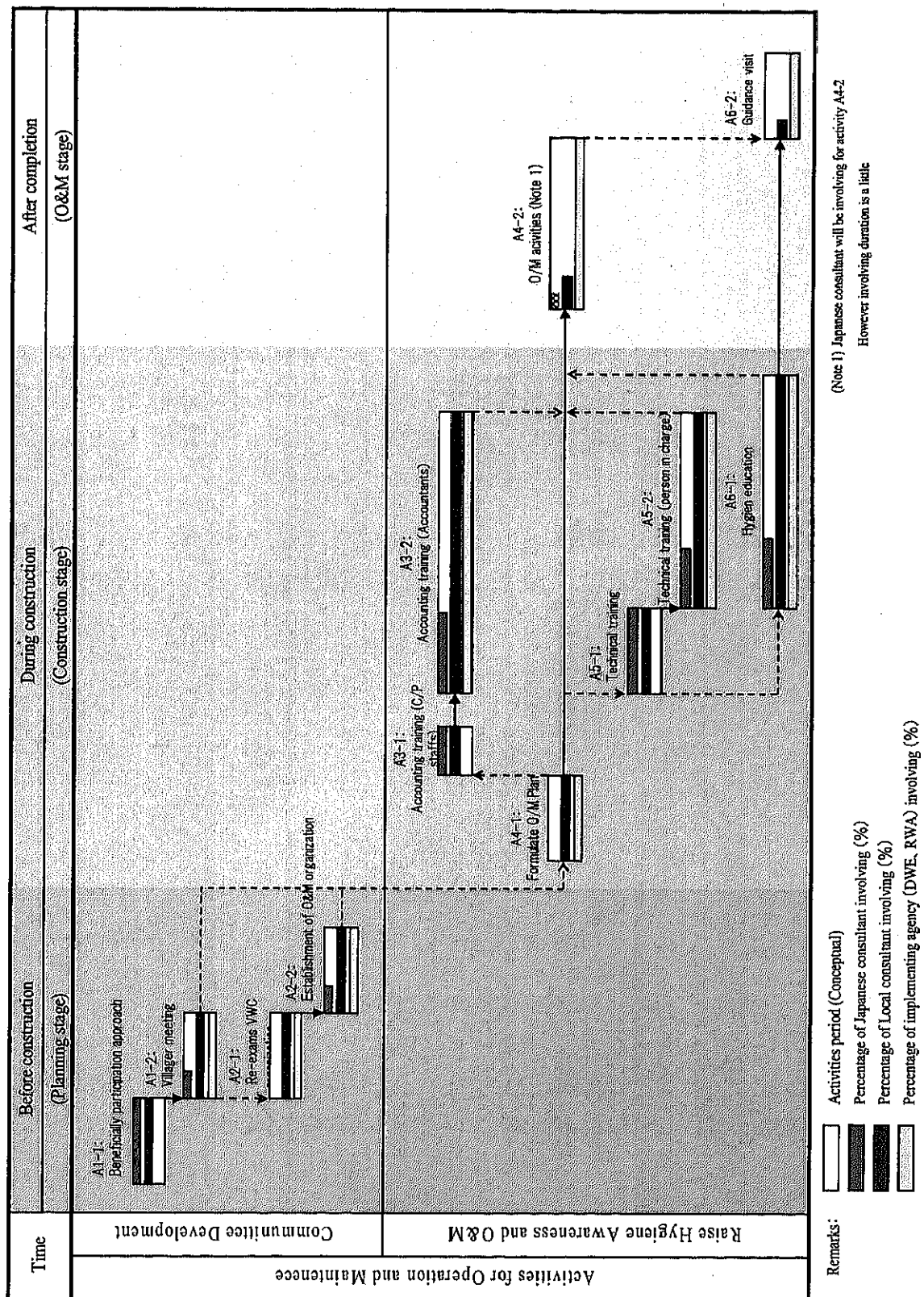


Figure 2: flow chart for activities for the operation and maintenance

