

3. Project Evaluation and Recommendation

3. Project Evaluation and Recommendation

3-1 Project Effect

The effect of the project is summarized in Table 3-1.

Table 3-1: Improvement to the current situation through implementation of the Project

Current conditions and problem areas	Countermeasures through cooperation of project target	Direct Output/Improvements	Indirect Output/Improvements
The residents of the target region suffer from chronic water shortages. As a result, the problems of water-borne disease and the burden of labor on women and children have become severe.	Develop water sources and construct water supply facilities.	The construction of water supply facilities at the Region will improve the water supply ration to 38% from the current ration of 33%, and provide water to an additional 66,228 people in the targeted 10 Woredas.	1) Securing safe water supply will reduce water-borne disease and assist in the health of residents. 2) Water sources will be closer, thus reducing the time spent by women and children to fetch water, and increasing their social participation and education opportunities.
With few water sources, the wells have not been repaired as planned, and thus the water supply conditions threaten to worsen.	Supply materials and equipment for well rehabilitation.	With the supply of well rehabilitation materials, the progress ratio to rehabilitate existing wells can be improved.	With the rehabilitation of existing wells, recovering well functionality, the improved operation ratio lifts the overall water supply ratio.
Although regional (woreda) staff has experience and knowledge about operation and maintenance of village water supply, the roles are unclear. Also, there is not enough manpower to provide management education to start village water committees of local residents.	The soft component is designed to clarify organization and improve operation capabilities. Also, instruct and educate residents.	1) Clarify and perform operation and management system in the water supply sector. Improve technical skills needed for operation and management of water supply facilities. 2) Put into practice the activity of resident-driven maintenance.	Residents gain a sense of ownership of the project and deepen their understanding of safe and sanitary water. As a result, there will be progress in residents' understanding of measures to prevent water-borne disease.

3-2 Recommendations

The following considerations shall be made for the smooth and effective implementation of the project.

3-2-1 Recommendations for the Ethiopian side

(1) Improvement of access road to the site

The sites are mainly distributed along badly maintained mountainous roads. Some roads to the drilling sites cross ephemeral rivers, which may cause difficulties for transportation during the wet season. Furthermore, a new road shall be constructed from the site to the main road as the drilling point is not always located nearby the main road. Construction of the transportation road by the community and concerned government agency shall be necessary for the smooth implementation of the project. As road construction work is the obligation of the Ethiopian side, the work shall be completed at least one month before the commencement of the drilling work.

(2) Primary distribution of commercial power supply

Some of the selected sites for the Level 2 system will utilize commercial power supply. The primary extension/distribution from the closest power supply point to the site is the obligation of the Ethiopian side. This issue has been discussed and confirmed with the Ethiopian side, who will take responsibility to fulfill the requirement of the primary distribution before the commencement of the project. It is anticipated that Ethiopian Electrical Power Corporation will implement this primary distribution to the selected sites smoothly so that the project can start the secondary power connection in the limited time frame.

(3) Setup of Tax Exemption System

Some past projects experienced the fact that no attention was given to the subcontractor's exemption of tax for project implementation. This is due to lack of flexibility on the tax exemption system for small purchases at local shops and/or lack of a sophisticated purchasing system for tax exemption, in addition, it was not able to prepare for the enough budgets that were necessary for tax exemption. An efficient purchase system for tax exemption shall be studied by both the Ethiopian and Japanese sides before implementation. The Ethiopian side shall also be advised to monitor the system in case tax exemption is not applicable.

(4) Budget and personnel acquisition

A suitable arrangement shall be made on the budget and personnel acquisition from the local government to assist and support the construction works and activities for the soft component.

(5) Contribution to the project by local residents

It is important to develop the resident's sense of ownership of the water supply facilities through their participation in the construction of facilities to contribute to long term operation and maintenance. Accordingly, light duties such as fence construction, road rehabilitation to the site and ditch excavation work for water supply pipes shall be carried out by the residents. These duties shall be agreed upon with the residents.

3-2-2 Technical Cooperation and Partnership with other Donors and NGOs

Educational and motivational activities on operation and maintenance of the facilities for the communities will be implemented especially for the Level 2 system, which requires greater knowledge of operation and maintenance, its management and technical matters. The project plan for effective cooperation will be utilizing the following resources based on the results of the survey.

(1) Work together with Ethiopia Water Technology Center (EWTEC)

EWTEC's activities are not yet scheduled in detail at the time of the expected implementation stage (year 2008). Therefore, a request for assistance will be made with reference to their activities of a two year project since 2006.

- Seminar on high grade repair techniques of Level 2 facilities for TWRMWB staff.
- Seminar on repair techniques of hand pump facilities for WWRMEO
- Seminar on community development and sanitation education for Woreda Community Coordinator

The schedule and contents of the seminars will be discussed and the detailed program plan will be organized through talks with EWTEC. Basically, the seminars will be scheduled before the implementation of facility construction. The members who attend these seminars will take the initiative in the activities on maintenance and operation at the project sites.

(2) Work together with system established by Donors and NGOs

The survey conducted in the target area revealed that the operation and maintenance activities are of satisfactory condition at the present stage. One of the reasons for this is the advanced support of manpower and human resources by WB and UNICEF based on their organization planning for water sector projects. Therefore, the current organization control by the local government will be respected. The goal of the project concerning the operation and maintenance system will be to upgrade and setup a stronger structure of the existing organization control through the technical support of this project.

[Appendices]

- 1. Member List of the Study Team**
- 2. Study Schedule**
- 3. List of the Parties Concerned in the Recipient Country**
- 4. Minutes of Discussions**
- 5. References and Documents**

1. *Member List of the Study*

(1) Implementation Review Study (1st Aug, 2009 – 3rd Sep, 2009)

No	Member	Duty	Organization
1.	Mr. Katsuhiro SASAKI	Team Leader	JICA
2.	Mr. Shinichiro FUTAMI	Aid Coordinator	JICA
3.	Mr. Takeshi SAHEKI	Planning Management	JICA
4.	Mr. Shuji YAMASHITA	Chief Consultant/ Water Supply	KOKUSAI KOGYO
5.	Mr. Kensuke ICHIKAWA	Groundwater Development	KOKUSAI KOGYO
6.	Mr. Takeshi ABE	Construction and Procurement Planning/Cost Estimation	KOKUSAI KOGYO

2. *Study Schedule*

(1) Implementation Review Study

Days	Date	JICA			Consultant				
		Mr. Katsuhiro SASAKI Team Leader	Mr. Shinichiro FUTAMI Aid Coordinator	Mr. Takeshi SAHEKI Planning Management	Mr. Shuji YAMASHITA Chief Consultant/Water Supply Facility Planning	Mr. Takeshi ABE Construction Planning/Cpst Estimation	Mr. Kensaku ICHIKAWA Groundwater Development Planning		
1	8/1/S					Trip (HND-KIX-DXB)			
2	8/2/S					Trip (DXB-ADD)			
3	8/3/M					Survey for Cost Estimation			
4	8/4/T					Survey for Cost Estimation			
5	8/5/W					Survey for Cost Estimation			
6	8/6/T					Survey for Cost Estimation			
7	8/7/F					Survey for Cost Estimation			
8	8/8/S					Trip (ADD-Mekele)			
9	8/9/S					Field Survey			
10	8/10/M					Field Survey			
11	8/11/T					Field Survey			
12	8/12/W					Field Survey			
13	8/13/T					Field Survey			
14	8/14/F					Field Survey			
15	8/15/S			Trip (HND-KIX-DXB)	Trip (HND-KIX-DXB)	Field Survey	Trip (HND-KIX-DXB)		
16	8/16/S			Trip (DXB-ADD), Meeting with JICA	Trip (DXB-ADD), Meeting with JICA	Trip (Mekele-ADD)	Trip (DXB-ADD), Meeting with JICA		
17	8/17/M	Visit to MoWR and MoFED				Survey for Cost Estimation	Visit to MoWR and MoFED		
18	8/18/T	Trip (ADD-Mekele), Meeting with TWRMEB				Survey for Cost Estimation	Trip (ADD-Mekele), Meeting with TWRMEB		
19	8/19/W	Meeting with TWRMEB, Field Survey		Meeting with TWRMEB		Survey for Cost Estimation	Meeting with TWRMEB, Field Survey		
20	8/20/T	Discussion with TWRMEB and BoFED				Survey for Cost Estimation	Field Survey		
21	8/21/F	Discussion and signing M/D with TWRMEB, Field Survey		Discussion and signing with TWRMEB, Meeting with TWRMEB		Survey for Cost Estimation	Field Survey		
22	8/22/S	Field Survey				Survey for Cost Estimation	Field Survey		
23	8/23/S	Field Survey				Survey for Cost Estimation	Trip (Mekele-ADD)		
24	8/24/M	Trip (Mekele-ADD), Visit at EWTEC		Meeting with TWRMEB		Survey for Cost Estimation	Trip (ADD-DXB)		
25	8/25/T			Trip (ADD-DXB)	Meeting with TWRMEB	Trip (ADD-DXB)	Trip (DXB-KIX-HND)		
26	8/26/W			Trip (DXB-KIX-HND)	Meeting with TWRMEB	Trip (DXB-KIX-HND)			
27	8/27/T				Meeting with TWRMEB				
28	8/28/F				Field Survey				
29	8/29/S				Field Survey				
30	8/30/S				Field Survey				
31	8/31/M				Meeting with TWRMEB				
32	9/1/T				Trip (Mekele-ADD), Meeting with JICA				
33	9/2/W				Trip (ADD-DXB)				
34	9/3/T				Trip (DXB-KIX-HND)				

3. *List of Parties Concerned*
in the Recipient Country

(1) Ministry of Water Resource

Mr. Asfaw Dingamo Minister

(2) Ministry of Finance and Economic Development

Mr. Tilahun Tadesse Director
Ms. Asnagach Tefera Team Leader

(3) Tigray Water Resources, Mines and Energy Bureau

Mr. Michael Tsehayu Bureau Head
Mr. Solomon Abera Deputy Bureau Head
Mr. Alemseged Mekonnen Support Process Owner, Procurement Finance & Property Management
Mr. Haile Kidance Support Process Owner, Development Planning

(4) Tigray Bureau of Finance and Economic Development

Mr. Mearuf Nurhunssien Mohamedzien Bureau Head

(5) Raya Azebo Woreda Water Resources Mines & Energy Office

Mr. Kflom Haile Head, Administrator

(6) Enderta Woreda Water Resouces Mines & Energy Office

Mr. Haile Selassies Office Head
Mr. Mandere Teka Head, Water Source Management

(7) Ethiopia Water Technology Center

Dr. Akira Kamata Kokusai Kogyo Co., Ltd
Mr. Masahiko Ikemoto Kokusai Kogyo Co., Ltd

4. *Minutes of Discussions*

Minutes of Discussion (M/D-1/13)

**MINUTES OF DISCUSSIONS
ON THE IMPLEMENTATION REVIEW STUDY
ON THE PROJECT FOR RURAL WATER SUPPLY IN TIGRAY REGION
IN THE FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA**

The Japan International Cooperation Agency (hereinafter referred to as "JICA") dispatched an Implementation Review Study Team (hereinafter referred to as "the Team") on the Project for Rural Water Supply in Tigray Region (hereinafter referred to as "the Project") to the Federal Democratic Republic of Ethiopia in August 2009.

Through a series of discussions and technical examinations, the Team and the Tigray Water Resources, Mines and Energy Bureau (hereinafter referred to as "TWRMEB"), the Government of Tigray Regional State agreed to the documents attached hereto.

Mekele, 21st August 2009

Mr. Katsuhiro Sasaki
Leader,
Implementation Review Study Team
Japan International Cooperation Agency,
Japan

Mr. Michael Tschayert
Bureau Head,
Water Resources, Mines and Energy
Bureau, Tigray National Regional State
Federal Democratic Republic of Ethiopia

Mr. Meayuf Nurhusien Mehmedzien
Bureau Head,
Bureau of Finance and Economic
Development,
Tigray National Regional State,
Federal Democratic Republic of Ethiopia

ATTACHMENT

1. Japan's Grant Aid Scheme

The TWRMEB agreed on the Japan's Grant Aid Scheme and the necessary measures to be taken by the Government of Ethiopia as written in Annex 1 and Annex 2 as attached.

2. Components of the Project

The TWRMEB agreed that the components of the Project will be determined after the field survey conducted in this mission. In principal, the components will be the same design as the detail design carried out in 2007 as shown in Annex 3 as attached.

3. Schedule of the Study

JICA will finalize the study report in January 2010 and will submit to the TWRMEB.

4. Other Relevant Issues

(1) Modification of the construction plan

1) Construction of wells for piped water supply schemes

Test wells for piped water supply schemes in Gerjele town, Hadealga and Hirka will be drilled by the consultants in detailed design stage of upcoming project. The purpose of the test well drilling is to reduce the risk of contractors in regard of drilling the wells which requires large production volume. The wells to be drilled are shown in Table 1 as follows;

Table 1 Test wells to be drilled in the detailed design

	Wareda	Village	Required yield (L/min)
No.1	Alamata	Gerjele	312
No.2	Raya Azebo	Hadealga	336
No.3		Hirka	306

* Water quality should satisfy the Ethiopian standard

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Successful test wells will be used for the water source of the piped water supply schemes. In case the water yield does not satisfy the original design, another test well will be drilled. If the yield does not satisfy again, the design will be considered to change. The procedure for decision of changing the design is shown in Figure 1 as follows;

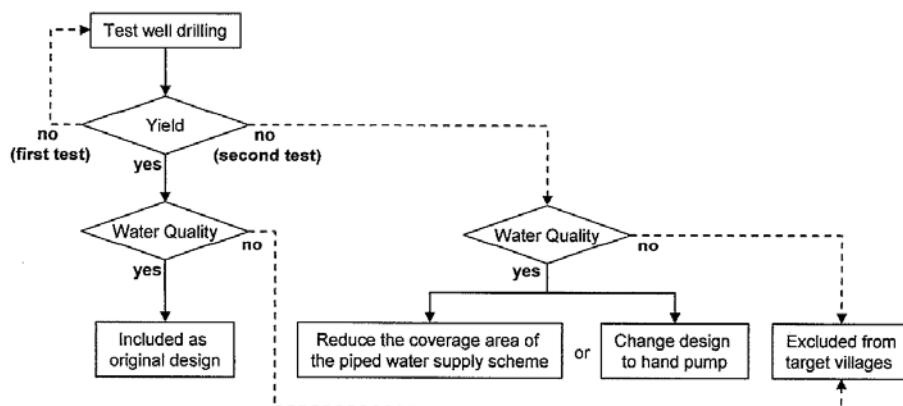


Figure 1 Flow chart of drilling test wells and changing the design

2) Cost settlement of handpump water supply facilities by BQ (Bill of Quantity)

Total construction cost of handpump water supply facilities is estimated by integrating the number of successful wells and unsuccessful wells. The number of unsuccessful wells is determined by the figure analyzed in the basic design study.

In the previous tendering, the contract price was lumpsum price for constructing the planned number of successful wells. In order to reduce the gap between the estimated number of unsuccessful wells and the actual number of unsuccessful wells, BQ method is planned to be applied to the contract.

In the BQ method, the bidders (Japanese contractors) shall bid the unit price and the total construction cost calculated by the estimated total number of wells to be drilled including the unsuccessful wells. If the planned number of successful wells was drilled before reaching the estimated number to be drilled, the contractor will continue to construct the wells within the agreed total construction cost. The number of the additional wells will be adjusted in the amount of the remaining contract price. In case if the contractor could not reach the planned number of successful wells within the agreed total construction cost, the number of successful wells will be decreased as a result.

The Team explained the above method and the TWRMEB agreed. However the TWRMEB requested to secure the 82 satisfied wells. The Team explained that in case of applying the above method, 82 satisfied wells cannot be committed, though 82 satisfied wells are estimated to be constructed regarding to the basic design study.

3) Tender lot

The Project will be divided into three lots, which are construction of piped water supply schemes, construction of boreholes with hand-pumps and procurement of the equipments. The time for the tendering of piped water supply schemes depends on the results of the test well drilling in the detail design stage. The team explained to the TWRMEB that the tendering will be held as fast as possible.

4) Procurement of the materials

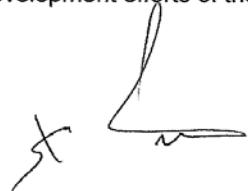
In terms of the recent situation of the Ethiopia, materials such as ductile cast iron pipes and cement are difficult to procure or product inside the country. In this regard, some materials will be procured from the third countries as a result of this study.

5) Confirmation of recent situation of the project sites

Accessibility and the recent situation of the project sites will be surveyed in this study. In case the other water supply schemes which overlap with the project water supply schemes were constructed, and if there were no relevant alternative site to construct in the same village, the village will be excluded from the Project sites.

(2) Preparation of budget for the VAT and the customs duties

The Team requested the Bureau of Finance and Economic Development of Tigray National Regional State (hereinafter referred to as BOFED) to secure the budget for refunding the VAT and the custom duties. The BOFED answered to the team that they will communicate with the TWRMEB to prepare the estimated amount of budget needed for refunding VAT and custom duties related to the Project under the Exchange of Notes and the Grant Agreement before its commencement. The bureau also expressed its readiness to support the effective implementation of the Project in all possible ways of doing so as developing water is critical to the success of development efforts of the region.

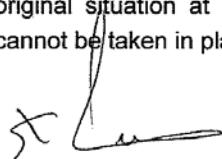
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(3) Capacity building for the TWRMEB engineers

The TWRMEB requested to the Team to include the capacity building programme in terms of water supply designing into the soft component of the Project. The Team explained that the purpose of the soft component is to ensure the sustainable operation and maintenance of the facilities and the requested programme should be conducted under the programme of Ethopian Water Technology Centre.

(4) Utilization of the drilled well in Raya Azebo

The TWRMEB requested to utilize the existing well drilled in the previous basic design study to supply the water temporally to the areas suffering from the recent drought. The Team accepted the request. However, the well should be returned to the original situation at the commencement of the construction, otherwise the project cannot be taken in place.



Annex-1

JAPAN'S GRANT AID

The Government of Japan (hereinafter referred to as "the GOJ") is implementing the organizational reforms to improve the quality of ODA operations, and as a part of this realignment, a new JICA law was entered into effect on October 1, 2008. Based on this law and the decision of the GOJ, JICA has become the executing agency of the Grant Aid for General Projects, for Fisheries and for Cultural Cooperation, etc.

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

1. Grant Aid Procedures

The Japanese Grant Aid is supplied through following procedures:

- Preparatory Survey
 - The Survey conducted by JICA
- Appraisal &Approval
 - Appraisal by the GOJ and JICA, and Approval by the Japanese Cabinet
- Authority for Determining Implementation
 - The Notes exchanged between the GOJ and a recipient country
- Grant Agreement (hereinafter referred to as "the G/A")
 - Agreement concluded between JICA and a recipient country
- Implementation
 - Implementation of the Project on the basis of the G/A

2. Preparatory Survey

(1) Contents of the Survey

The aim of the preparatory Survey is to provide a basic document necessary for the appraisal of the Project made by the GOJ and JICA. The contents of the Survey are

as follows:

- Confirmation of the background, objectives, and benefits of the Project and also institutional capacity of relevant agencies of the recipient country necessary for the implementation of the Project.
- Evaluation of the appropriateness of the Project to be implemented under the Grant Aid Scheme from a technical, financial, social and economic point of view.
- Confirmation of items agreed between both parties concerning the basic concept of the Project.
- Preparation of a basic design of the Project.
- Estimation of costs of the Project.

The contents of the original request by the recipient country are not necessarily approved in their initial form as the contents of the Grant Aid project. The Basic Design of the Project is confirmed based on the guidelines of the Japan's Grant Aid scheme.

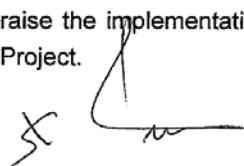
JICA requests the Government of the recipient country to take whatever measures necessary to achieve its self-reliance in the implementation of the Project. Such measures must be guaranteed even though they may fall outside of the jurisdiction of the organization of the recipient country which actually implements the Project. Therefore, the implementation of the Project is confirmed by all relevant organizations of the recipient country based on the Minutes of Discussions.

(2) Selection of Consultants

For smooth implementation of the Survey, JICA employs (a) registered consulting firm(s). JICA selects (a) firm(s) based on proposals submitted by interested firms.

(3) Result of the Survey

JICA reviews the Report on the results of the Survey and recommends the GOJ to appraise the implementation of the Project after confirming the appropriateness of the Project.



3. Japan's Grant Aid Scheme

(1) The E/N and the G/A

After the Project is approved by the Cabinet of Japan, the Exchange of Notes(hereinafter referred to as "the E/N") will be signed between the GOJ and the Government of the recipient country to make a pledge for assistance, which is followed by the conclusion of the G/A between JICA and the Government of the recipient country to define the necessary articles to implement the Project, such as payment conditions, responsibilities of the Government of the recipient country, and procurement conditions.

(2) Selection of Consultants

In order to maintain technical consistency, the consulting firm(s) which conducted the Survey will be recommended by JICA to the recipient country to continue to work on the Project's implementation after the E/N and G/A.

(3) Eligible source country

Under the Japanese Grant Aid, in principle, Japanese products and services including transport or those of the recipient country are to be purchased. When JICA and the Government of the recipient country or its designated authority 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, constructing and procurement firms, and the prime consulting firm are limited to "Japanese nationals".

(4) 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 JICA. This "Verification" is deemed necessary to fulfill accountability to Japanese taxpayers.

(5) Major undertakings to be taken by 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 Annex.

(6) "Proper Use"

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

(7) "Export and Re-export"

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

(8) Banking Arrangements (B/A)

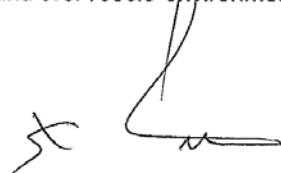
- a) The Government of the recipient country or its designated authority should open an account under the name of the Government of the recipient country in a bank in Japan (hereinafter referred to as "the Bank"). JICA will execute the Grant Aid by making payments in Japanese yen to cover the obligations 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 JICA 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 paid to the Bank.

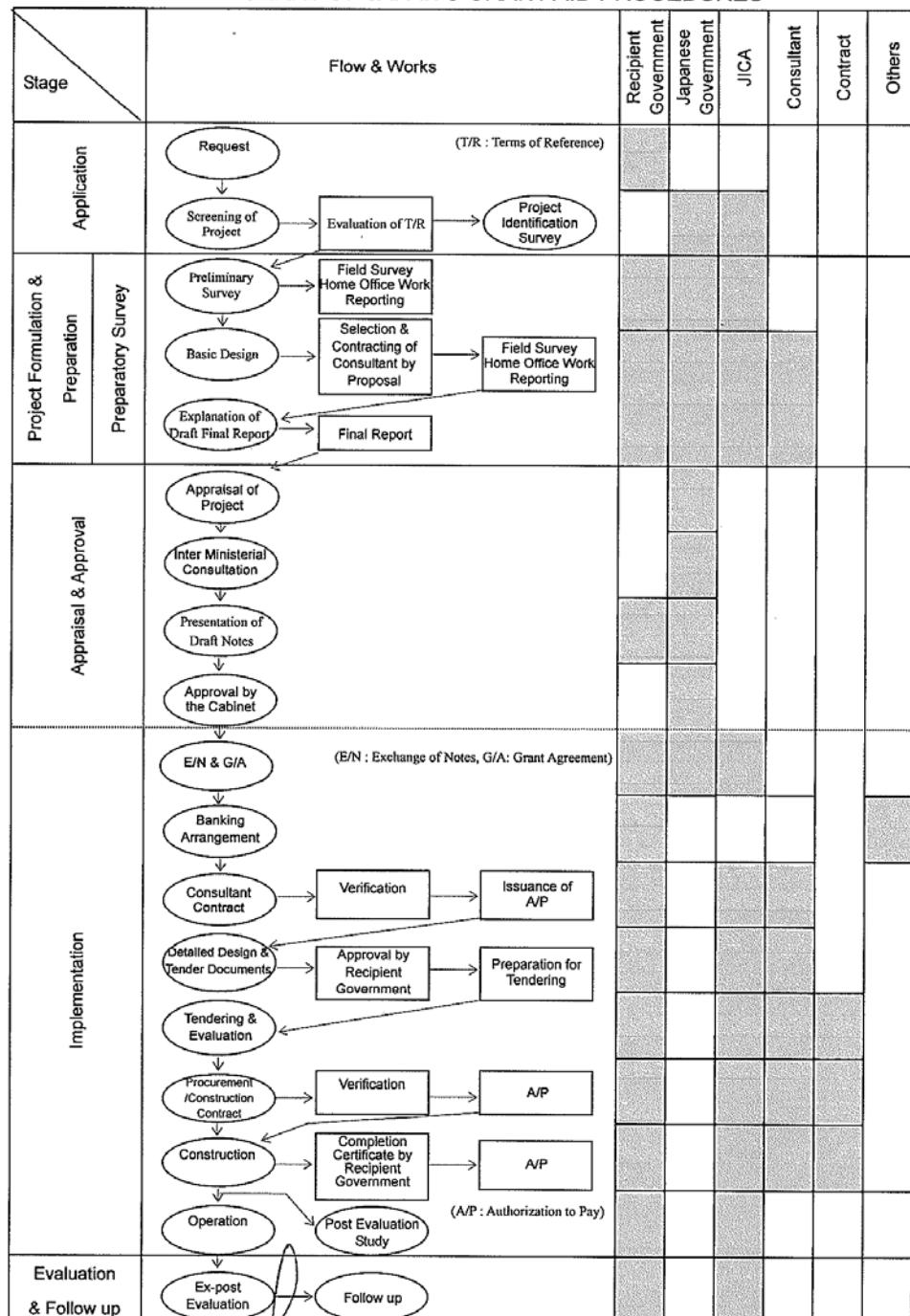
(10) Social and Environmental Considerations

A recipient country must carefully consider social and environmental impacts by the Project and must comply with the environmental regulations of the recipient country and JICA socio-environmental guidelines.



(End)

FLOW CHART OF JAPAN'S GRANT AID PROCEDURES



Annex-2

Major Undertakings to be taken by Each Government (Facilities)

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 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 truck line to the main distribution frame/panel (MDF) of the building		●
	b. The MDF and the extension after the frame/panel.	●	
	6) Furniture and Equipment		
	a. General furniture		●
	b. Project equipment	●	
8	To bear the following commissions to the Japanese bank for banking services based upon the B/A		
	1) Advising commission of A/P		●
	2) Payment commission		●
9	To ensure unloading and customs clearance at port of disembarkation in recipient country		
	1) Marine (Air) transportation of the products from Japan the recipient	●	
	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	(●)	(●)
10	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		●
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 contracts		●
12	To maintain and use properly and effectively the facilities contracted and equipment provided under the Grant		●
13	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		●

Major Undertakings to be taken by Each Government (Equipment)

No.	Items	To be covered by Grant Aid	To be covered by Recipient Side
1	To bear the following commissions to the Japanese bank for banking services based upon the B/A		
	(1)Advising commission of A/P		●
	(2)Payment commission		●
2	To ensure unloading and customs clearance at port of disembarkation in recipient country		
	(1) Marine (Air) transportation of the products from Japan the recipient	●	
	(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	(●)	(●)
3	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		●
4	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 contracts		●
5	To maintain and use properly and effectively the facilities contracted and equipment provided under the Grant Aid		●
6	To bear all the expenses, other than those to be borne by the Grant Aid, necessary for the transportation and installation of the equipment		●




Annex-3

Component of the Project for Rural Water Supply in Tigray Region

- Construction of Level 1 water supply facilities 82 sites
- Construction of Level 2 water supply facilities 9 sites
- Rehabilitation of Level 2 water supply facilities 3 sites
- Procurement of Equipment 1 set
- Capacity building for operation and maintenance of the facilities

List of Equipment to be Procured

No.	Item	Q'ty
A Equipment for Well Rehabilitation		
A1	Service Rig with Accessories	1 unit
B Pumping Test Equipment and Tools		
B1	Cargo Truck with Crane	1 unit
B2	Submersible Pump with Accessories	1 unit
B3	Generator	1 unit
B4	V-Notch Weir	1 unit
B5	Water Level Meter	1 unit
B6	pH Meter	1 unit
B7	Conductance/TDS Meter	1 unit
B8	ORP Meter	1 unit
B9	Turbidity Meter	1 unit
C Equipment for Maintenance Works and Transportation of hand pump well		
C1	Cargo Truck with Crane	2 unit

5. *References and Documents*

(1) List of References and Documents

No	Name	Forms Print • Video Map • Photo etc	Original/ Copy	Published Organization	Year
1	Manual for Technical Design Standard for the Tigray Region	Print	Copy	TWRMEB	-
2	Water supply “Design Working standard Guidelines”	Print	Copy	TWRMEB Water resources Management, Regulatory and Database department	2005
3	Labor Proclamation No.377/2003	Print	Copy	Ministry of Labor and social Affairs	2004
4	Ethiopia: sustainable Development and Poverty Reduction Program (SDPRP) Interim annual Progress Report(2003/04)	Print	Copy	Ministry of Finance and Economic Development	2004
5	Explanation of the Geological Map of Ethiopia Scale 1:2,000,000, 2 nd edition	Print	Copy	Ethiopia Geological survey	1996
6	A Proposal Paper for Hydro geological Mapping of Ethiopia	Print	Copy	Provisional Military Government of socialist Ethiopia Hydrogeology and Engineering Geology Division	1984
7	Evaluation of Aynalem Well Field and Selection of Prospective Well Fields around Mekelle Town for Water supply source Draft final Report Volume II : Evaluation of groundwater potential	Print	Copy	Water Works Design and supervision Enterprise	2006
8	Customs Tariff (Based on the 2002 version of the HS), Volume I	Soft file	Original	ECA	2003
9	Customs Tariff (Based on the 2002 version of the HS), Volume II	Soft file	Original	ECA	2003
10	Rural Water Supply and Sanitation Program Regional Implementation Guidelines Tigray Region	Soft file	Original	Federal Democratic Republic of Ethiopia Ministry of Water	2004

No	Name	Forms Print·Video Map · Photo etc	Original/ Copy	Published Organization	Year
				Resource	
11	Urban Water Supply and Sanitation Program Regional Implementation Guidelines Tigris Region	Soft file	Original	Federal Democratic Republic of Ethiopia Ministry of Water Resource	2004
12	Water Supply and Sanitation Program Implementation Manual	Soft file	Original	Federal Democratic Republic of Ethiopia Ministry of Water Resource	2004
13	Budget for Regional Rural WSS Program	Soft file	Original	-	-
14	Budget for Regional Urban WSS Program	Soft file	Original	-	-
15	Rainfall data in adigrat, alamata, hagerselam, korem, maichew, makele, senkata, waja, wedisemero	Soft file	Original	NMS	-
16	Maximum Temperature data in adigrat, alamata, hagerselam, korem, maichew, makele, senkata, waja, wedisemero	Soft file	Original	NMS	-
17	Minimaum Temperature in adigrat, alamata, hagerselam, korem, maichew, makele, senkata, waja, wedisemero	Soft file	Original	NMS	-
18	Ethiopia Map 1:50,000 (3913A~D、3912A~D)	Map	Original	Ethiopian Mapping Authority	-
19	Ethiopia Map 1:250,000 (37MC2~4、37MD10~16)	Map	Original	Ethiopian Mapping Authority	-
20	Contract Agreement Made Between Tigray Water Works construction Enterprise and Tigray Water Resources Development Commission For Tirkan, Shimeri, Shiglli, and Ruwassa Water Supply Projects	Print	Copy	Tigray Water Resources Development	2005
21	Memorandum of Understanding among the Tigray Region Government represented by the	Print	Copy	-	-

No	Name	Forms Print • Video Map • Photo etc	Original/ Copy	Published Organization	Year
	Bureau of Water and Mines Resources Development & Tigray Water works construction Enterpriser & UNICEFF on the cooperation for the development of the Rural Water Supply Sector inTigray				
22	Contract Agreement Between Tigray Water Resources Development Commission And Tigray Water Works Construction Enterprise for Construction of Adi-Gebru Water Supply System	Print	Copy	National Regional State of Tigray Water Resources Development Commission	2005
23	Summary and Statistical Report of the 2007 Population and Housing Census	Soft file	Original	Federal Democratic Republic of Ethiopia Population Census Commission	

(2) List of Target Sites for drilling

I. Construction Site for Hand pump well

No.	PJ ID	WOREDA	TABIA	KUSHET	GOTE	COORDINATION			Beneficiaries (2006) (Request Form)	Facility Type	Well Structure Type	Drilling Method	Estimated Drilling Depth (m)
						UTM E (m)	UTM N (m)	Level (m)					
1 JAL007	Alamata	Timuga	Kunkura	Maeedo Ketema	565499	1357078	1437	428	Level 1	DMCD	Type I	DMCD	100
2 JAL010	Alamata	Selenwuha	Kubiderba	Amgedel	570738	1365109	1407	299	Level 1	DMCD	Type I	DMCD	100
3 JAL011	Alamata	Selenwuha	Gedera	Gedera	568138	1363597	1569	671	Level 1	DMCD	Type I	DMCD	100
4 JAL012	Alamata	Weselenwuha (Limat)	Adi hagos tsegay	Endasiasie(Adihana)	567594	1367414	1460	323	Level 1	DMCD	Type I	DMCD	100
5 JAL013	Alamata	Limat	Adiabogoa	Sifraamora	561298	1364409	1538	300	Level 1	DMCD	Type I	DMCD	100
6 JAL014	Alamata	Limat	Hashiamariam	Hashiamariam	558766	1370039	1439	420	Level 1	DMCD	Type I	DMCD	100
7 JAL015	Alamata	Selam bikalsi	Rarhe	Rarhe	561506	1370065	1524	819	Level 1	DMCD	Type I	DMCD	100
8 JAL017	Alamata	Selam bikalsi	Adimohoye	Adimohoye	565809	1371093	-	900	Level 1	DMCD	Type I	DMCD	100
9 JAL018	Alamata	Selam bikalsi	Hadis kigni	Hadis Kigni	566690	1372156	1580	308	Level 1	DMCD	Type I	DMCD	100
10 JAL019	Alamata	Kululemlem	Adishihashim	Adishihashim	565230	1378203	1482	520	Level 1	DMCD	Type I	DMCD	100
11 JAL020	Alamata	Kulugize Zemlem	Agamitie	Akabake	-	-	-	-	Level 1	DMCD	Type I	DMCD	100
12 JAL022	Alamata	Tao	Adirantia	Adirantia	568277	1380792	1453	429	Level 1	DMCD	Type I	DMCD	100
13 JAL023	Alamata	Wajia ketema	Wajia ketema	Wajia ketema	565335	1357958	1452	358	Level 1	DMCD	Type I	DMCD	100
14 JAL024	Alamata	Selenwuha	Harle	Harle school	565270	1363886	1467	488	Level 1	DMCD	Type I	DMCD	100
15 JAL025	Alamata	Limat	Adieshok	Alembirhan school	564126	1365675	1480	502	Level 1	DMCD	Type I	DMCD	100
16 JRA012	Raya Azebo	Bala Uiga	Butamrifeta	Buta	585379	1372176	1677	1,000	Level 1	DMCD	Type I	DMCD	100
17 JRA013	Raya Azebo	Bala Uiga	Ujada	Bisebir	587904	1375584	1604	900	Level 1	DMCD	Type I	DMCD	100
18 JED001	Enderta	Maianbesa	Maianmer	Around school	544738	1492526	2122	800	Level 1	DTH	Type II	DTH	90
19 JED003	Enderta	Maianbesa	Maiayni	Maiayni	541577	1491125	2180	900	Level 1	Type II	DTH	DTH	60
20 JED005	Enderta	Maialem	Mishim	Mishim	543600	1495723	2016	1,300	Level 1	Type II	DTH	DTH	90
21 JED006	Enderta	Maialem	Zibanhidde	Zibanhidde	543913	1496414	2059	700	Level 1	Type II	DTH	DTH	90
22 JED008	Enderta	Debri	Mekah	Kokahi	545491	1488261	2094	600	Level 1	Type II	DTH	DTH	80
23 JED009	Enderta	Debri	Adiamik	Adikolkal	551959	1496500	1982	570	Level 1	Type II	DTH	DTH	60
24 JED015	Enderta	Mariam dehan	Akeb demamu	Akeb demamu	550671	1478038	2016	800	Level 1	Type II	DTH	DTH	130
25 JED019	Enderta	Chelekot	Maekelgeza	Randa	556070	1486658	2226	600	Level 1	Type II	DTH	DTH	100
26 JED024	Enderta	Shibia	Randa	Egriwenber	555920	14911495	2238	890	Level 1	Type II	DTH	DTH	80
27 JED025	Enderta	Shibia	Akeza	Akeza	572574	1485581	2473	800	Level 1	Type II	DTH	DTH	70
28 JED033	Enderta	Lemlem	Kembrito	Kembrito	554930	1525556	2102	680	Level 1	Type II	DTH	DTH	100
29 JKA001	Kilti Awlaelo	Mai quina	Maidero	Gelebet	546070	1528527	2104	300	Level 1	Type II	DTH	DTH	100
30 JKA003	Kilti Awlaelo	Debretsiyon	Debremear	Debremear	543903	1530533	2021	500	Level 1	Type II	DTH	DTH	100
31 JKA004	Kilti Awlaelo	Debretsiyon	Tsahilo	Kokay	561369	1526622	-	600	Level 1	Type II	DTH	DTH	100
32 JKA009	Kilti Awlaelo	Gemedee	Awolo	Ziban adi	54998	1520609	2081	395	Level 1	Type II	DTH	DTH	100
33 JKA012	Kilti Awlaelo	Genfel	Dengolo	Adiarbeea	562457	1524640	2001	600	Level 1	Type II	DTH	DTH	100
34 JKA016	Kilti Awlaelo	Genfel	Stiret	Endamariam	512908	1501556	2624	370	Level 1	Type II	DTH	DTH	60
35 JDT003	Degua Temben	Selam	Adiwerho	Adiwerho	521155	1511001	2216	320	Level 1	Type II	DTH	DTH	100
36 JDT011	Degua Temben	A Kekn	Alasa	Alasa	529257	1512874	2415	310	Level 1	Type II	DTH	DTH	150
37 JDT012	Degua Temben	A Kekn	Raset	Raset	527934	1510595	2433	350	Level 1	Type II	DTH	DTH	150
38 JDT013	Degua Temben	A Kekn	Fikre Selam	Aderak	552401	1456945	2235	500	Level 1	Type III	DTH	DTH	150
39 JHW005	Hintalo Wairrat	Senale	Genti	Arbaensa	-	-	-	-	Level 1	Type III	DTH	DTH	60
40 JHW012	Hintalo Wairrat	Hareqo	Adikifom	Adikifom	538705	1461990	2083	300	Level 1	Type III	DTH	DTH	130
41 JHW013	Hintalo Wairrat	Merkel	Neteef	Neteef	536194	1480072	-	300	Level 1	Type III	DTH	DTH	60

No.	PJ ID	WOREDA	TABIA	KUSHET	GOTE	COORDINATION			Beneficiaries (2006) (Request Form)	Facility Type	Well Structure Type	Drilling Method	Estimated Drilling Depth (m)	
						UTM E (m)	UTM N (m)	Level (m)						
43	JKA017	Kilt Awlaelo	Abreha atsibha	Selam	Adikulala	556580	1532494	2016	320	Level 1	Type III	DTH	100	
44	JKA018	Kilt Awlaelo	Abreha atsibha	Selam	Maichew	554153	1531491	1982	360	Level 1	Type III	DTH	60	
45	JKA019	Kilt Awlaelo	Abreha atsibha	Mindae	Adinfas	-	-	-	-	Level 1	Type III	DTH	80	
46	JD1001	Degua Temben	Mahiberesitase	Waseya a	513576	1510203	2583	350	Level 1	Type III	DTH	100		
47	JDT004	Degua Temben	Siret	Mahiberesh	Mahiberesh	516912	1503075	2601	250	Level 1	Type III	DTH	100	
48	JDT018	Degua Temben	Arebay	Arebay	Arabay	528850	1516704	2631	350	Level 1	Type III	DTH	60	
49	JDT019	Degua Temben	Arebay	Kelkelle	Kelkelle	528298	1518859	2442	350	Level 1	Type III	DTH	150	
50	JKT001	Kola Temben	Merere	Chimate	Tsekerte	481757	1512498	1946	250	Level 1	Type III	DTH	60	
51	JKT005	Kola Temben	Santa gelebeda	Betro	Ater	522688	1529992	-	450	Level 1	Type III	DTH	60	
52	JKT008	Kola Temben	Getiski meisley	Endamariam	Sheka	500819	1511288	1892	240	Level 1	Type III	DTH	100	
53	JKT009	Kola Temben	Getiski meisley	Sataya	Wersge	502078	1516122	1844	440	Level 1	Type III	DTH	60	
54	JKT012	Kola Temben	Simret	Adichelo	Tsamii	487713	1505773	1952	215	Level 1	Type III	DTH	60	
55	JKT013	Kola Temben	Adiha	Siken	Tahitay Siken	508235	1520534	1733	265	Level 1	Type III	DTH	60	
56	JKT014	Kola Temben	Workemba	Etanzone	Guzara	504722	1519889	15889	240	Level 1	Type III	DTH	60	
57	JKT017	Kola Temben	Shilumenni	Tsimatisiwa	Tseweinya	478652	1503176	1691	315	Level 1	Type III	DTH	60	
58	JTA001	Tanqua Abergele Lem'at	Abiyaquo	Abiyaquo	Firtasge	494591	1497600	1689	1,834	Level 1	Type III	DTH	80	
59	JTA002	Tanqua Abergele Lem'at	Adimiale	Guffamne	Guffamne	-	-	-	-	Level 1	Type III	DTH	80	
60	JTA005	Tanqua Abergele Felegehiwot	Ereznia	Hidmo(1)	Hidmo(1)	483706	1468478	1228	520	Level 1	Type III	DTH	80	
61	JTA006	Tanqua Abergele Felegehiwot	Hidmo(2)	Hidmo(2)	Erezna	489234	1467954	1298	460	Level 1	Type III	DTH	80	
62	JTA007	Tanqua Abergele Siye	Gomengie	Gomengie	Hidmo(1)	483988	1485553	1446	600	Level 1	Type III	DTH	80	
63	JTA008	Tanqua Abergele Siye	Teklemkerira	Teklemkerira	Hidmo(2)	481790	1483764	1501	400	Level 1	Type III	DTH	80	
64	JTA009	Tanqua Abergele Siye	Metere	Metere	Gomengie	478833	1487800	1445	510	Level 1	Type III	DTH	80	
65	JTA011	Tanqua Abergele Siye	Jijique	Jijique	Teklemkerira	483783	1477320	1277	600	Level 1	Type III	DTH	80	
66	JTA012	Tanqua Abergele Siye	Wete Kezena	Wete Kezena	Metere	487775	1482792	1385	500	Level 1	Type III	DTH	80	
67	JTA018	Tanqua Abergele Jijique	Fenarewa	Fenarewa	Jijique	481252	1489519	1724	380	Level 1	Type III	DTH	80	
68	JSS002	Seharti Samre	Nebet Hadne	Tahitay Teshalew	Vete Kezena	503924	1447967	1493	175	Level 1	Type III	DTH	60	
69	JSS003	Seharti Samre	Nebet Hadne	Sebonye	Sebonye	503827	1449995	1575	195	Level 1	Type III	DTH	60	
70	JSS007	Seharti Samre	Lemlem Aren	Laelay Seberia	Laelay Seberia	527958	1451911	1706	200	Level 1	Type III	DTH	60	
71	JSS008	Seharti Samre	Lemlem Aren	Sebonye	Tahitay Seberia	527869	1451647	1693	250	Level 1	Type III	DTH	60	
72	JSS009	Seharti Samre	May Tekli	Terezeba	Bereziba	-	-	2007	190	Level 1	Type III	DTH	60	
73	JSS013	Seharti Samre	Bamba	Bamba	Harawa	507913	1482311	1611	180	Level 1	Type III	DTH	60	
74	JHW001	Hawzen	Adibelow	Merehuwa	Merehuwa	-	531679	1541602	1915	700	Level 1	Type III	DTH	120
75	JHW003	Hawzen	Balleda	Adigefah	Adigefah	539825	1553409	1913	500	Level 1	Type III	DTH	150	
76	JHW005	Hawzen	Debrebizen	Setet	Setet	-	541404	1560528	2107	410	Level 1	Type III	DTH	100
77	JHW007	Hawzen	Debreselam	Berakit	Berakit	535172	1540214	1916	500	Level 1	Type III	DTH	120	
78	JHW10	Hawzen	Meztey	Dabaseria	Dabaseria	-	551969	1554971	2300	550	Level 1	DMCD	60	
79	JHW15	Hawzen	Degambba	Degambba	Degambba	-	550791	1557453	2380	500	Level 1	DTH	80	
80	JHW16	Hawzen	Degambba	Shikut	Shikut	-	550654	1559471	2345	400	Level 1	Type III	DTH	100
81	JHW17	Hawzen	Awadu	Awadu	Awadu	-	541745	1543912	2080	550	Level 1	Type III	DTH	130
82	JHW19	Hawzen	Debrehawaz	Silluh	Debrehawaz	-	546328	1546447	2231	490	Level 1	Type III	DTH	60

II . Construction Site for Motorized pump well

No.	PJ ID	WOREDA	TABIA	KUSHET	GOTE	COORDINATION			Beneficiaries (2006) (Request Form)	Facility Type	Well Structure Type	Drilling Method	Estimated Drilling Depth (m)
						UTM E (m)	UTM N (m)	Level (m)					
83	JAL004	Alamata	Gerjule	Gerjete	Gerjete town	566945	137916	1457	4,100	Level 2	Type V	DMCD	130
84	JAL005	Alamata	Laelay Dayu	Ula	Ula	563968	1382412	1575	2,150	Level 2	Type IV-1	DMCD	140
85	JRA001	Raya Azebo	Hadealga	Hadealga		583329	1395187	1508	2,000	Level 2	Type V	DMCD	135
86	JRA002	Raya Azebo	Hawiti	Hirka	Hirka	575382	1418205	1734	1,500	Level 2	Type V	DMCD	82
87	JRA003	Raya Azebo	Kara adishehu	Fondel	Fondel	568800	1402214	1684	1,250	Level 2	Type IV-1	DMCD	140
88	JRA007	Raya Azebo	Hadishkign	Tachqubegala	Tachqubegala	574791	1367533	1390	1,135	Level 2	Type IV-2	DMCD	82

[Abbreviation]

*** Facility Type**

Level 1 : Facility for hand pump well
 Level 2: Facility for motorized pump well

*** Well Structure Type**

Type I : Well Structure for Alluvium Deposits
 Type II : Well Structure for Limestone
 Type III : Well Structure for Sedimentary Rock and Bascence Rock
 Type IV : Well Structure for Motorized pump of 6" borehole
 Type V : Well Structure for Motorized pump of 8" borehole

*** Drilling Method**

DTH: Down the hole hammer
 DMCD: Dynamic Mudcap drilling

(3) Survey results of Target Sites

No.	WOREDA	Tabia	Kushet	Gote	Scheme	Duplication by the government or other donor's	Access to the site in the rainy season		Result
							Duplication	Type of facilities	
1	Alamata	Timuga	Kunkura	Maedo Ketema	Level 1	N/A			Passable
2	Alamata	Selenwuha	Kubiderba	Amgede	Leve 1	N/A			Passable
3	Alamata	Selenwuha	Gedera	Gedera	Level 1	N/A			Passable
4	Alamata	Weselenwuha (Limat)	Adi hagos tssegay	Endasiasse(Adihana)	Leve 1	N/A			Passable
5	Alamata	Limat	Adiabogaia	Sifraamora	Leve 1	N/A			Passable
6	Alamata	Limat	Hashiamariam	Hashiamariam	Leve 1	N/A			Passable
7	Alamata	Selam bikaisi	Rarhe	Rarhe	Leve 1	N/A			Passable
8	Alamata	Selam bikaisi	Adimohoye	Adimohoye	Leve 1	N/A			Passable
9	Alamata	Selam bikaisi	Hodis Kigni	Hodis Kigni	Leve 1	N/A			Passable
10	Alamata	Kululemlem	Adishishashim	Adishishashim	Leve 1	N/A			Passable
11	Alamata	Kuligize Zeniem	Agemiti	Agemiti	Leve 1	Government	Hand dug well	Akabake	Passable
12	Alamata	Tao	Adhantia	Adhantia	Leve 1	N/A			Passable
13	Alamata	Waja ketema	Waja ketema	Waja ketema	Leve 1	N/A			Passable
14	Alamata	Selenwuha	Harie	Harie school	Leve 1	N/A			Passable
15	Alamata	Limat	Adiestok	Alembirhan school	Leve 1	N/A			Passable
16	Alamata	Geriele	Geriele	Geriele town	Leve 2	N/A			Passable
17	Alamata	Laelay Davu	Uja	Uja	Leve 2	N/A			Passable in the dry season
18	Degua Temben	Siret	Erdamariam	Erdamariam	Leve 1	N/A			Passable
19	Degua Temben	Selam	Adiverho	Adiverho	Leve 1	N/A			Necessity of maintenance
20	Degua Temben	A Kelkn	Alasa	Alasa	Leve 1	N/A			Passable

11 Alamata **Kuligize Zeniem** **Agemiti** **Agemiti** **Leve 1** **Government** **Hand dug well** **Akabake** **Passable** **The facility was constructed by the Government. Now well is requested in the alternative site, Akabake**

No.	WORED A	Tabia	Kushnet	Gote	Scheme	Duplication by the government or other donors	Access to the site in the rainy season		Result
							Duplication	Type of facilities	
21	Degua Temben	A Kekin	Raset	Raset	Level 1	N/A			Passable
22	Degua Temben	Mahiberesilase	Waseya	Waseya	Level 1	N/A			Passable
23	Degua Temben	Siret	Mahibere Shih	Maniberesih	Level 1	N/A			Passable
24	Degua Temben	Arebay	Arebay	Arebay	Level 1	N/A			Passable
25	Degua Temben	Arebay	Kelkel	Kelkel	Level 1	N/A			Passable
26 Endereta Arato		Endarbashelema	Endarbashelema	Level 1	NGO	Hand pump	Alternative village	Study will be done in the Detailed Design	The site was drilled by the Save the Children. Therefore Woreda office does not request well drilling in the same village
27	Endereta	Maianbesa	Maumer	Around school	Level 1	N/A			Passable
28	Endereta	Maianbesa	Maiweyni	Maiayni	Level 1	N/A			Passable
29	Endereta	Maialem	Mishim	Mishim	Level 1	N/A			Passable
30	Endereta	Maialem	Zibanded	Zibanded	Level 1	N/A			Passable
31	Endereta	Debri	Mekaih	Kokahi	Level 1	N/A			Passable
32 Endereta Debri		Adiamik	Adiamik	Level 1	NGO	Hand pump	Makayh	Passable	The facility was constructed by Save the Children. New well is requested in the alternative site, Mekayh
33	Endereta	Mariam dehan	Adikolkal	Adikolkus	Level 1	N/A			Passable
34	Endereta	Cheleket	Meekolgeza	Akeb demamu	Level 1	N/A			Passable
35	Endereta	Shibta	Randa	Randa	Level 1	N/A			Passable
36	Endereta	Shibta	Egriwerber	Egriwerber	Level 1	N/A			Passable
37 Endereta Lemlem		Lahama	Lahama	Level 1	UNICEF	Hand pump	Alternative village	Study will be done in the Detailed Design	The site was drilled by the Unicef. Therefore Woreda office does not request well drilling in the same village
38	Endereta	Lemlem	Akeza	Akeza	Level 1	UNICEF	(Dry well)	Same site	Passable
39	Hawzen	Merzey	Dabaseria	-	Level 1	N/A			Passable
40	Hawzen	Adibelow	Mererhuwa	-	Level 1	N/A			Necessity of maintenance

No.	WOREDA	Tabia	Kushet	Gote	Scheme	Duplication by the government or other donors			Access to the site in the rainy season	Result
						Duplication	Type of facilities	Alternative site		
41	Hawzen	Balieda	Adigerah	-	Level 1	N/A			Passable	
42	Hawzen	Debrezien	Setet	-	Level 1	N/A			Passable	
43	Hawzen	Debreselam	Berakit	-	Level 1	N/A			Passable	
44	Hawzen	Degambba	Degemba	-	Level 1	N/A			Passable	
45	Hawzen	Deganaba	Shikut	-	Level 1	N/A			Passable	
46	Hawzen	Debrehiwot	Awadu	-	Level 1	N/A			Passable	
47	Hawzen	Siluh	Debrehawaz	-	Level 1	N/A			Passable	
48	Himtalo Wajirat	Fikre Selam	Aderak	Mai sias	Level 1	N/A			Passable	
49	Himtalo Wajirat	Senale	Gentü	Maidimu	Level 1	NGO	Hand pump	Arbaensa	Passable	The facility was constructed by NGO. New well is requested in the alternative site, Arbaensa
50	Himtalo Wajirat	Hareko	Hareqo	Adikifrom	Level 1	N/A			Passable	
51	Himtalo Wajirat	Metkei	Meseret	Netae	Level 1	N/A			Passable	
52	Kilte Awjelo	Mai quina	Madaero	Kembrito	Level 1	Government	(Dry well)	Same site	Passable	The site was drilled by the government, but dry well. New well is still requested in the same site
53	Kilte Awjelo	Debretsyon	Debremear	Gelebet	Level 1	N/A			Necessity of maintenance	
54	Kilte Awjelo	Debretsyon	Debremear	Debremear	Level 1	N/A			Passable	
55	Kilte Awjelo	Gemedo	Tsahilo	Kokay	Level 1	N/A			Passable in the dry season	
56	Kilte Awjelo	Awolo	Ziban adi	Levei 1	N/A				Passable	
57	Kilte Awjelo	Myweini	Sherafo	Around church	Level 1	KOICA	Motorized pump	Alternative well	Study will be done in the Detailed Design	The piped scheme facility was constructed by KOICA in the village including the site. New well is not requested in the same site
58	Kilte Awjelo	Genfel	Dengolo	Adiabasa	Level 1	N/A			Passable	
59	Kilte Awjelo	Abreha atsibha	Selam	Adikulala	Level 1	N/A			Passable	
60	Kilte Awjelo	Abreha atsibha	Selam	Maichew	Level 1	N/A			Necessity of maintenance	

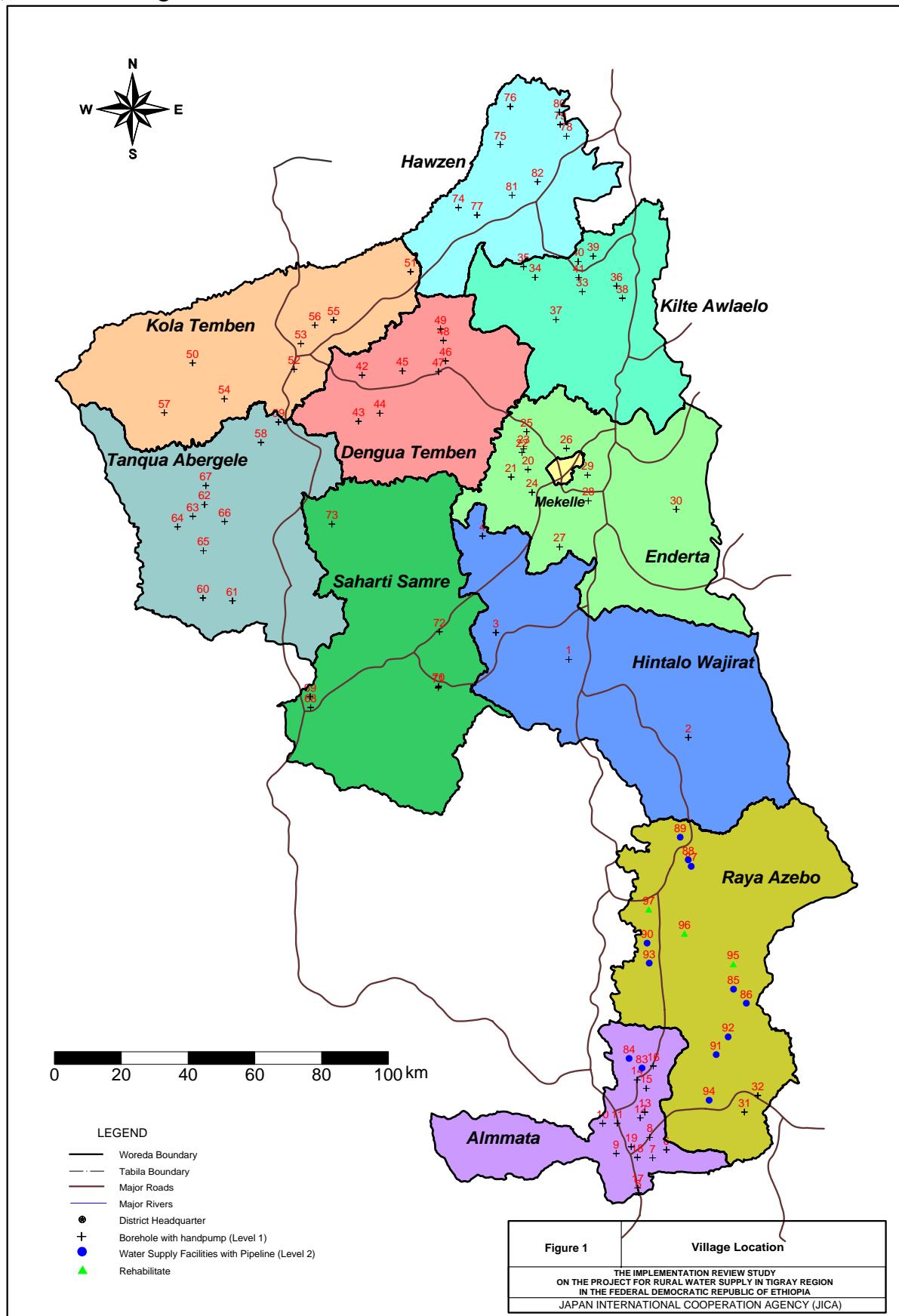
No.	WOREDA	Tabia	Kushet	Gote	Scheme	Duplication by the government or other donors			Access to the site in the rainy season	Result
						Duplication	Type of facilities	Alternative site		
61	Kilté Awalelo	Abreha atsibha	Mindae	Ekli	Level 1	NGO	Hand pump	Adifas	Necessity of maintenance	The facility was constructed by NGO. New well is requested in the alternative site, Adifas
62	Kola Temben	Merere	Chimate	Tsekente	Level 1	N/A			Passable in the dry season	Construction shall be implemented in the dry season
63	Kola Temben	Santa gelebeda	Betro	Ater	Level 1	N/A			Passable in the dry season	Construction shall be implemented in the dry season
64	Kola Temben	Getsiki melsey	Endamariam	Sheka	Level 1	N/A			Passable in the dry season	Construction shall be implemented in the dry season
65	Kola Temben	Getsiki melsey	Sataya	Wersege	Level 1	N/A			Passable in the dry season	Construction shall be implemented in the dry season
66	Kola Temben	Simret	Adichelo	Tsamii	Level 1	N/A			Passable in the dry season	Construction shall be implemented in the dry season
67	Kola Temben	Adiha	Siken	Tarihay Siken	Level 1	N/A			Passable in the dry season	Construction shall be implemented in the dry season
68	Kola Temben	Woremba	Etanzore	Guzara	Level 1	N/A			Passable in the dry season	Construction shall be implemented in the dry season
69	Kola Temben	Shilumenni	Tsiwatsiwa	Tswenyha	Level 1	N/A			Passable in the dry season	Construction shall be implemented in the dry season
70	Raya Azebo	Bala Ujga	Butamrefa	Buta	Level 1	N/A			Passable	
71	Raya Azebo	Bala Ujga	Ulagá	Bisebir	Level 1	N/A			Passable	
72	Raya Azebo	Hadealga	Hadealga	Hadealga	Level 2	N/A			Passable	Test well will be drilled in the Detailed Design
73	Raya Azebo	Hawiti	Hirká	Hirká	Level 2	N/A			Passable	Test well will be drilled in the Detailed Design
74	Raya Azebo	Werebave	Gendajio	Gamed dadi	Level 2	N/A			Passable	Test well will be drilled in the Detailed Design
75	Raya Azebo	Kara adishahu	Fondel	Fondel	Level 2	N/A			Passable in the dry season	Borehole was filled up by stones
76	Raya Azebo	Korme	Dodota	Dodota	Level 2	N/A			Passable in the dry season	
77	Raya Azebo	Korme	Arva	Hadishkign	Level 2	N/A			Passable in the dry season	
78	Raya Azebo	Hadishkign	Tachgubegata	Level 2	N/A				Necessity of maintenance	
79	Raya Azebo	Hadaiga	Deletie		Rehabilitation	N/A			Necessity of maintenance	
80	Raya Azebo	Ka / adishbo	Kepan		Rehabilitation	N/A			Necessity of maintenance	

No.	WOREDA	Tabia	Kushet	Gote	Scheme	Duplication by the government or other donors			Access to the site in the rainy season	Result
						Duplication	Type of facilities	Alternative site		
81	Raya Azebo	Genete	Genete		Rehabilitation	N/A				
82	Seharti Samre	Neber Hadne	Fenarewa	Wete Kezena	Level 1	N/A				
83	Seharti Samre	Lemlem Aren	Sehereye	Taritay, Seheria	Level 1	N/A			Passable	
84	Seharti Samre	May Tekli	Terezeba	Bereziba	Level 1	N/A			Passable in the dry season	Construction shall be implemented in the dry season
85	Seharti Samre	Bamba	Bamba	Harawa	Level 1	N/A			Passable in the dry season	Construction shall be implemented in the dry season
86	Tanqua Abergele	Lam'at	Adimilale	Adimilale	Level 1	NGO	Hand pump	Firtasqe	Passable	The facility was constructed by NGO. New well is requested in the alternative site. Firtasqe
87	Tanqua Abergele	Felegehiwot	Gufatname	Gufatname	Level 1	N/A				
88	Tanqua Abergele	Felegehiwot	Erezna	Erezna	Level 1	N/A				
89	Tanqua Abergele	Sye	Hidmo(1)	Hidmo(1)	Level 1	N/A				
90	Tanqua Abergele	Sye	Hidmo(2)	Hidmo(2)	Level 1	N/A				
91	Tanqua Abergele	Sye	Gomengé	Gomengé	Level 1	N/A				
92	Tanqua Abergele	Sye	Teklemkerira	Teklemkerira	Level 1	N/A				
93	Tanqua Abergele	Sye	Metere	Metere	Level 1	N/A				
94	Tanqua Abergele	Jijique	Jijique	Jijique	Level 1	N/A				

Site for Level2

Site for Rehabilitation

(4) List of Target Sites



Target site for the Project for the Rural Water Supply in Tigray

No	ID No.	Woreda	Tabia	Kushet (Village)	Gote (Site)	Coordinate value(UTM)			Type of facility
						X	Y	Z	
1	JHW005	Hintalo Wajirat	Fikre Selam	Aderak	Mai slas	552401	1456945	2235	level 1
2	JHW012	Hintalo Wajirat	Senale	Genti	Arbaensa	574845	1442355	2401	level 1
3	JHW013	Hintalo Wajirat	Hareko	Harego	Adikiflom	538705	1461990	2083	level 1
4	JHW021	Hintalo Wajirat	Metkei	Meseret	Netae	536194	1480072	-	level 1
5	JAL007	Alamata	Timuga	Kunkura	Maedo Ketema	565499	1357078	1437	level 1
6	JAL010	Alamata	Selenwuha	Kubiderba	Amgedel	570738	1365109	1407	level 1
7	JAL011	Alamata	Selenwuha	Gedera	Gedera	568138	1363597	1569	level 1
8	JAL012	Alamata	Weselenwuha (Limat)	Adi haqos tseqay	Endasilasie(Adihana)	567594	1367414	1460	level 1
9	JAL013	Alamata	Limat	Adiabogoia	Sifraamora	561298	1364409	1538	level 1
10	JAL014	Alamata	Limat	Hashiamariam	Hashiamariam	558766	1370039	1439	level 1
11	JAL015	Alamata	Selam bikalsi	Rarhe	Rarhe	561506	1370065	1524	level 1
12	JAL017	Alamata	Selam bikalsi	Adimohove	Adimohove	565809	1371093	-	level 1
13	JAL018	Alamata	Selam bikalsi	Hadis Kigni	Hadis Kigni	566690	1372156	1580	level 1
14	JAL019	Alamata	Kululemlem	Adishishashim	Adishishashim	565230	1378203	1482	level 1
15	JAL020	Alamata	Kuluqize Zemlem	Aqamitie	Akabake	566941	1376621	1463	level 1
16	JAL022	Alamata	Tao	Adihantia	Adihantia	568277	1380792	1453	level 1
17	JAL023	Alamata	Waaja ketema	Waaja ketema	Waaja ketema	565335	1357958	1452	level 1
18	JAL024	Alamata	Selenwuha	Harle	Harle school	565270	1363686	1467	level 1
19	JAL025	Alamata	Limat	Adieshok	Alembirhan school	566426	1365675	1480	level 1
20	JED001	Enderta	Maianbesa	Maiumer	Around school	544738	1492526	2122	level 1
21	JED003	Enderta	Maianbesa	Maiavnyi	Maiavnyi	541577	1491125	2180	level 1
22	JED005	Enderta	Maialem	Mishim	Mishim	543600	1495723	2016	level 1
23	JED006	Enderta	Maalem	Zibanided	Zibanided	543913	1496414	2059	level 1
24	JED008	Enderta	Debri	Mekaih	Kokahi	545491	1488261	2094	level 1
25	JED009	Enderta	Debri	Adiamik	Mekayh	544481	1499644	2127	level 1
26	JED015	Enderta	Mariam dehan	Adikolkal	Adikolkus	551959	1496500	1982	level 1
27	JED019	Enderta	Chelekot	Maekeleza	Akeb demamu	550671	1478038	2016	level 1
28	JED024	Enderta	Shibta	Randa	Randa	556070	1486658	2226	level 1
29	JED025	Enderta	Shibta	Egriwenber	Egriwenber	556920	1491495	2238	level 1
30	JED033	Enderta	Lemlem	Akeza	Akeza	572574	1485081	2473	level 1
31	JRA012	Raya Azebo	Bala Ulga	Butamrifeta	Buta	585379	1372176	1677	level 1
32	JRA013	Raya Azebo	Bala Ulga	Ulaga	Bisebir	587904	1375284	1604	level 1
33	JKA001	Kilte Awlaelo	Mai quiha	Maidaero	Kembirto	554930	1525856	2102	level 1
34	JKA003	Kilte Awlaelo	Debretsiyon	Debremear	Debremear	543903	1530533	2021	level 1
35	JKA004	Kilte Awlaelo	Debretsiyon	Debremear	Debremear	543903	1530533	2021	level 1
36	JKA009	Kilte Awlaelo	Gemedi	Tsahilo	Kokay	561369	1526922	-	level 1
37	JKA012	Kilte Awlaelo	Awolo	Ziban adi	Ziban adi	549998	1520609	2081	level 1
38	JKA016	Kilte Awlaelo	Genfel	Dengolo	Adiarbea	562457	1524640	2001	level 1
39	JKA017	Kilte Awlaelo	Abreha atsibha	Selam	Adikulala	556980	1532494	2016	level 1
40	JKA018	Kilte Awlaelo	Abreha atsibha	Selam	Maichew	554153	1531491	1982	level 1
41	JKA019	Kilte Awlaelo	Abreha atsibha	Mindae	Adinfas	554277	1528505	-	level 1
42	JDT001	Dequa Temben	Mahiberesilase	Waseva	Waseva	513576	1510203	2583	level 1
43	JDT003	Dequa Temben	Siret	Endamariam	Endamariam	512908	1501556	2624	level 1
44	JDT004	Dequa Temben	Siret	Mahibere Shih	Mahiberesih	516912	1503075	2601	level 1
45	JDT011	Dequa Temben	Selam	Adiwerho	Adiwerho	521155	1511001	2216	level 1
46	JDT012	Dequa Temben	A Kekn	Alasa	Alasa	529257	1512874	2415	level 1
47	JDT013	Dequa Temben	A Kekn	Raset	Raset	527934	1510859	2433	level 1
48	JDT018	Dequa Temben	Arebay	Arebay	Arebay	528850	1516704	2631	level 1
49	JDT019	Dequa Temben	Arebay	Kelkele	Kelkele	528298	1518859	2442	level 1
50	JKT001	Kola Temben	Merere	Chimate	Tsekente	481757	1512498	1946	level 1
51	JKT005	Kola Temben	Santa gelebeda	Betro	Ater	522688	1525952	-	level 1
52	JKT008	Kola Temben	Getsiki melsley	Endamariam	Sheka	500819	1511288	1892	level 1
53	JKT009	Kola Temben	Getsiki melsley	Sataya	Wersege	502078	1516122	1844	level 1
54	JKT012	Kola Temben	Simret	Adichelo	Tsami	487713	1505773	1952	level 1
55	JKT013	Kola Temben	Adiha	Siken	Tahitay Siken	508235	1520534	1733	level 1
56	JKT014	Kola Temben	Workemba	Etanzore	Guzara	504722	1519589	1831	level 1
57	JKT017	Kola Temben	Shilumemmi	Tsiwatsiwa	Tsewanya	476452	1503176	1691	level 1
58	JTA001	Tanqua Abergele	Lem'at	Abivauquo	Abivauquo	494591	1497600	1689	level 1
59	JTA002	Tanqua Abergele	Lem'at	Adimilale	Firtasge	497890	1501437	1743	level 1
60	JTA005	Tanqua Abergele	Felegehiwot	Gufatinne	Gufatinne	483706	1468478	1228	level 1
61	JTA006	Tanqua Abergele	Felegehiwot	Erezna	Erezna	489234	1467954	1298	level 1
62	JTA007	Tanqua Abergele	Siye	Hidmor(1)	Hidmo(1)	483988	1485953	1446	level 1
63	JTA008	Tanqua Abergele	Siye	Hidmor(2)	Hidmo(2)	481790	1483764	1501	level 1
64	JTA009	Tanqua Abergele	Siye	Gomenge	Gomenge	478933	1481800	1445	level 1
65	JTA011	Tanqua Abergele	Siye	Teklemkerira	Teklemkerira	483783	1477320	1277	level 1
66	JTA012	Tanqua Abergele	Siye	Metere	Metere	487775	1482792	1385	level 1
67	JTA018	Tanqua Abergele	Jijique	Jijique	Jijique	484252	1489519	1724	level 1
68	JSS002	Seharti Samre	Neber Hadne	Fenarewa	Wete Kezena	503924	1447967	1493	level 1
69	JSS003	Seharti Samre	Neber Hadne	Fenarewa	Tahitay Teshalew	503827	1449995	1575	level 1
70	JSS007	Seharti Samre	Lemlem Aren	Seberye	Laelay Seberia	527958	1451911	1706	level 1
71	JSS008	Seharti Samre	Lemlem Aren	Seberye	Tahitay Seberia	527869	1451647	1693	level 1
72	JSS009	Seharti Samre	May Tekli	Terezeba	Bereziba	528114	1462143	2007	level 1
73	JSS013	Seharti Samre	Bamba	Bamba	Harawa	507913	1482311	1611	level 1
74	JHW001	Hawzen	Adibelow	Mererhuwa	-	531679	1541602	1915	level 1
75	JHW003	Hawzen	Baleda	Adigefah	-	539525	1553409	1913	level 1
76	JHW005	Hawzen	Debrebizen	Setet	-	541404	1560528	2107	level 1
77	JHW007	Hawzen	Debrezelam	Berakit	-	535172	1540214	1916	level 1
78	JHW010	Hawzen	Meztey	Dabaseria	-	551969	1554971	2300	level 1
79	JHW015	Hawzen	Degamba	Degembia	-	550791	1557153	2380	level 1
80	JHW016	Hawzen	Degamba	Shikut	-	550654	1559471	2345	level 1
81	JHW017	Hawzen	Debrehiwot	Awadu	-	541745	1543912	2080	level 1
82	JHW019	Hawzen	Siluh	Debrehawaz	-	546528	1546447	2231	level 1
83	JAL004	Alamata	Geriele	Geriele	Geriele town	566139	1380423	1475	level 1
84	JAL005	Alamata	Laelay Dayu	Ula	Ula	563716	1382219	1596	level 1
85	JRA001	Raya Azebo	Hadealga	Hadealga	Hadealqa	583329	1395187	-	level 1
86	JRA004	Raya Azebo	Hadealga	Hadealga	Keyih tekli	585735	1392560	-	level 2
87	JRA005	Raya Azebo	Hawlti	Hirkia	Hirkia	575382	1418205	1734	level 2
88	JRA002	Raya Azebo	Hawlti	Adialebachele	Adialebachele	574831	1419414	1755	level 2
89	JRA003	Raya Azebo	Abo	Bechenrkatan	Bechenrkatan	573316	1423662	1753	level 2
90	JRA003	Raya Azebo	Kara adishehu	Fondel	Fondel	567092	1403823	1705	level 2
91	JRA004	Raya Azebo	Korme	Dodota	Dodota	580079	1382937	1687	level 2
92	JRA005	Raya Azebo	Korme	Arva	Hadishkign	582325	1386253	1597	level 2
93	JRA006	Raya Azebo	Werebave	Gendiao	Gemed dadi	567503	1400076	1671	level 2
94	JRA007	Raya Azebo	Hadishkign	Hadishkign	Tachqubegala	578749	1374394	1406	level 2
95	JR001	Raya Azebo	Hadalqa	Deletie	-	583283	1399841	-	Rehabilitation
96	JR009	Raya Azebo	Ka/adishbo	Kepan	-	574125	1405575	-	Rehabilitation
97	JR014	Raya Azebo	Genete	Genete	-	567415	1410096	-	Rehabilitation

Legend:

level 1: water supply system by borehole with handpump

level 2: water supply system by distributed public faucet with pipeline

Rehabilitation: Rehabilitation and expansion of the existing facility