TECHNICAL NOTES
ON
THE SECOND PREPARATORY SURVEY
FOR
THE PROJECT FOR PROVISION OF IMPROVED WATER SOURCE FOR RETURNED IDP IN ACHOLI SUB-REGION IN THE REPUBLIC OF UGANDA

Based on the Minutes of Discussions (hereinafter referred to as "M/D") on the Second Preparatory Survey on the Project for Provision of Improved Water Source for Returned IDP in Acholi Sub-region in the Republic of Uganda (hereinafter referred to as "the Project") signed on October 19, 2011 between the Second Preparatory Survey Team (hereinafter referred to as "the Team") of Japan International Cooperation Agency (hereinafter referred to as "JICA") and Ministry of Water and Environment (hereinafter referred to as "MOWE"), of the Government of the Republic of Uganda, the consultant members of the Team (hereinafter referred to as "TEC-OYO") had a series of discussions and conducted field surveys from October 20 to December 6, 2011.

As a result of the discussions and the surveys, both sides confirmed the technical conditions described as per Attachment.

Kampala, December 5, 2011

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ATTACHMENT

Both parties agreed upon and confirmed on the following items.

1. Boreholes with Handpump

(1) Prioritization of villages for implementation

TEC-OYO carried out the geophysical survey in the selected 130 villages in the study area, and confirmed the access conditions to villages to prioritize the selected 152 villages. The following parameters are considered for the prioritization.

- Required Drilling Depth: Average drilling depth is calculated by sub-county from National Groundwater DataBase (NGWDB). Drilling depth reflects to the cost of drilling. Shallower depth is given higher score.
- Bedrock Depth: Bedrock depth is estimated from the result of resistivity survey. Deeper bedrock depth shows thicker weathered zone. Deeper bedrock depth is given higher score.
- Static Water Level: Average water level is calculated by sub-county from NGWDB. Shallower water level shows easiness of pumping. Shallower water level is given higher score.
- Yield: Average yield is calculated by sub-county from NGWDB. Larger yield is given higher score.
- Access Conditions: Several sites are found very difficult to access.

The priority of villages is tentatively provided as shown in Table 1 attached hereto, and the selected villages are allocated to each district as shown in the following table considering the population distribution among the districts in the Acholi sub-region.

Table 2 Proposed Allocation of Selected Villages

District	Rural Population in 2011	Share (%)	Original Allocation for All Districts		Additional Allocation for Nwoya and Lamwo Districts		Total Numbers of Villages to be Selected for Implementation
			Numbers of Villages for 2nd Field Survey	Number of Villages to be Selected for Implementation	Numbers of Villages for 2nd Field Survey	Number of Villages to be Selected for Implementation	
1. Gulu	229,227	18.4	21	16	0	0	16
2. Amuru	173,712	13.9	18	14	11	8	22
3. Nwoya	52,489	4.2	12	9	0	0	9
4. Kitgum	177,135	14.2	19	15	0	0	15
5. Lamwo	163,180	13.1	18	14	11	8	22
6. Pader	190,214	15.2	19	15	0	0	15
7. Agago	261,915	21.0	23	17	0	0	17
Total	1,247,872	100.0	130	100	22	16	116

(2) Minimum yield for borehole with handpump and success rates of drilling

In the Acholi sub-region, there are 1,848 boreholes and out of this about 420 boreholes have the yields from 500 to 1,000 liter/hr as shown in Fig. 1. Further, about 100 boreholes have the yields of the range from 600 to 700 liter/hr, Since even 600 liter/hr of capacity is considered enough to supply water to the population of 300 persons in a day, the minimum yield required for the construction of borehole with handpump was set at 720 liter/hr (0.72 m^3/hr) though the 600

liter/hr (0.60 m^3/hr) has been basically adopted considering the difficulties in exploring the groundwater in the sub-region.

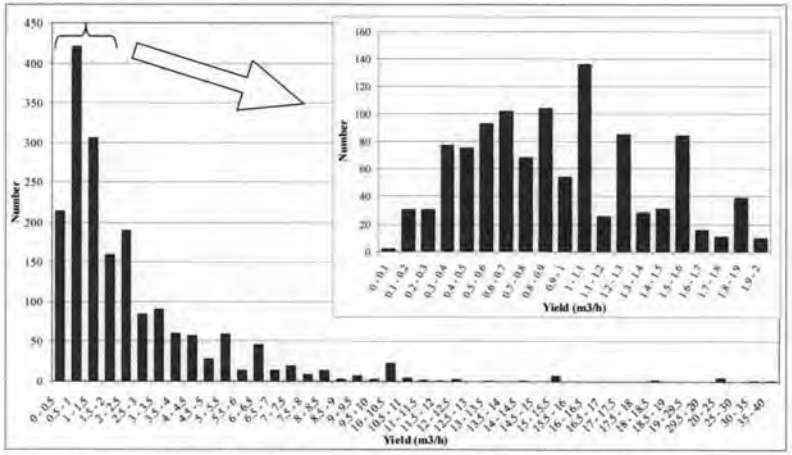

Fig. 1 Histogram of yield in National Groundwater Database in Acholi sub-region

(3) Standard Structure of borehole

The standard structure of borehole for handpump installation is as shown in Fig. 2 considering those prevailingly adopted in Uganda.

(4) Handpump set to be applied

The handpumps unit of the modified U2 type will be adopted for the boreholes with handpump for villages. Riser pipes shall be of PVC and connection rods of 3.0 m long shall be of stainless-steel furnished with centralizers.

(5) Drilling procedures and alternative villages

In the implementation of the project, twice of drilling attempts are madein maximum in each village. If both of the attempts fail, the drilling works of the respective village is stopped and the drilling will be conducted in the alternative village of the highest priority. If the twice of drilling attempts fail again, the same procedure is applied for the next highest alternative village. 36 villages will remain after selecting 116 villages among 152 villages, and they are listed as the alternative villages.

2. Piped Water Supply Facilities

(1) Results of the aquifer tests and the test drilling

TEC-OYO carried out the aquifer tests for the 12 existing boreholes which were selected based on the results of analyses on the DWRM's data base and the field reconnaissance. Meanwhile, TEC-OYO conducted the test drillings at the 10 sites which were determined based on the results of the geophysical survey (electric resistivity sounding) conducted in the target six (6)

RGCs. The results of these tests and drillings are tabulated below.

Table 3 Summary of Results of Aquifer Tests and Test Drillings

RGC	Code	Bore-hole No.	Coordinates		Static WL (m)	Safe Yield (m^3/hr)	Dynamic WL (m)	Borehole Depth (m)	Observation by Borehole Camera
Koch Goma	PWS-03-AT-1	17803	408155	278999	8.30	1.2	20.11	>48.0	Sticks block at 48m deep. Open hole from 20m deep.
	PWS-03-AT-2	27860	408370	287715	5.21	0.3	17.81	86.8	Clear
	PWS-03-TD-1	n/a*	407480	288571	10.84	1.8	28.84	80.0	-
	PWS-03-TD-2	n/a*	408093	287828	8.28	a.i.***	-	60.0	-
Unyama	PWS-06-AT-1		426340	312563	5.05	6.0	29.29	69.0	Clear
	PWS-06-AT-2	n/a**	426313	312069	10.08	a.i.***	-	-	Blocked by many sticks up to 1m from top of casing.
	PWS-06-AT-3	n/a**	426469	312254	2.18	0.6	7.60	30.0	-
	PWS-06-AT-4	n/a**	426140	312456	5.05	0.6	13.18	25.0	-
	PWS-06-TD-1	n/a*	426457	311213	8.33	2.4	20.94	80.0	-
	PWS-06-TD-2	n/a*	426510	312205	5.68	12.0	30.0	75.0	-
Awere	PWS-08-AT-1		475793	296759	5.30	5.1	14.27	73.0	Clear. Open hole below 34.2m deep.
	PWS-08-AT-2	n/a**	475701	297200	3.28	4.5	10.76	84.0	Cleart. Open hole below 40m.
	PWS-08-TD-1	n/a*	475572	297241	2.16	4.5	18.49	70.0	-
Adilang	PWS-10-AT-1	21326	554031	303033	17.00	3.0	24.88	70.0	A wood stick blocks at 47m deep. Open hole below 30m.
	PWS-10-AT-2	21303	553733	302811	20.75	0.6	-	51.0	-
	PWS-10-AT-3	18001	552656	303422	21.00	0.9	-	-	-
	PWS-10-AT-4	n/a**	552654	303423	17.01	4.8	29.40	60.0	Water is cloud. Screen depth is not seen.
	PWS-10-TD-1	n/a*	553600	303268	15.54	1.2	28.56	90.0	-
	PWS-10-TD-2	n/a*	553780	303248	19.41	2.4	42.50	70.0	-
Kilgum Matidi	PWS-14-AT-1	n/a**	506786	360875	25.92	9.0	37.06	48.0	1 m bamboo stick lies down in the bottom. Open hole below 20.5m deep.
	PWS-14-AT-2	-	506527	360766	25.00	1.8	34.61	49.7	Clear
	PWS-14-TD-1	n/a*	506365	361450	29.40	4.8	42.83	90.0	-
	PWS-14-TD-2	n/a*	506264	361879	29.83	0.6	60.28	90.0	-
Corner Kilak	PWS-15-AT-1	22976	495577	306235	2.39	3.6	41.70	70.0	Clear. Open hole below 19.6m deep.
	PWS-15-AT-2	n/a**	495659	305938	2.26	1.8	40.1	49.7	Sticks blocked at 47.9m deep. Open hole below 28m deep.
	PWS-15-AT-3	n/a**	495739	306351	4.77	0.6	15.00	70.0	-
	PWS-15-TD-1	n/a*	495534	306037	4.73	1.5	25.51	90.0	-

Note: n/a*: Code number to be registered. n/a**: Code number not found.
a.i.***: Analysis impossible

(2) Planning conditions and water demand

As agreed in the M/Ds for the first and second preparatory survey, the consumption per capita of 20 liter/day/capita and the population estimated for the target year of 2017 are applied for estimating the water demands of the selected six (6) RGCs.

The core part where the population density is found to be high as a result of field reconnaissance is delineated as the target service area, and the population therein is estimated based on the socio-economic condition survey conducted by TEC-OYO. Where the functional existing scheme is identified in such delineated area, the area served by the existing piped scheme is excluded from the target area of the project. The served area and population of the piped water supply facilities to be provided under the project is set so as to cover those out of the existing scheme as much as possible considering the exploitable volume of groundwater.

Water demand and available water in each RGC are tabulated below.

Table 4 Water Demand and Available Water in RGC

District	RGC	Population (2017)	Water Demand (m^3/day)	Population Served	Total Available Water (m^3/day)	Available Water (m^3/day)*					
						AT1	AT2	AT3	AT4	TD1	TD2
1.Gulu	Unyama	3,600	72.0	3,600	108.0	36.0	-	3.6	3.6	14.4	72.0
	Awere	1,700	34.0	1,700	57.6	30.6	27.0	-	-	27.0	-
3.Nwoya	Koch Goma	2,100	42.0	900	18.0	7.2	1.8	-	-	10.8	-
4.Kitgum	Kitgum Matidi	2,800	56.0	2,800	82.8	54.0	10.8	-	-	28.8	9.0
6.Pader	Corner Kilak	2,000	40.0	2,000	41.4	21.6	10.8	3.6	-	9.0	-
7.Agago	Adilang	3,800	76.0	3,420	68.4	18.0	3.6	5.4	28.8	7.2	14.4
Total		15,500	310.0	14,420	-	-	-	-	-	-	-

Note: *: 6hr of operation is considered. Underlined boreholes are proposed to be used as production wells.

(3) Water supply system and power source

The piped water supply system is proposed to consist of water source boreholes, transmission pipelines, elevated tank (reservoir), distribution pipeline (networks) and public water stands as illustrated below.

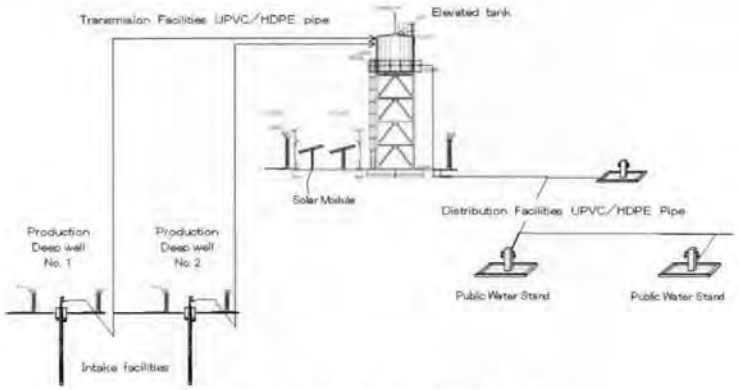

Fig. 3 Typical Piped Water Supply System

(4) Security measures

It was agreed that the security measures for solar modules are taken providing fences, security lamps, etc. MOWE requested TEC-OYO to furnish required security measures under the responsibility of Japanese side including security fences and guard houses.

(5) Power source of submersible pumps

A submersible motor pump is proposed to be applied considering easy operation and maintenance, and the solar power generation system is requested to be applied by MOWE. TEC-OYO agreed basically with this request considering the followings.

- The solar power generation is only possible during the daytime of about six (6) hours causing the increase of initial investment costs, while it reduces the operation costs to almost free, which is considered to be an advantage in the operation and maintenance by the user community.
- In fact, although the most of the existing piped water supply systems operated by diesel generated power and commercial electricity supply have been out of operation and abandoned in the Acholi sub-region, some systems operated by the solar power generation are still in operation.

The power source to be applied for the project is determined through the comparative studies among possible sources such as commercial electricity supply, diesel generation and solar power generation in order to ensure long sustainability of the facilities by the operation and maintenance on community level.

(6) Layout plan of piped water supply scheme

The draft layout plans of the piped water supply schemes are drawn to command whole of the target service areas in RGCs. The draft plans are presented in Fig. 4 to Fig. 9. TEC-OYO will proceed with the planning and cost estimate based on these draft plans in the 2nd home work period.

3. Equipment and Tools to be Procured

(1) Tool box for Handpump Mechanics (HPMs)

The present distribution and conditions of the tool boxes in the districts is summarized in the following table, and their sub-county wise details are tabulated in Table 6 attached hereto.

Table 5 Present Distribution and Conditions of Tool Boxes

District Water Office	Number of Parish	Number of HPMs	Number of Tool Boxes	Condition of Standard Tool Kit			
				Missing tools			
				Complete	Few	Several	Many
Standard Tool Kit							
Gulu	70	55	22	0	16	0	0
Amuru	28	28	2	0	0	0	2
Nwoya	26	15	7	7	0	0	0
Kitgum	52	112	8	0	5	3	0
Lamwo	44	115	35	0	0	9	26
Pader	52	80	8	0	0	0	8
Agago	73	36	3	0	0	3	0
Total	345	441	85	7	21	15	36
Special Tool Kit							
Gulu	16	55	0	0	0	0	0
Amuru	5	32	2	0	0	0	2
Nwoya	4	15	7	7	0	0	0
Kitgum	10	112	0	0	0	0	0
Lamwo	10	115	3	0	0	0	3
Pader	12	80	22	2	16	1	3
Agago	16	36	0	0	0	0	0
Total	73	445	34	9	16	1	8

Here are two (2) kinds of tool kits and fishing tools. A standard tool kit is used for regular maintenance, and a special tool kits is for hand pump installation and rehabilitation. Fishing

tools are equipment used for extracting dropped parts of the handpump or riser pipes from the borehole.

Plan of the delivery of the tool kits are as follows:

- Two (2) sets of standard tool kit, special tool kits and fishing tools are delivered to each sub-county.
- The tools will be lent to hand pump mechanics upon his/her request.
- Number of tool kits to be procured is determined to fill the gap between numbers of complete tool boxes possessed at present.

Table 7 Requested Tool Kits for HPMs

	Tool Kits	Q'ty	Remarks		Fishing tools	Q'ty
1	Tool Box with lock (2 cylinder locks)	1	200mmx200mm x900mm	1	U-2 Fishing tool for pipes	1
2	Riser pipe lifter	3		2	U-2 Heavy duty fishing tool	1
3	Water tank pipe lifter	1		3	Connection rod fishing tool	1
4	Bearing mounting tools	1				
5	Chain coupler supporting tool	1				
6	Connecting rod lifter 'O' type	1				
7	Connecting rod vice	1				
8	Heavy duty riser pipe clamp	1	PVC			
9	Axle punch	1				
10	Connecting rod coupling spanner	2				
11	Crank Spanner M17 x M19	2				
12	Double ended spanner M17 x M19	2				
13	M12 Bottom die with handle	1				
14	Ball pein hammer 2 lbs	1				
15	900mm pipe wrench	2	Record leader			
16	250mm file rough	1				
17	250mm file medium	1				
18	250mm screw driver- Flat	1				
19	Oil can 1/4 liter	1				
20	Putty	1	Grease			
21	Wire brush	1				
22	Hack saw frame with 2 blades	1				

(2) Service rig

1) Existing service rig

The present condition of the existing service rig, which is delivered from Japan in 1997, is summarized in the below table.

Table 8 Condition of Present Service Rig

	Part	Condition
1	Truck Travel distance 117,039 km on 29th November, 2011	Good
2	Crane Lifting Load: Maximum 3.0 ton	Trouble in hydraulic system, which causes the lifting ability lower. .
3	Compressor Model 4LE1, Denyo Co.Ltd Operation 0.69 MPa, Actual air delivery 5.1 m3/min	Broke down
4	Generator	Broke down

The service rig is still working and implementing repair work for the central region of Uganda. The service center for the rig is just located in the yard of DWD.

2) Outline of the Specification required to new service rig and attachments

Table 9 Outline of Specification for Requested Service Rig

	Specifications		Q'ty	Remark
1	Medium body cargo truck with crane and lift frame		1 set	
2	Winch		1 set	For escaped from stuck place.
3	Double tube pipes for well development		1 set	
	a	Inner tube: ϕ 1.5 inch, length 3m	141 m	
	b	Outer tube: ϕ 2.5 inch, length 3m	141 m	
4	Hand pump mechanic tool, fishing tools, and wrench of 24 mm and 36 mm		2 sets	Same tool kits for hand pump mechanics, but it needs additional wrench for repair work of motorized submersible pump system

3) Intended purpose and the place where a new service rig to be deployed

Acholi region has a lot of boreholes, which were constructed before and during humanitarian phase. Many of them are not functional at present, and people have been still suffering from lack of safe water. To help the water needs of the returned IDP there is a needs of service rig. In addition, it is difficult to develop new groundwater source in Acholi sub-region due to the hydrogeological condition, and it takes a lot of time and cost. Therefore, rehabilitation of those boreholes is most effective measure to solve this issue.

The existing service rig is to be deployed for the rehabilitation work for the Central region. The requested rig is to be deployed in Acholi sub-region and managed by the central office through TSU-2, which is the responsible organization to technical support for Acholi region.

4) Training for the new rig

DWD requested that the training on the operation of the new rig is necessary by a supplier with instruction manual after delivering a new rig,

(3) Vehicles and motorbikes

The present conditions of the vehicles of the district water offices are shown in Table 10. The district water offices of Nwoya, Agago and Pader strongly requested to procure pick-up tracks because their daily work for communities are frequently hindered by lack of transportation.

Table 10 Present Distribution and Conditions of Vehicles

District	Vehicle Type	Number	Condition of the Vehicles		Main user
			Good	Other	
1. Gulu	Pickup Truck	1		Under repair (1)	DWO
	Motorbike	2	2		Share in DLG
2. Amuru	Pickup Truck	1		In garage (1)	
	Motorbike	3	2	Stolen (1)	DWO
3. Nwoya	Pickup Truck	1		Broken (1)	
	Motorbike	1	1		Share in DLG
4. Kitgum	Pickup Truck	2	2		DWO
	Motorbike	5	3	Broken (2)	DWO
5. Lamwo	Pickup Truck	0			

District	Vehicle Type	Number	Condition of the Vehicles		Main user
			Good	Other	
	Motorbike	0			
6. Pader	Pickup Truck	1	1		Share in DLG
	Motorbike	0			
7. Agago	Pickup Truck	0			
	Motorbike	0			

In addition, MOWE requested TEC-OYO to include one (1) vehicle for the Socio-science section of Rural Water Supply and Sanitation Department (Planning and Development division) of DWD's central office in order to facilitate the mobilization and sensitization activities in Acholi sub-region under the project. TEC-OYO agreed to bring this additional request to JICA headquarters.

4. Operation and Maintenance of Provided Facilities

(1) Boreholes with handpump

Operation and maintenance of boreholes with handpumps will basically follow conventional method and procedures of Uganda, which is described in the *National Framework for Operation and Maintenance of Rural Water Supply in Uganda, July 2011*.

(2) Piped water supply systems

The idea of method of operation and maintenance for piped water supply system is as follows:

- Proposed management structure

  Each public water tap is controlled by a Tap Water Committee which is under Water and Sanitation Committee. Each public water stand has its command area, and the Tap Water Committee to be established in each command area collects user fees from users who live in such command area as presented in Fig. 10.

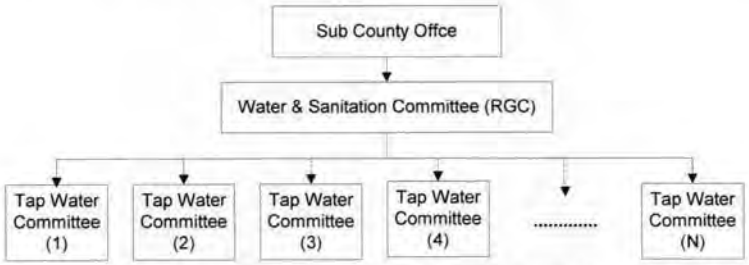

Fig. 10 Management Structure of Piped Water Supply System

- Envisaged role of each organization

  The roles of each operation and maintenance organization are summarized in the following table.

Table 11 Envisaged Roles of Operation and Maintenance Organizations

Organization	Role of the Organization	Staffing
Sub County	Coordination between DWO and community	Sub county chief
Water and Sanitation Committee (WSC)	• Operation & maintenance of piped water supply system • Collection of user fees from TWCs and manage the fund. • Maintain record of community meetings • Community mobilization for various activities related to water and sanitation. • Hold a meeting regularly to keep community active for operation and maintenance. • Cleaning of solar panels • Find water leakage from transmission pipe, distribution pips and taps, and take action for repair	Chairperson Vice Chairperson Treasurer Secretary Caretaker Care taker (Male), Caretaker (Female) Mobilizer (2)
Tap Water Committees (TWCs)	Daily maintenance of taps and soak pit, record discharged volume of groundwater with flow meter, find leakage from discharged records, and collection of user fees.	Care taker (Male), Caretaker (Female) Treasure (1)

- Collection of user fees.

  Monthly or seasonal collection of user fees is recommended ensure the repair of handpump unit. The amount and method of water charge collection should be determined by the community and stated in their by-laws.

- Technical Support

  In case of piped water supply system with solar power generation unit, daily maintenance of the system is not so difficult. Trained care taker in community can do it easily. However, extra-ordinary repair may happen in future. There are some options such as becoming a member of Umbrella-North and receiving its support, or contract with private company, etc. The coping method will be determined by the community itself.

(3) Equipment and tools

Each sub-county keeps and manages two (2) set of standard tool kit, special tool kit and fishing tools, The keeper of each tool kit and fishing tools should be recorded by sub county, and the District Water Office (DWO) is responsible to regularly monitor the usage and storage of such tool kits.

(4) Software assistance

a) DWD has software activities frame work from "General Planning and Advocacy Phase" to "Post Construction Phase". Those software activities are usually implemented by relevant DWO and Health Assistant and Community Development Officer. However, this project intends to construct 116 boreholes with hand pumps for villages and piped water supply systems for 6 RGCs within about one (1) year. It is considered difficult to conduct such a huge amount of software activities by few officers in a short period. Therefore, this project itself must include software activity component for Pre-construction Phase and Construction Phase as well as Post Construction Phase. The software activity component will be implemented by Japanese expert and contracted local consultants in cooperation with DWO and relevant officers in Local government.

b) Key points of Software Activity Component

<Pre Construction Stage>

- Formation of Water & Sanitation Committees.
- Training of Water & Sanitation Committees on their roles
- Mobilizing Communities to fulfill the Critical Requirement developed by rural water supply sector.
- Sanitation and Hygiene promotion.
- Meeting with Sub County Sectoral Committee on results of communities verified for the Critical Requirements

<Construction Phase>

- Mobilization of Communities to participate in Construction Activities
- Sanitation and Hygiene promotion.
- Training of water source caretakers for preventive maintenances:
- Training of water and sanitation committee on Operation and Maintenance
- Commissioning of water supply facility

< Post Construction Phase>

- Sanitation and Hygiene promotion.
- Continuous follow up/mobilization for O&M, behavior and environmental issues

c) Many handpump mechanics (HPMs) are already trained in Acholi sub-region. DWOs are now going to evaluate the ability of each HPM, and establish Hand Pump Mechanic Associations to give technical support to communities and training less experienced HPMs by experienced senior HPMs. Therefore, further training of new HPMs are not included in the project.

d) Concerning Piped Water Supply Systems for RGCs, Project Implementation Committees (PICs) described in MOU will be a center of the software activities by commissioning of water supply facilities. Therefore software activities should include assistant activities for PICs such as establishment of Water and Sanitation Committees and Tap Water Committees, Creation of By-laws, understanding of the role of each organizations and responsibility of communities, set up of tariff collection system, and amount of tariff, so on. These software activities will be implemented in line with "Steps in Carrying Out Mobilization Activities in Rural Growth Centres". And the software activity component will also be implemented by Japanese expert and contracted local consultants in cooperation with DWOs and relevant officers in Local government.

5. Land for Facilities to be Provided under the Project

TEC-OYO got the consents of the stakeholders relating to the use of the lands where the project facilities such as water source boreholes, elevated tanks, solar power generation modules as shown in Annex 1. The provision of required lands is confirmed in MOU (Minutes of Understandings) which were concluded in the stakeholder meetings. It is, therefore, required for MOWE to assure such land uses that confirmed in the course of the 2nd field survey.

6. Stakeholder Meetings

MOWE held stakeholder meetings in selected five (5) RGCs. The purpose of the stakeholder meetings were to explain contents of draft plans of a proposed water supply systems, likely environmental negative impacts directly and indirectly caused by the construction of the water supply systems, and the mitigation measures. As a result of enthusiastic discussions, all stakeholders understood the contents of the proposed water supply systems, the environmental negative impacts and the mitigation measures, and reached consensus. The Statement of Agreement of each stakeholder meeting is attached in Annex 2.

Table 12 Date and Place Where Stakeholder Meetings Held

RGCs	District	Date	Place
Corner Kilak	Pader	17th, November, 2011	Sub County Meeting Room
Adilang	Agago	18th November, 2011	Sub County Convention Room
Kitgum Matidi	Kitgum	22nd November, 2011	Sub County Meeting Room
Awere	Gulu	23rd November, 2011	RGC trading centre
Unyama	Gulu	24th November, 2011	Sub County Office
Koch Goma	Nwoya	26th November, 2011	Sub County Meeting Room

However, pumping tests of existing boreholes and test boreholes have been proceeding in parallel with the design work of the water supply systems so that reduction of service area may be forced to happen in some RGCs due to the lack of yields of such boreholes. The final plans are to be prepared by TEC-OYO modifying these draft plans in the 2nd home work period.

In case of Koch Goma RGC, boreholes used for new piped water supply system are not yet determined by TEC-OYO so that a consultative meeting was held for Koch Goma RGC to obtain an understanding of the participants for possible draft plans and incorporate the opinions with the draft plans.

7. Social and Environmental Consideration

Project Brief for EIA application, which describes outline of piped water supply systems and social and environmental issues, has been prepared in cooperation with MOWE and TEC-OYO as per Annex 3 attached hereto.

Both side confirmed that EIA procedure for the piped water supply system proceed by DWD under the terms of M/D on the First Preparatory Survey which held on August 23rd, 2011, at MOWE. MOWE promised that the actual EIA procedure will completed before February 2011 after contracting with CERTIFIED AND REGISTERED ENVIRONMENTAL PRACTITIONERS IN UGANDA. The EIA for boreholes with handpump will be conducted together with that above for RGCs.

Table 1 Selected Villages and Prioritized Altanative Villages for Borehole with Handpump

No.	Village	Village No.	District	County	Sub-county	Parish	Access Condition		Drilling Depth		Bedrock Depth		Static Water Level		Yield			
							1:ok,2:difficult,3:impossible	Score	(m)	Score	(m)	Score	(m)	Score	(m3/h)	Score	Total Score	Rank
1	Bibia East	1	Amuru	Kilak	Attiak	Bibia	1	100	68.6	44.9	7.3	10.1	12.7	63.8	2.6	52.4	271	20
3	Okidi North	3	Amuru	Kilak	Attiak	okidi	1	100	68.6	44.9	13.7	23.3	12.7	63.8	2.6	52.4	284	13
4	Pacilo East	4	Amuru	Kilak	Attiak	Pacilo	1	100	68.6	44.9	29.3	56.2	12.7	63.8	2.6	52.4	318	2
5	Palukere East	5	Amuru	Kilak	Attiak	Palukere	1	100	68.6	44.9	9.1	13.5	12.7	63.8	2.6	52.4	275	18
8	Pupwonya East	8	Amuru	Kilak	Attiak	Popwonya	1	100	68.6	44.9	32.8	63.6	12.7	63.8	2.6	52.4	325	1
9	Paomo	9	Amuru	Kilak	Pabbo	Gaya	1	100	62.9	52.9	5.7	6.3	7.6	78.3	2.2	38.6	276	15
10	Kal centre	10	Amuru	Kilak	Pabbo	Pabbo Kal	1	100	62.9	52.9	18.3	33.0	7.6	78.3	2.2	38.6	303	5
12	Olinga	12	Amuru	Kilak	Pabbo	Labala	1	100	62.9	52.9	19.3	35.1	7.6	78.3	2.2	38.6	305	4
13	Kati Kati A	13	Amuru	Kilak	Pabbo	Palwong	1	100	62.9	52.9	17.5	31.3	7.6	78.3	2.2	38.6	301	6
14	Abera	14	Amuru	Kilak	Pabbo	Parubanga	1	100	62.9	52.9	5.6	6.1	7.6	78.3	2.2	38.6	276	17
17	Abyce	17	Amuru	Kilak	Lamogi	Anwaryogi	1	100	67.1	47.1	20.2	37.0	10.9	68.8	2.2	39.2	292	9
18	Amora	18	Amuru	Kilak	Lamogi	Guru-Guru	1	100	67.1	47.1	17.8	31.9	10.9	68.8	2.2	39.2	287	12
19	Opok	19	Amuru	Kilak	Lamogi	Gira-Gira	1	100	67.1	47.1	13.8	23.5	10.9	68.8	2.2	39.2	278	14
20	Pakure	20	Amuru	Kilak	Lamogi	Lacor	1	100	67.1	47.1	12.6	20.9	10.9	68.8	2.2	39.2	276	16
21	Coorom	21	Amuru	Kilak	Lamogi	Pagoro	1	100	67.1	47.1	31.7	61.3	10.9	68.8	2.2	39.2	316	3
23	Odur	23	Amuru	Kilak	Lamogi	Coke	1	100	67.1	47.1	20.2	37.0	10.9	68.8	2.2	39.2	292	9
28	Labongo	28	Amuru	Kilak	Amuru	Pagak	1	100	71.9	40.1	31.7	61.3	13.8	60.6	2.0	34.1	296	8
30	Mutema	30	Amuru	Kilak	Amuru	Palyec	1	100	71.9	40.1	17.8	31.9	13.8	60.6	2.0	34.1	267	22
32	Reckioeke	32	Amuru	Kilak	Amuru	Palyec	1	100	71.9	40.1	31.8	61.5	13.8	60.6	2.0	34.1	296	7
33	Lamolo Coke	33	Amuru	Kilak	Lamogi	Coke	1	100	67.1	47.1	20.2	37.0	10.9	68.8	2.2	39.2	292	9
34	Apaa	34	Amuru	Kilak	Pabbo	Labala	1	100	62.9	52.9	2.7	0.0	7.6	78.3	2.2	38.6	270	21
35	Palukere West	35	Amuru	Kilak	Attiak	Palukere	1	100	68.6	44.9	9.1	13.5	12.7	63.8	2.6	52.4	275	18
48	Kal	48	Nwoya	Nwoya	Anaka	Paduny	1	100	78.7	30.4	28.3	54.1	10.2	70.8	2.3	42.2	297	8
54	Agonga B	54	Nwoya	Nwoya	Koch Goma	Agonga	1	100	56.3	62.5	12.1	19.9	11.6	66.9	2.1	36.8	286	9
62	Pannnolango	62	Nwoya	Nwoya	Purongo	Latoro	1	100	66.4	48.0	19.5	35.5	15.3	56.4	3.9	96.4	336	5
64	Lodi	64	Nwoya	Nwoya	Purongo	Paromo	1	100	66.4	48.0	16.9	30.0	15.3	56.4	3.9	96.4	331	6
65	Patira East	65	Nwoya	Nwoya	Purongo	Patira	1	100	66.4	48.0	22.1	41.0	15.3	56.4	3.9	96.4	342	2
66	Patira West	66	Nwoya	Nwoya	Purongo	Patira	1	100	66.4	48.0	22.1	41.0	15.3	56.4	3.9	96.4	342	2
67	Pawatomero Central	67	Nwoya	Nwoya	Purongo	Pawatomero	1	100	66.4	48.0	24.9	46.9	15.3	56.4	3.9	96.4	348	1
68	Pawatomero East	68	Nwoya	Nwoya	Purongo	Pawatomero	1	100	66.4	48.0	22.1	41.0	15.3	56.4	3.9	96.4	342	2
70	Lagazi	70	Nwoya	Nwoya	Purongo	Pabit East	1	100	66.4	48.0	7.4	9.9	15.3	56.4	3.9	96.4	311	7
90	Omel	90	Gulu	Achwa	Paicho	Omel	1	100	72.9	38.8	26.8	51.0	9.9	71.6	2.6	53.7	315	10
95	Gulu PTC	95	Gulu	Achwa	Paicho	Unyama	1	100	72.9	38.8	22.3	41.4	9.9	71.6	2.6	53.7	306	13
96	Agoro I	96	Gulu	Achwa	Pafaro	Labworomor	1	100	63.5	52.2	35.3	68.9	11.4	67.3	3.1	68.9	357	2
101	Kiteny Central	101	Gulu	Achwa	Pafaro	Owalo	1	100	63.5	52.2	17.8	31.9	11.4	67.3	3.1	68.9	320	8
105	Adak	105	Gulu	Achwa	Patiko	Pugwenyi	1	100	63.5	52.2	6.3	7.6	7.7	78.0	4.8	100.0	338	4
106	Labworomor	106	(Omoro)	Omoro	Bobi	Paidongo	1	100	59.0	58.6	44.8	89.0	9.7	72.2	2.3	44.5	364	1
107	Alang	107	(Omoro)	Omoro	Bobi	Paidwe	1	100	59.0	58.6	16.1	28.3	9.7	72.2	2.3	44.5	304	14
108	Ibar	108	(Omoro)	Omoro	Bobi	Palenga	1	100	59.0	58.6	20.8	38.3	9.7	72.2	2.3	44.5	314	12
111	Ariya	111	(Omoro)	Omoro	Koro	Acoyo	1	100	61.9	54.4	22.3	41.4	9.8	72.0	2.9	64.2	332	5
115	Obwola	115	(Omoro)	Omoro	Koro	Lapainat West	1	100	61.9	54.4	15.8	27.7	9.8	72.0	2.9	64.2	318	9
116	Kal A and B	116	(Omoro)	Omoro	Koro	Pageya	1	100	61.9	54.4	31.6	61.1	9.8	72.0	2.9	64.2	352	3
124	Alwii	124	(Omoro)	Omoro	Lalogi	Idobo	1	100	64.1	51.3	29.1	55.8	10.5	70.0	2.4	46.4	324	6
125	Latinnver	125	(Omoro)	Omoro	Lalogi	Idobo	1	100	64.1	51.3	29.1	55.8	10.5	70.0	2.4	46.4	324	6
126	Apurowiya I	126	(Omoro)	Omoro	Lalogi	Jaka	1	100	64.1	51.3	17.6	31.5	10.5	70.0	2.4	46.4	299	16
136	Owak	136	(Omoro)	Omoro	Ongako	Abwoch	1	100	74.5	36.4	26.6	50.5	9.9	71.8	2.7	55.8	314	11
138	Lamin Lawino	138	(Omoro)	Omoro	Ongako	Ongako Kal	1	100	74.5	36.4	20.8	38.3	9.9	71.8	2.7	55.8	302	15

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Table 1 Selected Villages and Prioritized Altanative Villages for Borehole with Handpump

No.	Village	Village No.	District	County	Sub-county	Parish	Access Condition		Drilling Depth		Bedrock Depth		Static Water Level		Yield			
							1:ok,2:difficult,3:impossible	Score	(m)	Score	(m)	Score	(m)	Score	(m3/h)	Score	Total Score	Rank
144	Sub County HQ	144	Agago	Agago	Lira Palwo	omongo	1	100	60.6	56.2	7.0	9.1	9.7	72.4	2.6	52.1	290	15
145	Tori East	145	Agago	Agago	Lira Palwo	Latome	1	100	60.6	56.2	36.8	72.1	9.7	72.4	2.6	52.1	353	3
146	Agwene	146	Agago	Agago	Lira Palwo	Latome	1	100	60.6	56.2	36.8	72.1	9.7	72.4	2.6	52.1	353	3
148	Lapyem	148	Agago	Agago	Lira Palwo	Lanyirinyi	1	100	60.6	56.2	11.1	17.8	9.7	72.4	2.6	52.1	299	14
150	Kotomor east	150	Agago	Agago	Kotomor (Patongo)	Apobo	1	100	57.7	60.5	18.0	32.3	11.4	67.5	3.6	85.6	346	5
151	Amin Ogwal	151	Agago	Agago	Kotomor (Patongo)	Olek	1	100	57.7	60.5	18.0	32.3	11.4	67.5	3.6	85.6	346	5
152	Omugo Ongom	152	Agago	Agago	Kotomor (Patongo)	Olyelowidyel	1	100	57.7	60.5	9.6	14.6	11.4	67.5	3.6	85.6	328	8
153	Te Vwao	153	Agago	Agago	Kotomor (Patongo)	Ogong	1	100	57.7	60.5	9.4	14.2	11.4	67.5	3.6	85.6	328	10
154	opyel Central	154	Agago	Agago	Patongo	Kal	1	100	57.7	60.5	24.4	45.9	11.4	67.5	3.6	85.6	359	2
156	Opal Oryomko	156	Agago	Agago	Patongo	odongkiwinyo	1	100	57.7	60.5	11.2	18.0	11.4	67.5	3.6	85.6	331	7
158	Owito	158	Agago	Agago	Patongo	Ikikwangole	1	100	57.7	60.5	9.0	13.3	11.4	67.5	3.6	85.6	327	11
159	Atanga	159	Agago	Agago	Wol	Kalagam	1	100	60.7	56.1	11.8	19.2	22.5	35.8	3.3	75.8	287	16
163	Abululkwang	163	Agago	Agago	Wol	Ginda	1	100	60.7	56.1	58.9	100.0	22.5	35.8	3.3	75.8	368	1
166	Aleb Tong	166	Agago	Agago	Arum (Omot)	Kazikazi	1	100	54.1	65.6	17.2	30.7	7.7	78.0	2.6	52.3	327	12
167	Wii Alup	167	Agago	Agago	Arum (Omot)	Kazikazi	1	100	54.1	65.6	17.8	31.9	7.7	78.0	2.6	52.3	328	9
172	Acam Roma	172	Agago	Agago	Lokole	Ladere	1	100	59.1	58.5	15.8	27.7	24.4	30.4	2.2	40.0	256	17
173	Lela Kabala	173	Agago	Agago	Wol	atut	1	100	60.7	56.1	26.8	51.0	22.5	35.8	3.3	75.8	319	13
180	Apyeta Central	180	Lamwo	Lamwo	Palabek Ogili	Apyeta	1	100	64.9	50.2	33.1	64.3	23.1	33.9	2.1	35.5	284	12
182	Padwat West (Lalum (	182	Lamwo	Lamwo	Palabek Ogili	Padwat	1	100	64.9	50.2	17.8	31.9	23.1	33.9	2.1	35.5	251	19
185	Dech East	185	Lamwo	Lamwo	Padibe East	Katum	1	100	60.9	55.8	18.0	32.3	21.8	37.6	1.5	16.7	243	21
186	Dog Lokutu East	186	Lamwo	Lamwo	Padibe East	Kubiyee	1	100	60.9	55.8	18.0	32.3	21.8	37.6	1.5	16.7	243	21
188	Gem (Gem)	188	Lamwo	Lamwo	Madi-opei	Kal	1	100	75.8	34.6	120.0	100.0	26.5	24.2	2.2	39.1	298	6
190	Pobuta	190	Lamwo	Lamwo	Madi-opei	Pobura	1	100	75.8	34.6	32.9	63.8	26.5	24.2	2.2	39.1	262	18
195	Tumbafu West	195	Lamwo	Lamwo	Padibe West	Ywaya	1	100	66.3	48.2	23.3	43.6	21.9	37.5	1.6	21.5	231	20
196	Obere	196	Lamwo	Lamwo	Agoro	Ngacino	1	100	60.9	55.9	45.4	90.3	25.0	28.5	3.5	81.9	357	3
197	Loromibenge B	197	Lamwo	Lamwo	Agoro	Pubar	1	100	60.9	55.9	5.3	5.3	25.0	28.5	3.5	81.9	272	16
199	Moroto East	199	Lamwo	Lamwo	Agoro	Pawach	1	100	60.9	55.9	46.1	91.8	25.0	28.5	3.5	81.9	358	2
201	Lobilulu (obokolot)	201	Lamwo	Lamwo	Paloga	Bungu	1	100	60.7	56.2	22.5	41.9	20.9	40.2	1.8	25.7	264	17
203	Biber (Ibba)	203	Lamwo	Lamwo	Paloga	Bungu	1	100	60.7	56.2	38.2	75.1	20.9	40.2	1.8	25.7	297	9
206	Garia North	206	Lamwo	Lamwo	Lokung	Parapono	2	30	57.9	60.1	24.0	45.0	13.8	60.5	3.5	81.9	288	11
207	Liri Central	207	Lamwo	Lamwo	Palabek Kal	Ayuu Alali	1	100	64.3	51.0	39.5	77.8	14.5	58.5	3.3	76.9	364	1
208	Lanywang Ewalagun	208	Lamwo	Lamwo	Palabek Kal	Labigirwang	1	100	64.3	51.0	5.4	5.7	14.5	58.5	3.3	76.9	292	10
209	Ayuu-lapur(Barara)	209	Lamwo	Lamwo	Palabek Gem	Anaka	1	100	55.9	62.9	8.8	12.9	13.7	60.9	2.3	42.4	279	13
212	Pawena central (Tee K	212	Lamwo	Lamwo	Palabek Gem	Cubu	1	100	55.9	62.9	5.7	6.3	13.7	60.9	2.3	42.4	273	15
214	Amina (Nino uni)	214	Lamwo	Lamwo	Palabek Gem	Gem	1	100	55.9	62.9	21.7	40.2	13.7	60.9	2.3	42.4	306	4
215	Dyangbii (Near Iulara'	215	Lamwo	Lamwo	Palabek Gem	Patanga	1	100	55.9	62.9	17.6	31.5	13.7	60.9	2.3	42.4	298	7
216	Kafata (Mbuya Parent	216	Lamwo	Lamwo	Palabek Gem	Patanga	1	100	55.9	62.9	17.6	31.5	13.7	60.9	2.3	42.4	298	7
217	Amuha (Aloyi)	217	Lamwo	Lamwo	Palabek Gem	Moroto	1	100	55.9	62.9	21.7	40.2	13.7	60.9	2.3	42.4	306	4
218	Kamama central B/C I	218	Lamwo	Lamwo	Palabek Gem	Moroto	1	100	55.9	62.9	7.9	11.0	13.7	60.9	2.3	42.4	277	14

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Table 1 Selected Villages and Prioritized Altanative Villages for Borchole with Handpump

							Access Condition		Driling Depth		Bedrock Depth		Static Water Level		Yield			
No.	Village	Village No.	District	County	Sub-county	Parish	1:ok,2:difficult, 3:impossible	Score	(m)	Score	(m)	Score	(m)	Score	(m3/h)	Score	Total Score	Rank
221	Okidi central	221	Kitgum	Chua	Amida	Okidi	1	100	62.7	53.3	12.8	21.4	24.1	31.1	2.0	32.6	238	13
225	Laugu	225	Kitgum	Chua	Kitgum Matidi	Oryang	1	100	64.1	51.3	29.0	55.6	23.7	32.3	1.8	27.6	267	5
228	Rucarnen	228	Kitgum	Chua	Lagoro	Lakwor	1	100	62.0	54.3	5.2	5.3	21.3	39.2	2.2	40.0	239	12
229	Akino (Dem lulu kwa	229	Kitgum	Chua	Lagoro	Lalano	1	100	62.0	54.3	29.0	55.6	21.3	39.2	2.2	40.0	289	3
230	Gulu gwen Oma .B.	230	Kitgum	Chua	Lagoro	Pawidi	1	100	62.0	54.3	16.0	28.1	21.3	39.2	2.2	40.0	262	7
231	Ocettokkoc Trading ce	231	Kitgum	Chua	Layamo	Ocettokkoc	1	100	63.9	51.6	20.8	38.3	25.0	28.5	1.8	25.9	244	9
232	Pagen Central (Corner	232	Kitgum	Chua	Layamo	Pagen	1	100	63.9	51.6	20.5	37.6	25.0	28.5	1.8	25.9	244	10
233	Pamolo central	233	Kitgum	Chua	Layamo	Pamolo	1	100	63.9	51.6	11.9	19.5	25.0	28.5	1.8	25.9	226	15
234	Panyum "A"	234	Kitgum	Chua	Mucwini	Bura	1	100	57.6	60.5	56.4	100.0	26.2	25.2	2.5	50.6	336	1
235	Ayom Olola "B"	235	Kitgum	Chua	Mucwini	Okol	1	100	57.6	60.5	5.7	6.3	26.2	25.2	2.5	50.6	243	11
239	Yepa A	239	Kitgum	Chua	Mucwini	Yepa	1	100	57.6	60.5	16.5	29.2	26.2	25.2	2.5	50.6	265	6
240	Juba	240	Kitgum	Chua	Mucwini	Akara	2	40	57.6	60.5	31.6	61.1	26.2	25.2	2.5	50.6	237	14
241	Lacan Olinga West	241	Kitgum	Chua	Mucwini	Akara	1	100	57.6	60.5	31.6	61.1	26.2	25.2	2.5	50.6	297	2
242	Winyorac-Pawiny	242	Kitgum	Chua	Namokora	Kalabong	1	100	75.4	35.2	120.0	100.0	30.3	13.4	1.3	10.6	259	8
246	Labworomor	246	Kitgum	Chua	Omiya Anyima	Melong	1	100	63.9	51.6	31.5	60.9	25.2	28.1	1.8	27.8	268	4
258	Ahili	258	Pader	Aruu	Lapul	Koyo	1	100	58.4	59.4	20.0	36.6	8.8	74.7	1.5	17.9	289	12
259	Nek-Nono	259	Pader	Aruu	Lapul	Atoo	1	100	58.4	59.4	138.4	100.0	8.8	74.7	1.5	17.9	352	2
260	Te-okuto	260	Pader	Aruu	Puranga	Parwech	1	100	54.0	65.7	14.6	25.2	9.2	73.7	1.6	20.3	285	13
261	Tee tworo	261	Pader	Aruu	Puranga	Aringa	1	100	54.0	65.7	35.6	69.6	9.2	73.7	1.6	20.3	329	3
263	Apwor kla	263	Pader	Aruu	Puranga	Laminajiko	1	100	54.0	65.7	16.9	30.0	9.2	73.7	1.6	20.3	290	11
266	Lapoyankwee	266	Pader	Aruu	Atanga	Lawiyeadul	1	100	56.4	62.3	103.4	100.0	9.2	73.9	2.5	50.1	386	1
268	Aringo yon	268	Pader	Aruu	Angagura (Atanga)	Burlobo	1	100	56.4	62.3	13.8	23.5	9.2	73.9	2.5	50.1	310	5
269	Libi	269	Pader	Aruu	Angagura (Atanga)	Burlobo	1	100	56.4	62.3	13.8	23.5	9.2	73.9	2.5	50.1	310	5
270	Alup	270	Pader	Aruu	Awere	Rackoko	1	100	60.7	56.1	5.4	5.7	9.3	73.6	3.1	70.2	306	8
271	Parwech Lukoc east	271	Pader	Aruu	Awere	Lagile	1	100	60.7	56.1	5.8	6.6	9.3	73.6	3.1	70.2	306	7
282	Bangalela	282	Pader	Aruu	Pajule	Oryang	1	100	62.4	53.7	16.2	28.5	16.1	54.0	2.6	54.4	291	10
286	Dure north	286	Pader	Aruu	Latanya (Acholibur)	Dure	1	100	60.4	56.6	10.7	16.9	21.7	38.1	2.3	42.2	254	15
287	Obalo	287	Pader	Aruu	Latanya (Acholibur)	Latigi	1	100	60.4	56.6	34.9	68.1	21.7	38.1	2.3	42.2	305	9
290	Pagor	290	Pader	Aruu	Ogom (Kilak)	Kalanguru	1	100	61.7	54.8	7.1	9.3	14.3	59.2	2.7	57.2	281	14
292	Lapany	292	Pader	Aruu	Ogom (Kilak)	Otong	1	100	61.7	54.8	26.8	51.0	14.3	59.2	2.7	57.2	322	4

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Table 1 Selected Villages and Prioritized Altanative Villages for Borchole with Handpump

							Access Condition		Driling Depth		Bedrock Depth		Static Water Level		Yield			
No.	Village	Village No.	District	County	Sub-county	Parish	1:ok,2:difficult, 3:impossible	Score	(m)	Score	(m)	Score	(m)	Score	(m3/h)	Score	Total Score	Rank
Prioritized Altanative Villages																		
127	Amrowiya II	127	(Omoro)	Omoro	Lalogi	Jaka	1	100	64.1	51.3	17.6	31.5	10.5	70.0	2.4	46.4	299	1
114	Aiede	114	(Omoro)	Omoro	Koro	Lapainat East	1	100	61.9	54.4	5.7	6.3	9.8	72.0	2.9	64.2	297	2
89	Acutomer	89	Gulu	Adwa	Paicho	Kal Umu	1	100	72.9	38.8	7.6	10.4	9.9	71.6	2.6	53.7	275	3
7	Pukomu	7	Amuru	Kilak	Attiak	Pawal	1	100	68.6	44.9	3.7	2.1	12.7	63.8	2.6	52.4	263	4
46	Akago	46	Nwoya	Nwoya	Anaka	Pabali	1	100	78.7	30.4	10.0	15.4	10.2	70.8	2.3	42.2	259	5
141	Lutage	141	Agago	Agago	Lokole	Olumpili	1	100	59.1	58.5	15.0	26.0	24.4	30.4	2.2	40.0	255	6
289	Dagolwato	289	Pader	Aruu	Latanya (Acholibur)	Nyekidi	1	100	60.4	56.6	10.5	16.5	21.7	38.1	2.3	42.2	253	7
25	Toddi	25	Amuru	Kilak	Amuru	Acwera	1	100	71.9	40.1	11.1	17.8	13.8	60.6	2.0	34.1	253	8
31	Ogeli	31	Amuru	Kilak	Amuru	Pamuca	1	100	71.9	40.1	10.8	17.1	13.8	60.6	2.0	34.1	252	9
170	Laming Onen	170	Agago	Agago	Omiya Pacwa (Paimol)	Layita	1	100	60.9	55.8	17.8	31.9	25.5	27.1	2.1	36.0	251	10
37	Bwobomam B	37	Nwoya	Nwoya	Alero	Bwobomam	1	100	75.0	35.6	9.2	13.7	10.3	70.6	1.8	27.9	248	11
40	Latekodong	40	Nwoya	Nwoya	Alero	Pacokrac	1	100	75.0	35.6	8.9	13.1	10.3	70.6	1.8	27.9	247	12
285	Lela awoki	285	Pader	Aruu	Latanya (Acholibur)	Golo	1	100	60.4	56.6	7.3	9.7	21.7	38.1	2.3	42.2	247	13
171	Lakwa A	171	Agago	Agago	Omiya Pacwa (Paimol)	Lakwa	1	100	60.9	55.8	15.8	27.7	25.5	27.1	2.1	36.0	247	14
123	Otal	123	(Omoro)	Omoro	Lalogi	Gem	2	40	64.1	51.3	19.3	35.1	10.5	70.0	2.4	46.4	243	15
184	Lio-Tee okworo	184	Lamwo	Lamwo	Padibe East	Alaa	1	100	60.9	55.8	17.8	31.9	21.8	37.6	1.5	16.7	242	16
187	Tadi South	187	Lamwo	Lamwo	Padibe East	Wanglii	1	100	60.9	55.8	17.8	31.9	21.8	37.6	1.5	16.7	242	16
27	Amoyokuma	27	Amuru	Kilak	Amuru	Pagak	1	100	71.9	40.1	4.7	4.2	13.8	60.6	2.0	34.1	239	18
29	Lapuro	29	Amuru	Kilak	Amuru	Pailyec	1	100	71.9	40.1	4.7	4.2	13.8	60.6	2.0	34.1	239	18
15	Ceri	15	Amuru	Kilak	Pabbo	Pogo	2	40	62.9	52.9	16.4	29.0	7.6	78.3	2.2	38.6	239	20
181	Padwat Central (Padw	181	Lamwo	Lamwo	Palabek Ogili	Padwat	1	100	64.9	50.2	11.5	18.6	23.1	33.9	2.1	35.5	238	21
178	Labeloangony	178	Agago	Agago	Paimol	Ngora	1	100	60.9	55.8	10.9	17.3	25.5	27.1	2.1	36.0	236	22
179	Te Okiro	179	Agago	Agago	Paimol	Ngora	1	100	60.9	55.8	10.9	17.3	25.5	27.1	2.1	36.0	236	22
193	Lagwel P/S	193	Lamwo	Lamwo	Padibe West	Lagwel	1	100	66.3	48.2	15.6	27.3	21.9	37.5	1.6	21.5	234	24
110	Adak	110	(Omoro)	Omoro	Bobi	Patek	2	40	59.0	58.6	10.7	16.9	9.7	72.2	2.3	44.5	232	25
176	Tong Wiri South	176	Agago	Agago	Paimol	Pacabol	1	100	60.9	55.8	7.4	9.9	25.5	27.1	2.1	36.0	229	26
202	Langole (Keca)	202	Lamwo	Lamwo	Paloga	Bungu	2	40	60.7	56.2	31.3	60.5	20.9	40.2	1.8	25.7	223	27
210	Ajaa ogala (Alere)	210	Lamwo	Lamwo	Palabek Gem	Aauka	2	40	55.9	62.9	7.9	11.0	13.7	60.9	2.3	42.4	217	28
11	Andara	11	Amuru	Kilak	Pabbo	Labala	2	40	62.9	52.9	4.7	4.2	7.6	78.3	2.2	38.6	214	29
278	Lali	278	Pader	Aruu	Laguti	Pakeyo	3	0	58.4	59.4	8.5	12.3	11.0	80.6	2.6	53.7	206	30
264	Aria	264	Pader	Aruu	Atanga	Kal	3	0	56.4	62.3	10.0	15.4	9.2	73.9	2.5	50.1	202	31
252	Olubor (security site)	252	Kitgum	Chua	Orom	Lolia	1	100	69.8	43.2	20.8	38.3	30.8	12.1	1.2	5.6	199	32
253	Agora	253	Kitgum	Chua	Orom	Lolwa	1	100	69.8	43.2	17.8	31.9	30.8	12.1	1.2	5.6	193	33
243	Lakokok	243	Kitgum	Chua	Namokora	Pagwok	1	100	75.4	35.2	8.7	12.7	30.3	13.4	1.3	10.6	172	34
249	Lobale	249	Kitgum	Chua	Orom	Akurumo	1	100	69.8	43.2	5.6	6.1	30.8	12.1	1.2	5.6	167	35
200	Lamwaka A	200	Lamwo	Lamwo	Agoro	Pawach	3	0	60.9	55.9	11.5	18.6	25.0	28.5	2.0	33.3	136	36

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Table 6 Present Distribution and Conditions of Tool Kits for HPM

1) Standard Tool Kit

Sub-county	Number of Parish	Number of HPMs	Number of Tool Boxes	Condition of Standard Tool Kit: Missing tools: Complete	Few	Several	Many
a. Gulu District							
Unyama	4	3	1		1		
Paicho	4	4	1		1		
Palaro	3	3	2		2		
Patiko	3	3	2		2		
Bobi	5	5	2		2		
Koro	6	7	2		2		
Lalogi	5	5	2		2		
Odek	4	4	2		2		
Ongako	5	5	2		2		
Awach	4	4	2		0		
Bungatira	7	7	2		0		
Lakwana	4	4	2		0		
Mmicipal	4	1	0		0		
	4	0	0		0		
	4	0	0		0		
	4	0	0		0		
Total	70	55	22	0	16	0	0
Remarks: Twenty (20) standard tool kits will be provided by the DWO in December 2011.							
b. Amuru District							
Attiak	8	8	1				1
Pabbo	6	6	1				1
Lamogi	8	8	0				0
Amuru	6	6	0				0
Total	28	28	2	0	0	0	2
Remarks: Amuru sub county includes one Game Reserve Parish							
c. Nwoya District							
Alero	7	6	2	2			
Anaka	6	5	1	1			
Koch Goma	7	2	2	2			
Puronga	6	2	2	2			
Total	26	15	7	7	0	0	0
Remarks: Alero sub county contains one Game Reserve Parish: Koch Goma and Puronga sub counties contain one National Park Parish respectively							
d. Kitgum District							
Amida	6	18	1		1		
Kitgum Matidi	4	9	1		1		
Lagoro	4	10	1		1		
Layamo	4	10	1			1	
Mucwini	9	18	1			1	
Namokora	4	8	0			Missing	1
OmiyaAnyima	4	9	1		1		
Orom	8	11	1		1		
Akwang	*3*	*11*	*1*			*1*	
K.T.C	*7*	*8*	*0*			*Missing*	
Total	53	112	8	0	5	3	1
e. Lamwo District							
Palabek Ogili	4	8	3				3
Padibe East	4	6	2				2
Madi-opei	4	16	3				3
Padibe West	4	12	5			5	
Agoro	6	15	2				2
Paloga	3	3	2				2
Lokung	9	23	9				9
Palabek Kal	4	10	4				4
Palabek Gem	5	18	4			4	
Lamwo TC	*1*	*4*	*1*				*1*
Total	44	115	35	0	0	9	26

Sub-county	Number of Parish	Number of HPMs	Number of Tool Boxes	Condition of Standard Tool Kit: Missing tools: Complete	Few	Several	Many
f. Pader District							
Pader (-Kilak	4	5	1				1
Lapul	4	6	1				1
Puranga	6	10	1				1
Atanga	5	8	1				1
Angagura	4	5	0				
Awere	4	6	1				1
Laguti	3	5	0				
Pajule	6	13	1				1
Latanya	5	5	0				
Ogom	4	6	0				
Achdibur	*4*	*5*	*0*				
Pader TC	*3*	*6*	*2*				
Total	52	80	8	0	0	0	6
g. Agago District							
Lira Palwo	5	2	0				
Arum	4	3	0				
Patongo	4	3	1			1	
Kotomor	4	2	0				
Lokole	5	2	0				
Adilang	7	3	2			2	
Paimol	4	3	0				
Omiya Pacwa	4	2	0				
Wol	8	2	0				
Katongo TC	*5*	*0*	*0*				
Lamiyo	*4*	*4*	*0*				
Omot	*4*	*5*	*0*				
Patongo TC	*4*	*2*	*0*				
Agago TC	*3*	*1*	*0*				
Lapono	*5*	*0*	*0*				

2) Special Tool Kit

Sub-county	Number of Parish	Number of HPMs	Number of Tool Boxes	Condition of **Standard** Tool Kit: Missing tools: Complete	Few	Several	Many
a. Gulu District							
Unyama	4	3	0				
Paicho	4	4	0				
Palaro	3	3	0				
Patiko	3	3	0				
Bobi	5	5	0				
Koro	6	7	0				
Lalogi	5	5	0				
Odek	4	4	0				
Ongako	5	5	0				
Awach	4	4	0				
Bungatira	7	7	0				
Lakwana	4	4	0				
Mmicipal *Bar-dege*	4	1	0				*missing*
Laroro	4	0	0				
Layibi	4	0	0				
Pece	4	0	0				
Total	70	55	0	0	0	0	0
b. Amuru District							
Attiak	8	8	1				1
Pabbo	6	6	1				1
Lamogi	8	8	0				
Amuru	6	6	0				
Total	28	28	2	0	0	0	2
b. Nwoya District							

Sub-county	Number of Parish	Number of HPMs	Number of Tool Boxes	Condition of **Standard** Tool Kit			
				Missing tools			
				Complete	Few	Several	Many
Alero	7	6	2	2			
Anaka	6	5	1	1			
Koch Goma	7	2	2	2			
Puronga	6	2	2	2			
Total	26	15	7	7	0	0	0
d. Kitgum District							
Amida	6	18	0				
Kitgum Matidi	4	9	0				
Lagoro	4	10	0				
Layamo	4	10	0				
Mucwini	9	18	0				
Namokora	4	8	0				
OmiyaAnyima	4	9	0				
Orom	8	11	0				
Akwang	*3*	*11*	*0*				
K.T.C	*7*	*8*	*0*				
Total	53	112	0	0	0	0	0
e. Lamwo District							
Palabek Ogili	4	8	1				1
Padibe East	4	6	2				2
Madi-opei	4	16	0				
Padibe West	4	12	0				
Agoro	6	15	0				
Paloga	3	3	0				
Lokung	9	23	0				
Palabek Kal	4	10	0				
Palabek Gem	5	18	0				
Lamwo TC	*1*	*4*	*0*				
Total	44	115	3	0	0	0	3
f. Pader District							
Pader (-Kilak	4	5	2		2		
Lapul	4	6	1			1	
Puranga	6	10	3		3		
Atanga	5	8	2		2		
Angagura	4	5	2		2		
Awere	4	6	1				1
Laguti	3	5	3	2	1		
Pajule	6	13	2		2		
Latanya	5	5	2		2		
Ogom	4	6	2		2		
Achdibur	*4*	*5*	*2*				*2*
Pader TC	*3*	*6*	*0*				
Total	52	80	22	2	16	1	3
g. Agago District							
Lira Palwo	5	2	0				
Arum	4	3	0				
Patongo	4	3	0				
Kotomor	4	2	0				
Lokole	5	2	0				
Adilang	7	3	0				
Paimol	4	3	0				
Omiya Pacwa	4	2	0				
Wol	8	2	0				
Katongo TC	*5*	*0*	*0*				
Lamiyo	*4*	*4*	*0*				
Omot	*4*	*5*	*0*				
Patongo TC	*4*	*2*	*0*				
Agago TC	*3*	*1*	*0*				
Lapono	*5*	*0*	*0*				

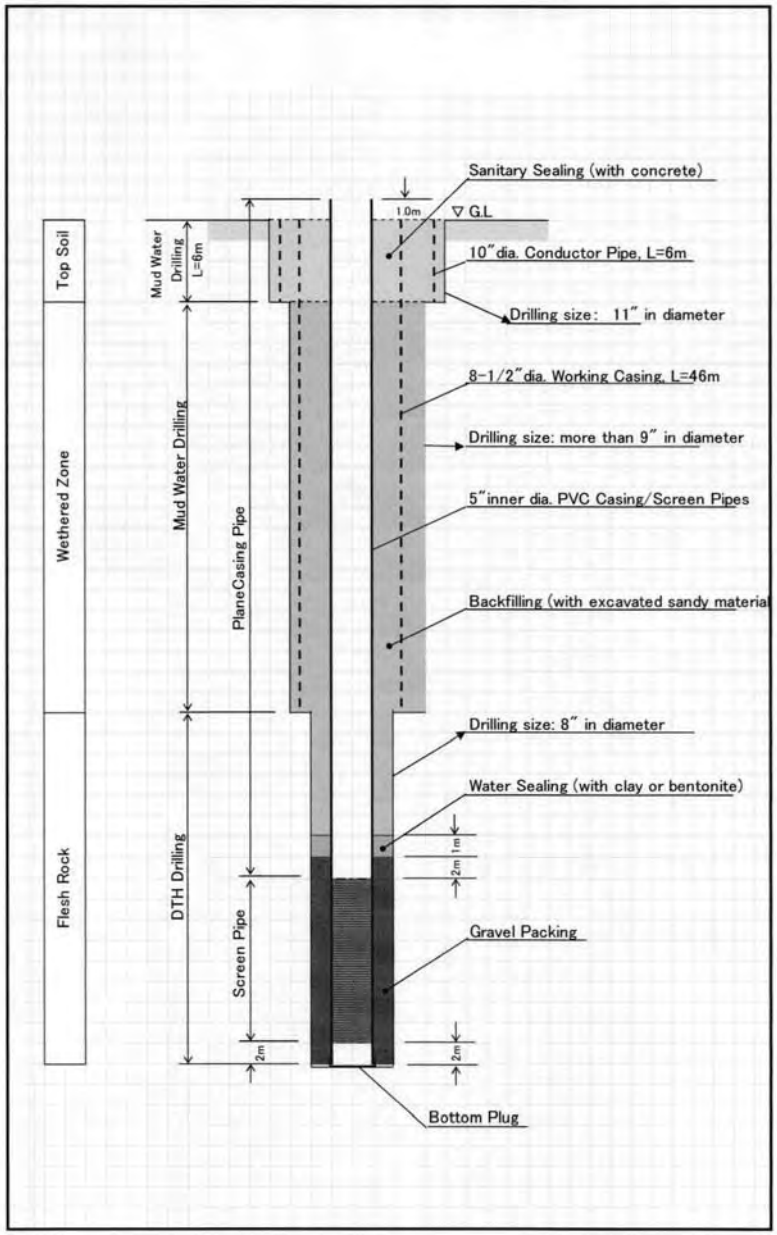

Fig. 2 Standard Borehole Structure

Fig. 4 Draft Plan of Water Supply Facility in Koch Goma RGC

Fig. 5 Draft Plan of Water Supply Facility in Unyama RGC

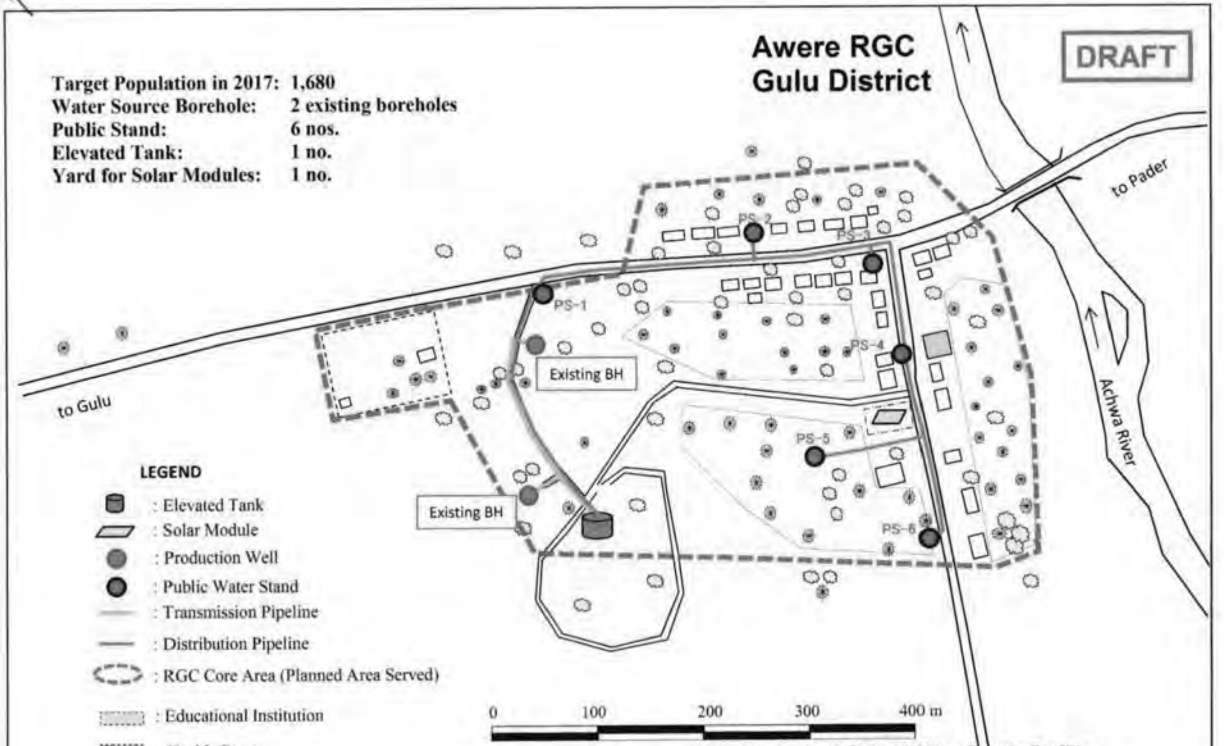

Fig. 6 Draft Plan of Water Supply Facility in Awere RGC

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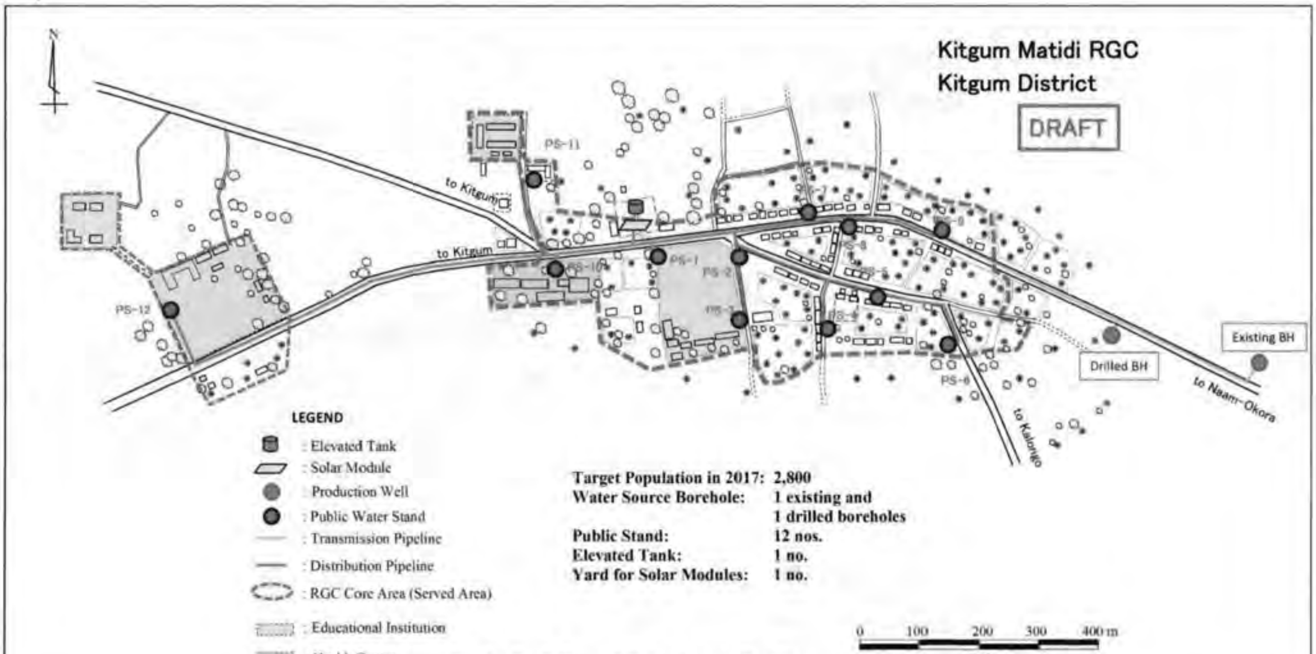

Fig. 7 Draft Plan of Water Supply Facility in Kitgum Matidi RGC

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Fig. 8 Draft Plan of Water Supply Facility in Adilang RGC

Fig. 9 Draft Plan of Water Supply Facility in Corner Kilak RGC

Annex 1 Signed Statement on Land Use for Project Facilities

The Project for Provission of Improved Water Source for Returned IDP in Achori Sub-Region

Form of Quality Control

Form No.: QC-3
QC Item: Site Transfer
Form Title Confirmation of Site Transfer

Name of RGC: Kochi Goma.	District: Nwoya
~~Borehole~~ No.: PWS-03 N: E:	County: Sub-County:

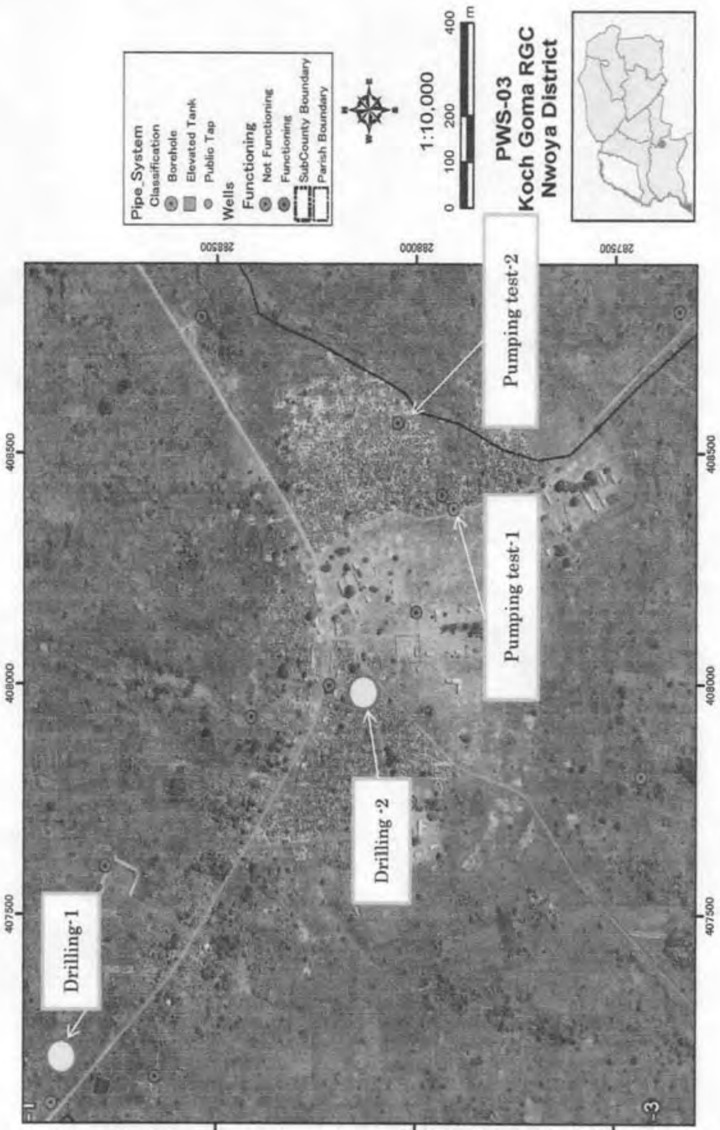
Working space:
- Drilling : 20m x 20m approx.
- Aquifer Tests : 20m x 10m approx.

Confirmed by:

Firms and organizations	Name	Signature
Contractor FGLS / DRACO(U)LTD	KISIRISA CHARLY / Wadamba Silver	Wadamba
Consultant TBC.	Iwao Hamada Hydrogeologist	
District Water office	OTOK ROBERT	
Sub-county LCIII C/P.	OKELLO JOHN BOSCO	
RGC office		
Land load	BINAYO OGABA-	Fw.

Attachment: ~~(if any)~~ Location Map.

Remarks:
Lands for Test drilling point of PWS-03-1, Aquifer tests points (2 sites) are belong to Sub-county office.
Land for Test drilling point of PWS-03-2 is belong to Mr. Binayo Ogaba.



A1 - 3

The Project for Provission of Improved Water Source for Returned IDP in Achori Sub-Region

Form of Quality Control

Form No.: QC-3
QC Item: Site Transfer for Aquifer Tests
Form Title Confirmation of Site Transfer

Date: 27 Oct, 2011

Name of RGC: Unyama	District: Gulu
~~Borehole~~ No.: RWS-06 N: E:	County: Sub-County:

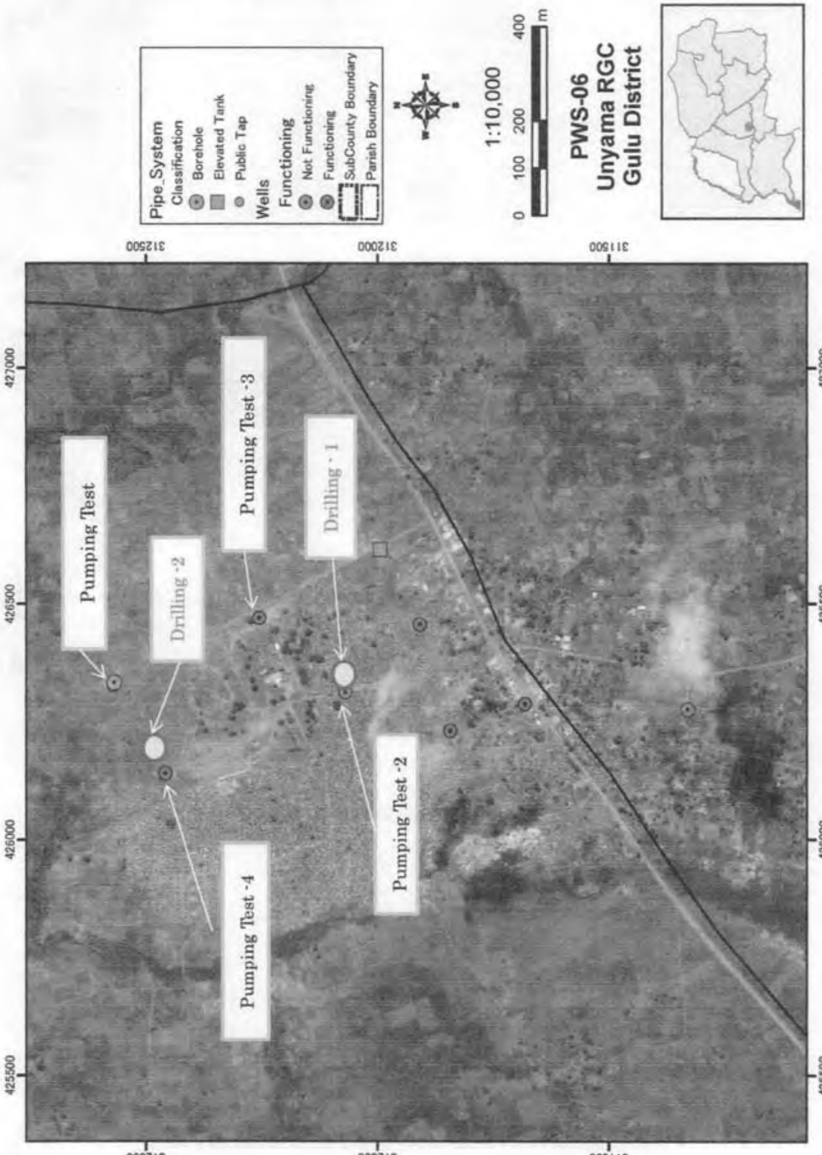
Working space:
Aquifer Tests : 20m x 10m
Drilling : 20m x 20m.

Confirmed by:

Firms and organizations	Name	Signature
Contractor (DRACO AELS)	Watanabe Silvy Hydrogeologist Chanty Kusitisa	
Consultant	Geophysical Engineer Junko Hamada	
District Water office	Mecak S Patrick	The District Water Gulu District Local Gov
Sub-county	Achiro	For SENIOR ASSISTANT SECRETARY UNYAMA S/CTY
RGC office	Manslu Odeke CHAIRMAN L.C.I TE-PWOYO VILLAGE PAKWELO PARISH UNYAMA S/CTY	
Land load	Ochieng	

Attachment: ~~(if any)~~ Location Map.

A1 - 4



A1 - 5

The Project for Provission of Improved Water Source for Returned IDP in Achori Sub-Region

Form of Quality Control

Form No.: QC-3
QC Item: Site Transfer for Aquifer Tests
Form Title Confirmation of Site Transfer

Name of RGC: Awere	District: Gulu
~~Borehole~~ RGC No.: PWS-08	County:
N: E:	Sub-County:

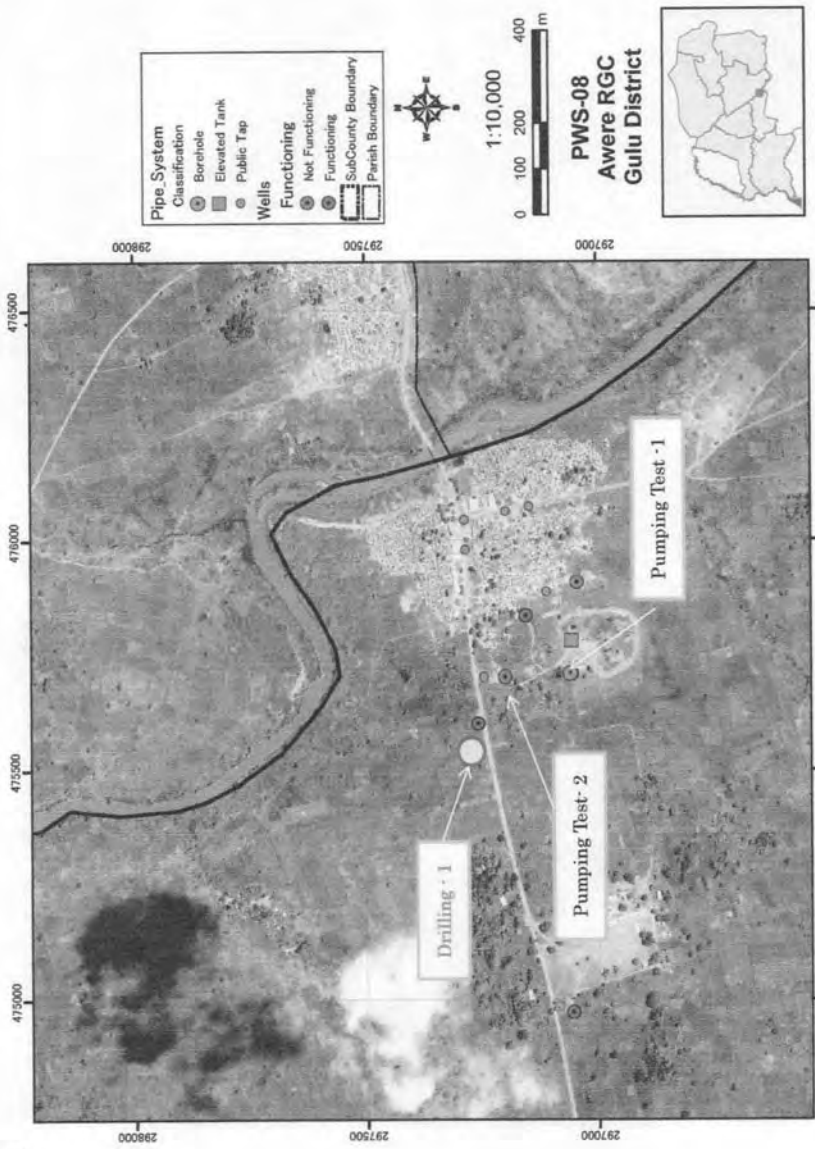
Working space:
1. Drilling site : 20m x 20m /site
2. Aquifer tests : 20m x 15m /site

Confirmed by:

Firms and organizations	Name	Signature
Contractor FELS DRACO	Chenjy Kisrisu / Wadamba Sgwei	[signature]
Consultant	Iwao Hamada	[signature]
District Water office	Mecalk S. Patrick	[signature] The District Water Gulu District Local Gov P. O. Box 2, Gulu - U Date:
Sub-county	OCAYA BOSCO ADEBE.W.	[signature] CHAIRMAN L.C.III ... County Council Date: 25.10.11 Sign:
RGC office		
Land load	LUWA CELLC ATTIONE	THE CHAIRPERSON VILLAGE COUNCIL AJAN LAMOLA-ODEK DATE 25/10/2011
Test Drilling site	OJOK. YOUNG. OKOT RNALD	[signature]

Attachment:(if any)

A1 - 6



The Project for Provission of Improved Water Source for Returned IDP in Achori Sub-Region

Form of Quality Control

Form No.: QC-3
QC Item: Site Transfer for Aquifer Tests
Form Title Confirmation of Site Transfer

Name of RGC: Kitgum Matidi	District: Kitgum
~~Borehole~~ RGC No.: PWS-14	County:
N:	Sub-County:
E:	

Working space:

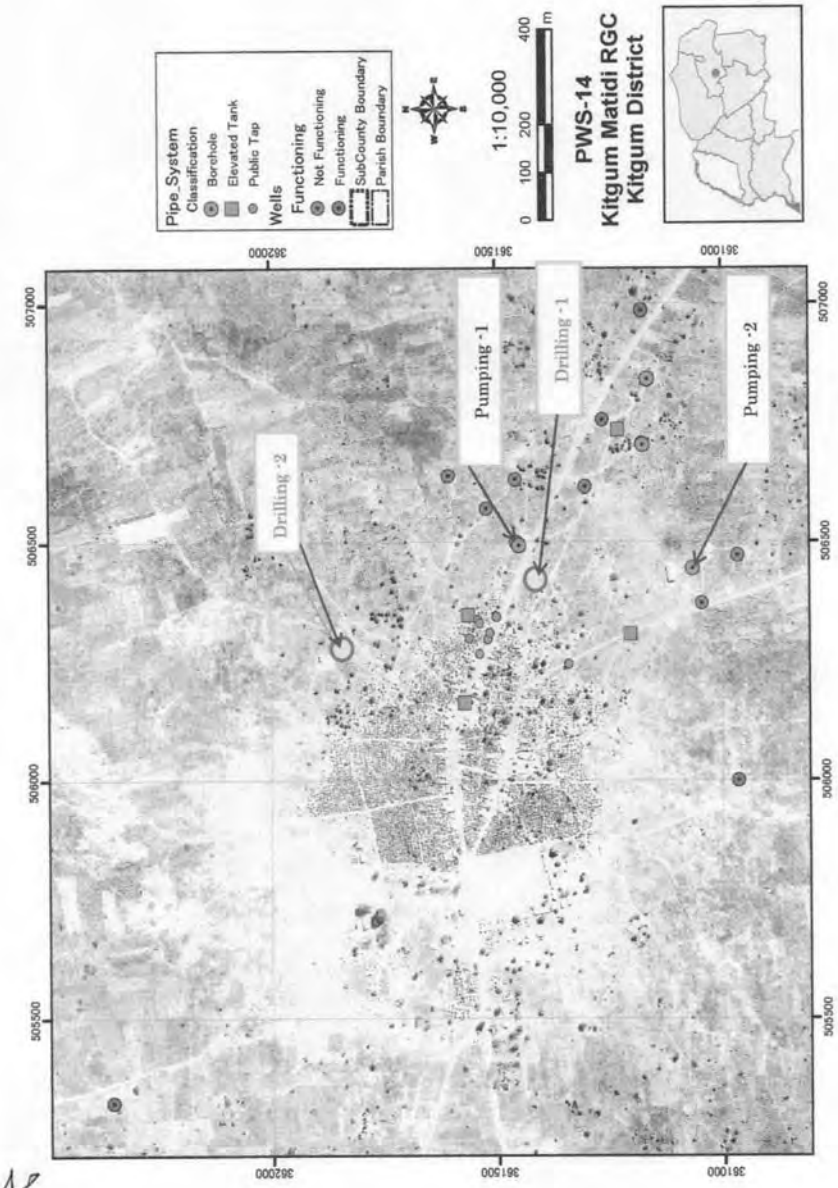
Drilling : 20m x 20m

Aquifer Tests : 15m x 20m

Confirmed by:

Firms and organizations	Name	Signature
Contractor FEELS DRACO	Charity Kusiin Wadamba Sylver	
Consultant TEC	S. Hamada Hydrogeologist	
District Water office	Oryem Peter Okema	
Sub-county KITGUM MATIDI	PIDO OPOKA GERSHON	LC III C/Man.
RGC office		
Land load the drilling site near Church	OHEN-OCHEN SANTIN	

Attachment:(if any) Test Drilling site is public land.



A1 - 9

The Project for Provission of Improved Water Source for Returned IDP in Achori Sub-Region

Form of Quality Control

Form No.: QC-3
QC Item: Site Transfer for Aquifer Tests
Form Title Confirmation of Site Transfer

Name of RGC: Corner Kilak	District: Pader
Borehole No.: PWS-15	County:
N:	Sub-County:
E:	

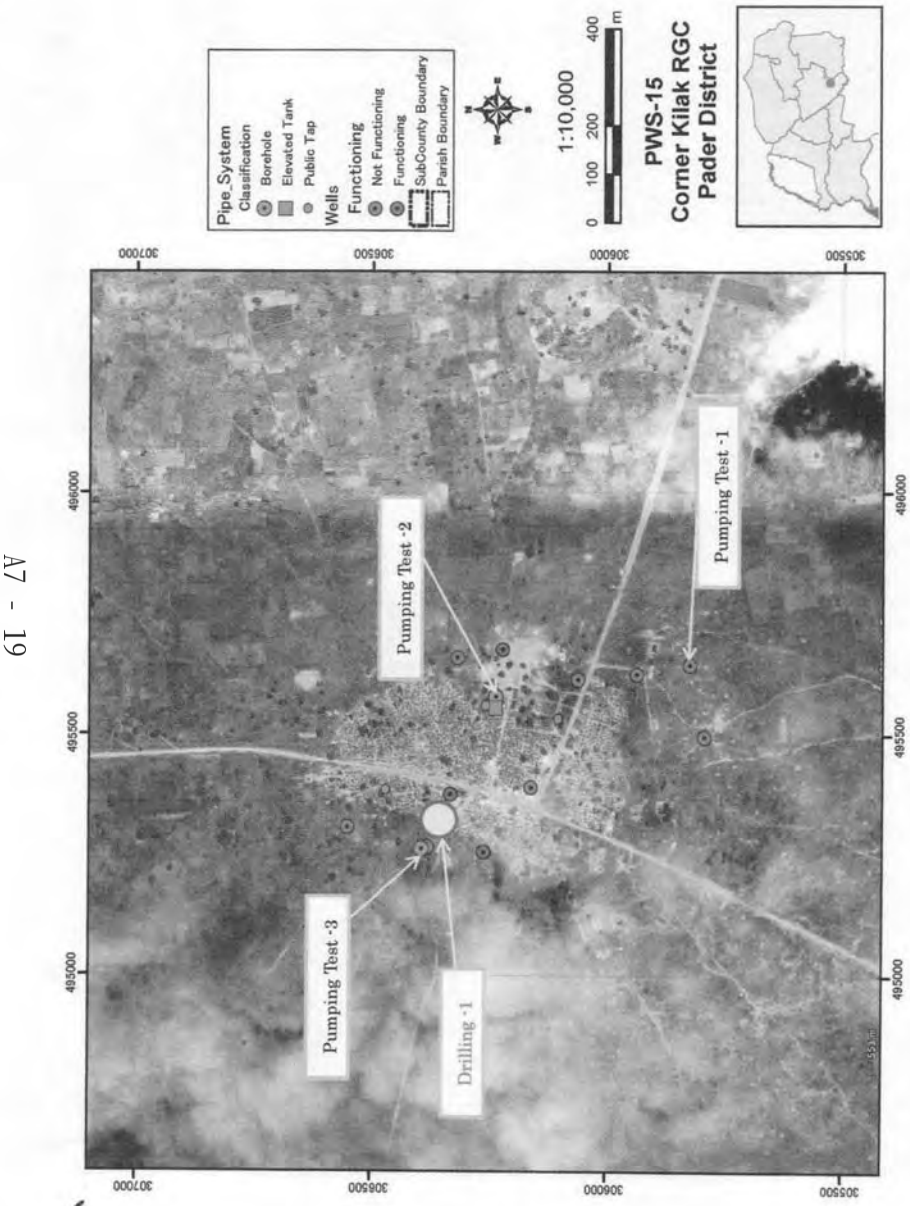
Working space:
Test Drilling : 20m × 20m.
Aquifer test : 15m × 20m.
(existing Boreholes)

Confirmed by:

Firms and organizations		Name	Signature
Contractor	DRACO	Sylver Wadamba	
	FELS	Charity Kisuse	
Consultant		J. Hamada TBC.	
District Water office		Obali Obote Charles	
Sub-county		OKELLO RICHARD OGARA	
RGC office			
Land load		No necessary to get approval from land loads, School yard and subcounty office yard (public land)	
Drilling site PWS-15-TD-1		Kidega Francis	

Attachment:(if any)
Location Map

A1 - 10



The Project for Provission of Improved Water Source for Returned IDP in Achori Sub-Region

Form of Quality Control

Form No.: QC-3
QC Item: Site Transfer for Aquifer Tests
Form Title Confirmation of Site Transfer

Name of RGC: Adilang	District: Agago
~~Borehole~~ RGC No.: PWS-10	County:
N:	Sub-County:
E:	

Working space:

· Test Drilling : 20m x 20m
Aquifer Tests : 15m x 20m.

Confirmed by:

Firms and organizations	Name	Signature
Contractor FELS DRACO	Charity Kusiima Wadamba Silver	
Consultant TEC	S. Hamada Hydrogeologist	
District Water office	Okyel Raymund	0782922781
Sub-county	Ogwang Thomas On Behalf of C-LC III	0752847493
RGC office		
Land load of drilling site	OKECH FRANCIS	

Attachment: ~~(if any)~~ Location Map.

OKOT PETER

ADILANG SUB-COUNTY
LOWER LOCAL GOVERNMENT
P. O. BOX ~~25~~
AGAGO DISTRICT
DATE ~~22-11-11~~

REF: PERMISSION FOR WATER TESTING

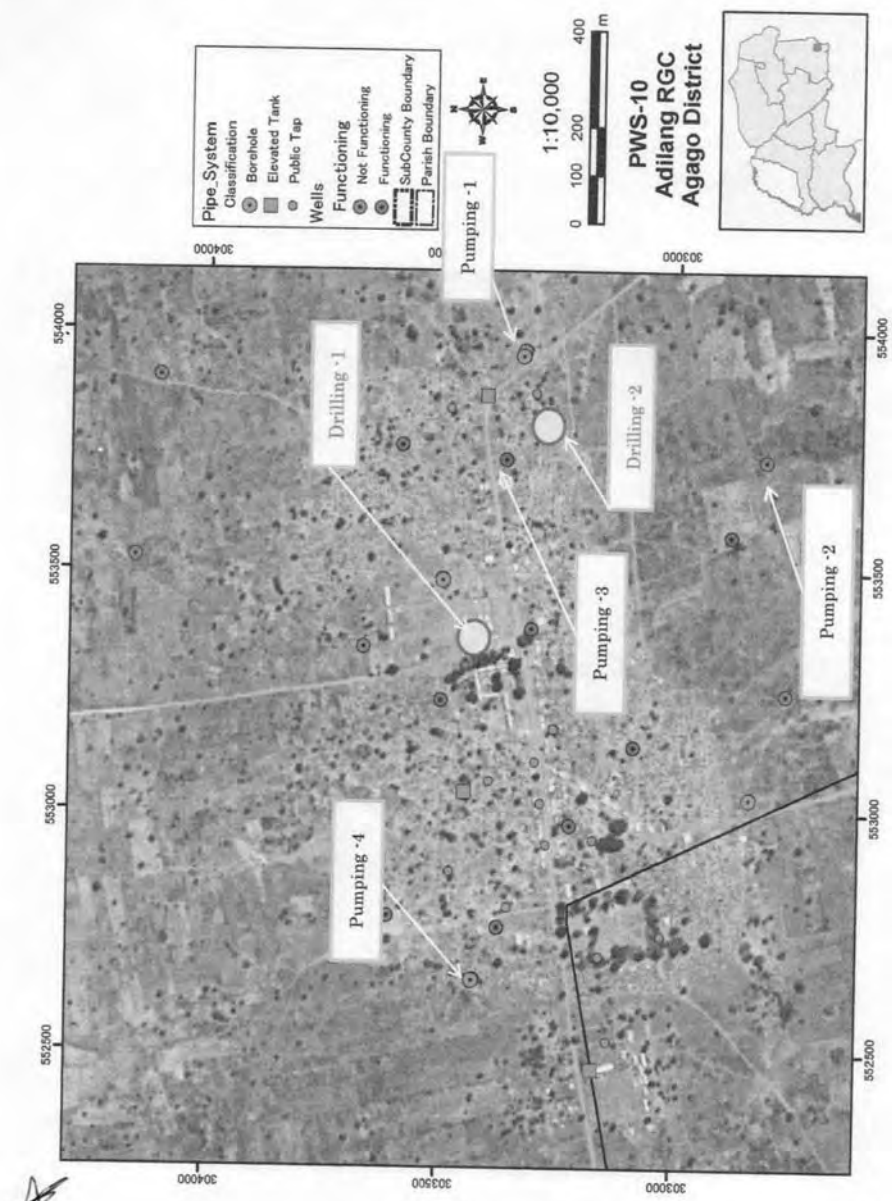
This is to grant permission for testing water at the two water points that was originally used to supply pipe water to the IDPs within the trading Centre.
One was by MEDAIR and the other by AMREF.
Thanks for cooperation to support Adilang Water Supply System projects

Yours, OKOT RAYMOND OMARA

CHAIRPERSON L.C III
ADILANG SUB-COUNTY
AGAGO DISTRICT
DATE 22/11/11 SIGN.

A7 - 20

A1 - 13



A1 - 14

Unyama

THE REPUBLIC OF UGANDA

The Project for Provision of Improved Water Source for Returned IDP in Achori Sub-Region

Land Agreement for Solar Facilities and/or Elevated Tank

I Mr. NTC UNYAMA hear by agree for use of my land measuring 30 m x 20 m for installation of water supply system to be used by community.

Name: Picho Dymello

N.T.C UNYAMA DEPUTY PRINCIPAL P.O. BOX 541, GULU Date 28-11-2011

Witnessed by:

Landowner

LC I Chairperson

Sign: Date: Sign: Date: 27/11/2011

CHAIRMAN L.C I TE-PWOYO VILLAGE PAKWELO PARISH UNYAMA S/CTY SIGN. MANSHUR A. ODOCH

Name: Name:

Next Landowner

LC II Chairperson

Sign: Date: Sign/Stamp: Date:

Other community members present:

Name: Name:

Sign: Sign:

Date: Date:

Sub County Authorities:

Name: Name: HON. IDOACH JUSTINE

Title: Sub County Chief

Title: Chairperson LC III

Sign: Sign:

Date: Date: 28th/11/2011

Stamp: SENIOR ASSISTANT SECRETARY UNYAMA SUB-COUNTY P.O. BOX 31, GULU DATE 28/11/11 SIGN.

Stamp: CHAIRPERSON L.C III P.O. BOX 31 GULU DATE 28-11-2011 SIGN. UNYAMA SUB-COUNTY

Attachment: 1. Site Sketch

2. Others (if any)

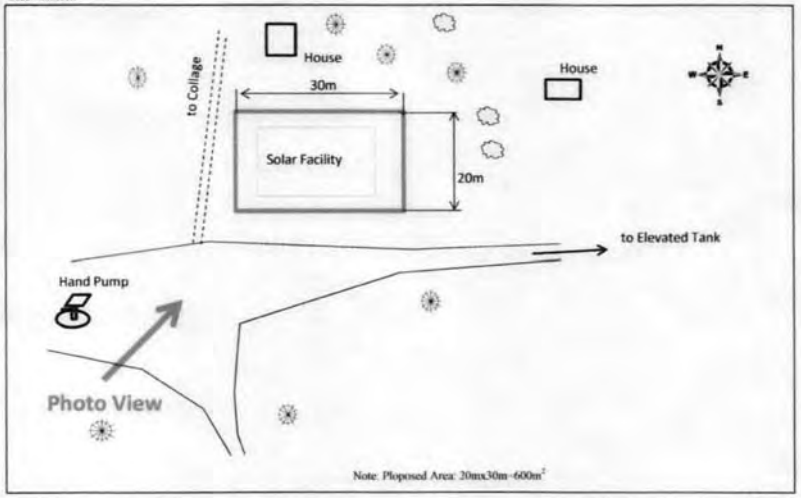
The Project for Provision of Improved Water Source for Returned IDP in Achori Sub-Region

Form of Ploposed Land Uses - 1/2

Date:

Name of RGC:	Unyama	
District:	Gulu	
Ploposed Land:	Solar facility	600.0 m² (20.0 m x 30.0 m)
Ploposed Land:	Elevated Tank	400.0 m² (20.0 m x 20.0 m)
Comment:		

Site Sketch:



Proposed Land

Confirmed by:

Consultant:

LC .....:

Name: HATASABURO TSUKIDA

Position: JICA Survey Team

Signature:

CHAIRMAN L.C I TE-PWOYO VILLAGE PAKWELO PARISH UNYAMA S/CTY SIGN.

Name: MANSHUR A. ODOCH

Position: L.C I CHAIRMAN

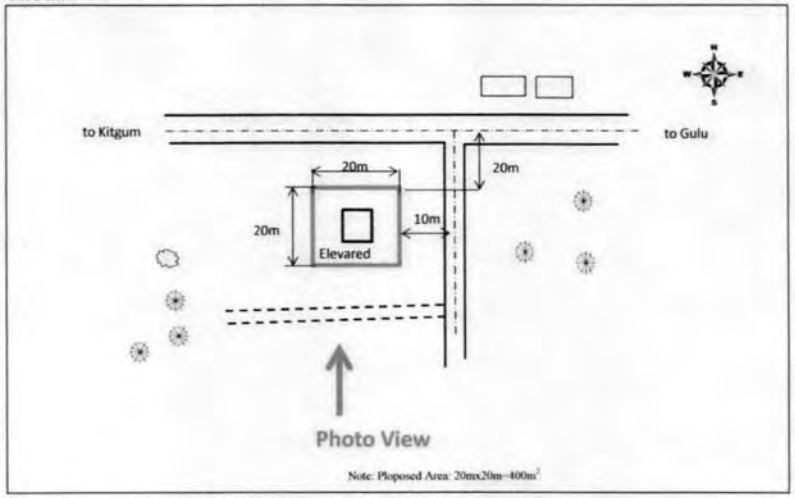
Signature:

Form of Ploposed Land Uses - 2/2 Date:

Name of RGC:	Unyama	
District:	Gulu	
Ploposed Land	Solar facility	600.0 m² (20.0 m x 30.0 m)
Ploposed Land	Elevated Tank	400.0 m² (20.0 m x 20.0 m)

Comment:

Site Sketch:



Proposed Land

CHAIRMAN L.C I
TE-PWOYO VILLAGE
PAKWELO PARISH
UNYAMA S/CTY
DATE ..... SIGN.....

Confirmed by:

Consultant:

Name:	MATASHIRO TSUKUDA	LC ..... : Name:	MANGHIRA ODOCH
Position:	JICA Survey Team	Position:	LC1 CHAIRMAN
Signature:		Signature:	

Award

THE REPUBLIC OF UGANDA

The Project for Provision of Improved Water Source for Returned IDP in Achori Sub-Region

Land Agreement for Solar Facilities and/or Elevated Tank

I Mr. OBITA BAGAMS hear by agree for use of my land measuring 12 m x 20 m for installation of water supply system to be used by community.

Name: OBITA BAGAMS	Witnessed by: Okello Ceaser
Landowner	LC I Chairperson
Sign: ..... Date: 21/11/2011	Sign: ..... Date: 21/11/2011
Name: Rackara Michael	Name:
Next Landowner	LC II Chairperson
Sign: RA Date: 21/11/11	Sign/Stamp: Date:
Other community members present: Name: OTUKENE KENNETH.	Name: OKOT RANAT
Sign: Kenneth	Sign:
Date: 21-11-2011	Date: 21-11-2011
Sub County Authorities: Name: Ojwee Thomas Rock.	Name: OCAYA BOSCO ADEE
Title: Sub County Chief	Title: Chairperson LC III
Sign:	Sign:
Date: 21.11.2011	Date: 21.11.11
Stamp: THE SUB-COUNTY CHIEF 21 NOV 2011 SIGN	Stamp: CHAIRMAN L.C.III Odek Sub-County Council Date: 21/11/11 Sign:

Attachment: 1. Site Sketch
2. Others (if any)

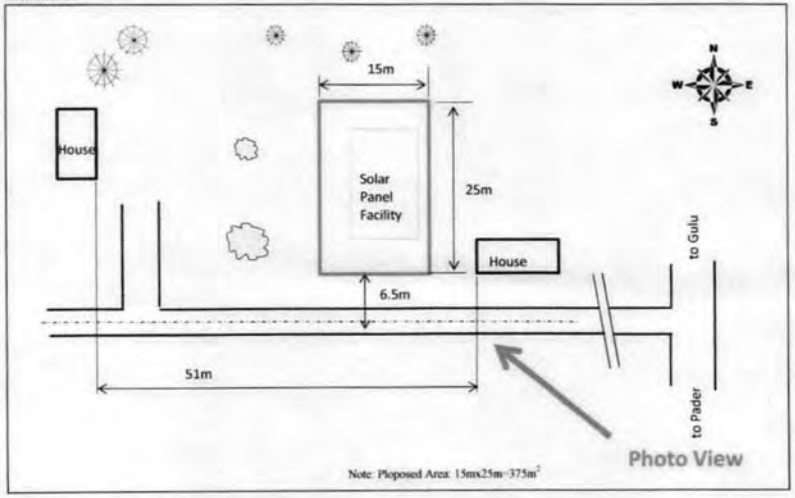
The Project for Provision of Improved Water Source for Returned IDP in Achori Sub-Region

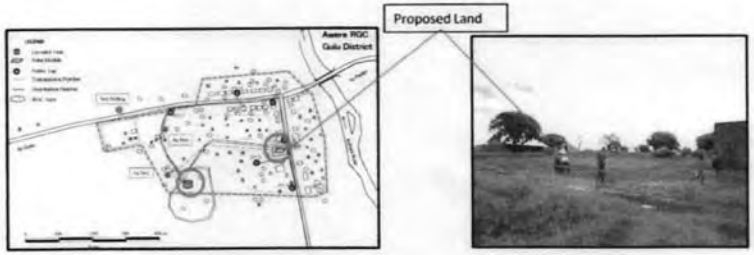
Form of Ploposed Land Uses- 1/2 Date:

Name of RGC:	Awere	
District:	Gulu	
Ploposed Land	Solar facility	375.0 m² (15.0 m x 25.0 m)
Ploposed Land	Elevated Tank	400.0 m² (20.0 m x 20.0 m)

Comment:

Site Sketch:





Confirmed by:

Consultant:		LC .....:	
Name:	HATSABURO TSUKUDA	Name:	OCAYA Bosco Adebe
Position:	JICA Survey Team.	Position:	CHAIRMAN LC III
Signature:	H. Tsukuda	Signature:	

CHAIRMAN L.C.III
Odek Sub-County Council
Date: 21.11.14
Sign:

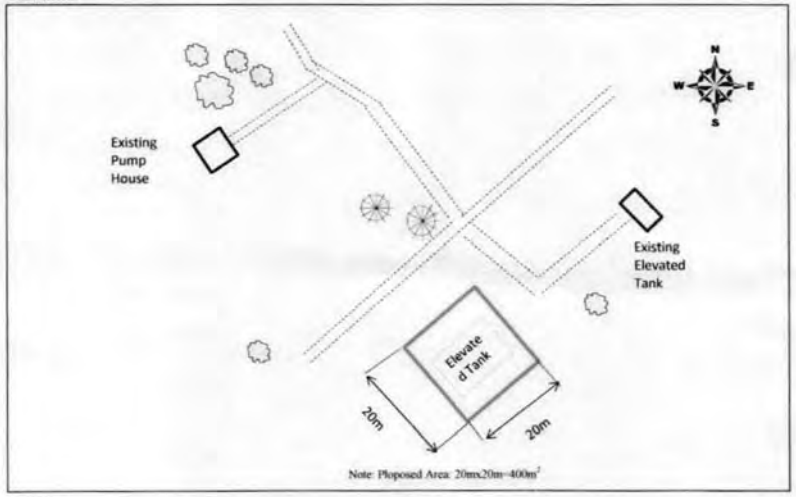
The Project for Provision of Improved Water Source for Returned IDP in Achori Sub-Region

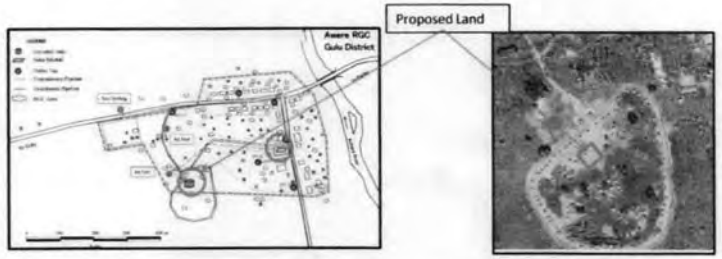
Form of Ploposed Land Uses- 2/2 Date:

Name of RGC:	Awere	
District:	Gulu	
Ploposed Land	Solar facility	375.0 m² (15.0 m x 25.0 m)
Ploposed Land	Elevated Tank	375.0 m² (20.0 m x 20.0 m)

Comment:

Site Sketch:





Confirmed by:

Consultant:		LC .....:	
Name:	HATSABURO TSUKUDA	Name:	OCAYA Bosco Adebe
Position:	JICA Survey Team.	Position:	CHAIRMAN LC III
Signature:	H. Tsukuda	Signature:	

CHAIRMAN L.C.III
Odek Sub-County Council
Date: 21.11.14
Sign:

Coner Kilak

THE REPUBLIC OF UGANDA

The Project for Provision of Improved Water Source for Returned IDP in Achori Sub-Region

Land Agreement for Solar Facilities and/or Elevated Tank

I Mr. Ojok Mathys hear by agree for use of my land measuring 25 m x 25 m for installation of water supply system to be used by community.

CHAIRPERSON LCI KILAK CENTRAL (B) KILAK PARISH - PADER TEL 17/11/2011

Name: Ojok Mathys	Witnessed by:
Landowner	LC I Chairperson SECONDINA LABEJA Amy
Sign:	Date: 17-11-2011 Sign: Date: 17-11-011
Name: Ojok Mathys	Name: Okwera John Lumede
Next Landowner	LC II Chairperson
Sign:	Date: 17/11-01 Sign/Stamp: Date: 17/11/2011

Other community members present:

Name: Okello Reagan	Name: Okwera John Longfon
Sign:	Sign:
Date: 17/11/2011	Date: 17-11-2011

Sub County Authorities:

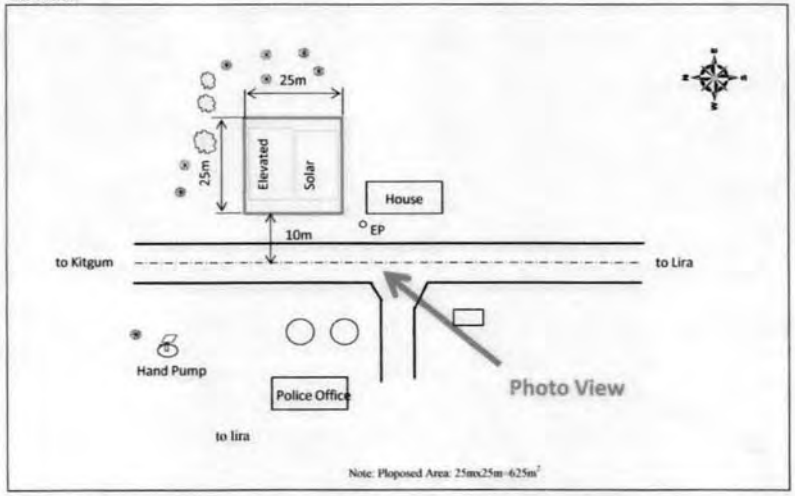
Name: ONGER GANDINO	Name: OWEKA ROBERT
Title: Sub County Chief	Title: Chairperson LC III
Sign:	Sign:
Date:	Date: 17/11/2011
Stamp: SUB-COUNTY CHIEF PADER SUB COUNTY PADER DATE 17/11/2011	Stamp: OFFICE OF C/M LCIII PADER SUB COUNTY, PADER DIST. 17 NOV 2011 P.O.BOX PADER Sign:

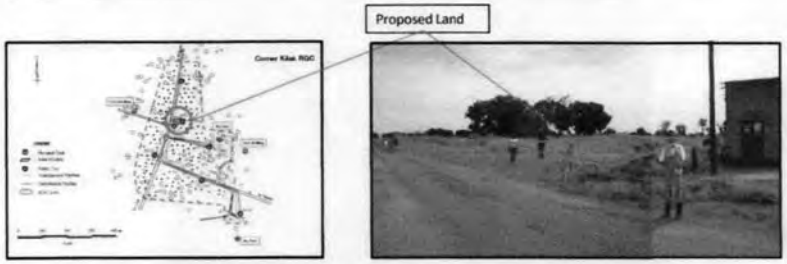
Attachment: 1. Site Sketch
2. Others (if any)

Form of Ploposed Land Uses Date:

Name of RGC:	Coner Kilak	
District:	Pader	
Ploposed Land	625.0 m^2	(25.0 m x 25.0 m)
Comment:		

Site Sketch:





Confirmed by:
Consultant:

		LC III:
MAYASABURO TSUKUDA JICA Survey Team	Name: ONGER GANDINO	Name: OWEKA ROBERT
	Position:	Position:
	Signature: SUB-COUNTY CHIEF PADER SUB COUNTY PADER DATE 17/11/2011	Signature: OFFICE OF C/M LCIII PADER SUB COUNTY, PADER DIST. 17 NOV 2011 P.O.BOX Sign:

Adilang

THE REPUBLIC OF UGANDA

The Project for Provision of Improved Water Source for Returned IDP in Achori Sub-Region

Land Agreement for Solar Facilities and/or Elevated Tank

I Mr. ADILANG SS hear by agree for use of my land measuring -------- m x -------- m for installation of water supply system to be used by community.

Name: ADILANG SS

Landowner

Sign: ..... Date: 17/11/2011

Name: ADILANG SS

Next Landowner

Sign: ..... Date: .....

Witnessed by: .....

LC I Chairperson

Sign: ..... Date: .....

Name: .....

LC II Chairperson

Sign/Stamp: ..... Date: .....

Other community members present:

Name: O.KIDI-ODONG J.B

Sign: .....

Date: 17/11/2011

Name: OPIO FRANCIS K.K

Sign: .....

Date: 17/11/2011

Sub County Authorities:

Name: OJARA Come

Title: Sub County Chief

Sign: Come

Date: 17/11/2011

Stamp: FOR SUB-COUNTY CHIEF ADILANG SUB-COUNTY AGAGO DISTRICT

Name: OKOT RAYMOND OMARA

Title: Chairperson LC III

Sign: .....

Date: 17/11/11

Stamp: CHAIRPERSON L.C III ADILANG SUB-COUNTY AGAGO DISTRICT DATE 17/11/11 SIGN.

Attachment: 1. Site Sketch
2. Others (if any)

The Project for Provision of Improved Water Source for Returned IDP in Achori Sub-Region

Form of Ploposed Land Uses

Date: .....

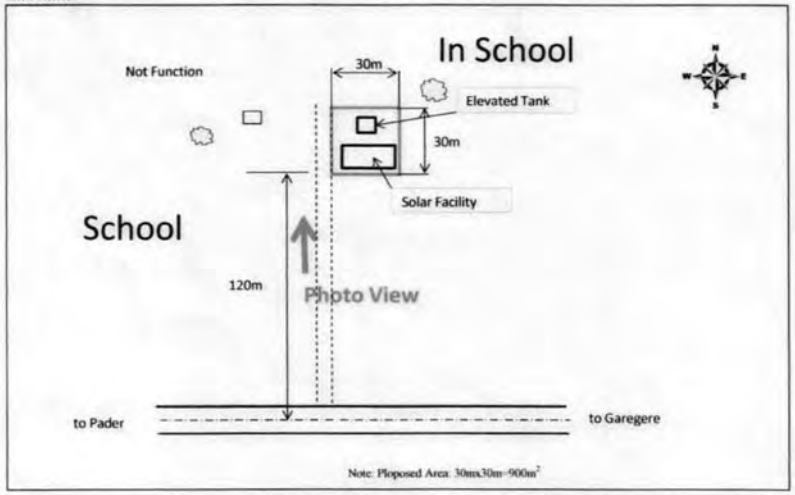
Name of RGC: Adilang

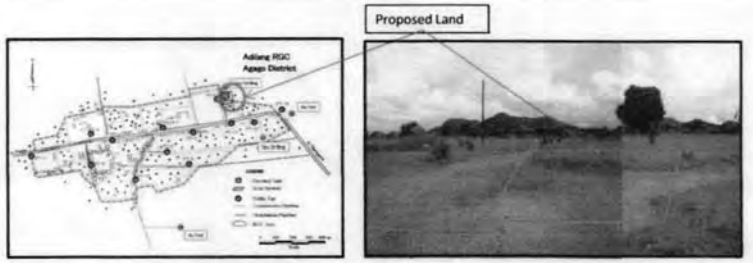
District: Agago

Ploposed Land 900.0 m² (30.0 m x 30.0 m)

Comment: .....

Site Sketch:





Confirmed by:

Consultant: LC .....

Name: MATAGABURO TSUKUDA

Position: JICA Survey Team.

Signature:

Name: OKOT RAYMOND OMARA

Position: RC III C/P

Signature:

CHAIRPERSON L.C III ADILANG SUB-COUNTY AGAGO DISTRICT DATE 17/11/11 SIGN.

Kitgum Matid

THE REPUBLIC OF UGANDA

The Project for Provision of Improved Water Source for Returned IDP in Achori Sub-Region

Land Agreement for Solar Facilities and/or Elevated Tank

I Mr. OKEMOKOMA MATHEW hear by agree for use of my land measuring -------- m x --------- m for installation of water supply system to be used by community.

Name: OKEMOKOMA MATHEW
Landowner

Sign.....Date. 18/11/2011

Name:.....

Next Landowner

Sign:.....Date.....

Witnessed by.....

LC I Chairperson

Sign:.....Date.....

Name.....

LC II Chairperson

Sign/Stamp.....Date.....

SUB-COUNTY CHIEF 18 NOV 2011 KITGUM MATIDI SUB-COUNTY KITGUM DISTRICT LOCAL GOV'T.

Other community members present:

Name:.....
Sign:.....
Date.....

Name:.....
Sign:.....
Date.....

Sub County Authorities:

Name: OKEMOKOMA MATHEW
Title: Sub County Chief
Sign:.....
Date 18/11/2011
Stamp:

Name: PIDO OPOKA GERSHON
Title: Chairperson LC III
Sign:.....
Date 18-11-2011
Stamp:

SUB-COUNTY CHIEF 18 NOV 2011 KITGUM MATIDI SUB-COUNTY KITGUM DISTRICT LOCAL GOV'T.

CHAIRPERSON LC III 18 NOV 2011 KITGUM MATIDI SUB-COUNTY KITGUM DISTRICT LOCAL GOV'T.

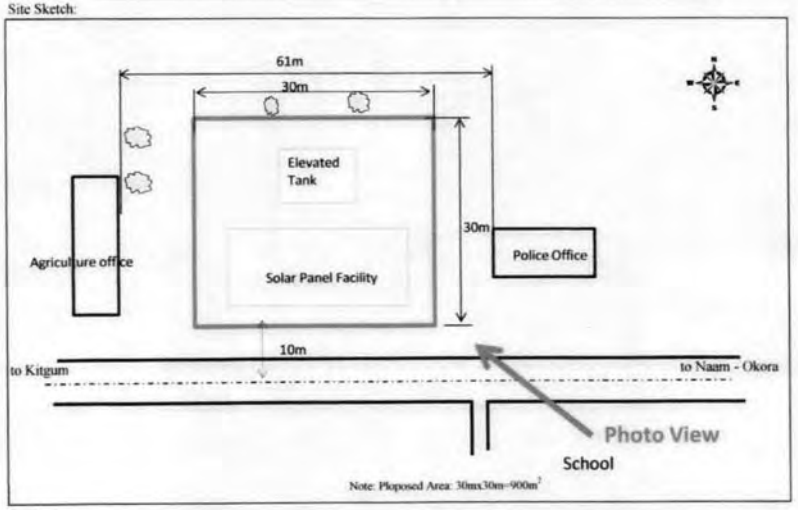
Attachment: 1. Site Sketch
2. Others (if any)

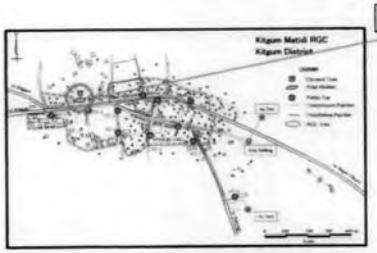
Form of Ploposed Land Uses

Date:

Name of RGC: Kitgumu Matidi
District: Kitgum
Ploposed Land 900.0 m^2 (30m x 30m)
Comment:

Site Sketch:





Proposed Land

Confirmed by:
Consultant:

Name: MATHABERO TSUHUDA
Position: JICA Survey Team
Signature:

LC III:

Name: PIDO OPOKA GERSHON
Position: SUBCOUNTY CHAIRPERSON
Signature:

CHAIRPERSON LC III 18 NOV 2011 KITGUM MATIDI SUB-COUNTY KITGUM DISTRICT LOCAL GOV'T.

Koch Goma Alternative

THE REPUBLIC OF UGANDA

The Project for Provision of Improved Water Source for Returned IDP in Achori Sub-Region

Land Agreement for Solar Facilities and/or Elevated Tank

I Mr. ---------- hear by agree for use of my land measuring -------- m x -------- m for installation of water supply system to be used by community.

Name: Okello Peter Epello

Landowner

Sign: ..... Date: 30/11/11

Name: .....

Next Landowner

Sign: ..... Date: .....

Witnessed by: C/MAN LCI KALA'AZ'

LC I Chairperson KILAMA CHARLES

CHAIRMAN LC I KAL'AZ'
KOCH GOMA SUB-COUNTY
NWOYA COUNTY

Sign: ..... Date: 30/11/2011

Name: LUMA John

LC II Chairperson

Sign/Stamp: ..... Date: 30/11/2011

Other community members present:

Name: .....

Sign: .....

Date: .....

Name: .....

Sign: .....

Date: .....

Sub County Authorities:

Name: Okello Peter Epello

Title: Sub County Chief

Sign: .....

Date: 30/11/2011

Stamp:

Name: OKALIM PETER LACAKA

Title: Chairperson LC III

Sign: .....

Date: 30. NOV. 2011

Stamp: FOR

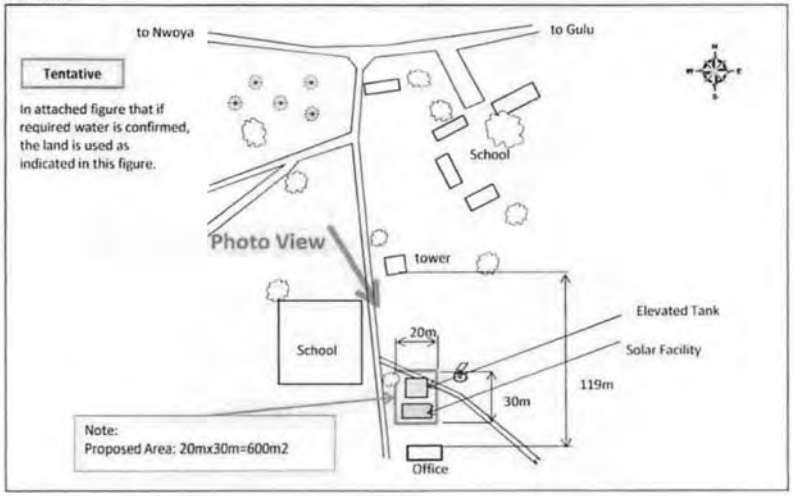
Attachment: 1. Site Sketch
2. Others (if any)

Form of Proposed Land Uses

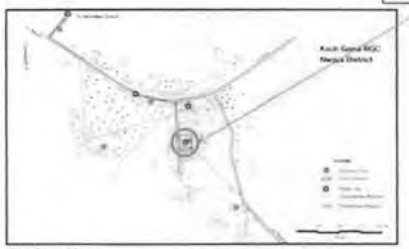
Date: 30 Nov 2011

Name of RGC:	Koch Goma	
District:	Nwoya	
Proposed Land	600.0 m^2	(20.0 m x 30.0 m)
Comment:		

Site Sketch:



Proposed Land



Confirmed by:

Consultant

Name: Makarabulo Tokuda

Position: JICA Survey Team

Signature:

LC .....

Name: Okello Peter Epello

Position: S/C Chief

Signature:

Annex 2 Statements of Stakeholder Meetings

The Project for Provision of Improved Water Source for Returned IDP
in
Acholi Sub-region in the Republic of Uganda

Statement of Agreement
On
Draft Plan of the Piped Water Supply System

The Directorate of Water Development (hereinafter referred to as "DWD") of the Ministry of Water and Environment (hereinafter referred to as "MoWE"), held the stakeholder meeting on November 17, 2011 with representatives of the District Local Governments of Pader from LCV including CAO to LCI, and the participants have confirmed the items described in the attached sheets

Pader, November 17th, 2011

DWD Authorities and the Team Representatives :

Name: MUGECA R.G.KATO

Title: DWD Representative

Sign:

District Authorities:

Name: AKENA ALFRED

Title: LCV Representative

Sign:

Name: OCENG DAVID

Title: District Water Office Representative

Sign:

Sub County Authorities:

Name: DUEKA ROBERT

Title: LCIII Representative

Sign:

Name: EVALINE OKIA

Title: LCI Representative

Sign:

Name: OKELLO SAMUEL

Title: LCI Representative

Sign:

Name:

Title: LCI Representative

Sign:

Name: ORYEMA EVARISTO

Title: CAO Representative

Name: ONGEE GALDINO

Title: Sub county chief

Sign:

Name: SECONDINA LAKIEM

Title: LCI Representative

Sign:

Name: ANYEKO DORINE

Title: LCI Representative

Sign:

Name:

Title:

Sign:

ATTACHMENT

1. Draft Plan of the Piped Water Supply System

DWD explained on the draft plan of the piped water supply system which will be constructed in the RGC, all participants agreed on the following;

1) Location of new boreholes, elevatied tank, transmittion pipe, and distribuition facilities.
2) Some existing boreholes which will be rehabilitated and used as water source of the new water supply system.

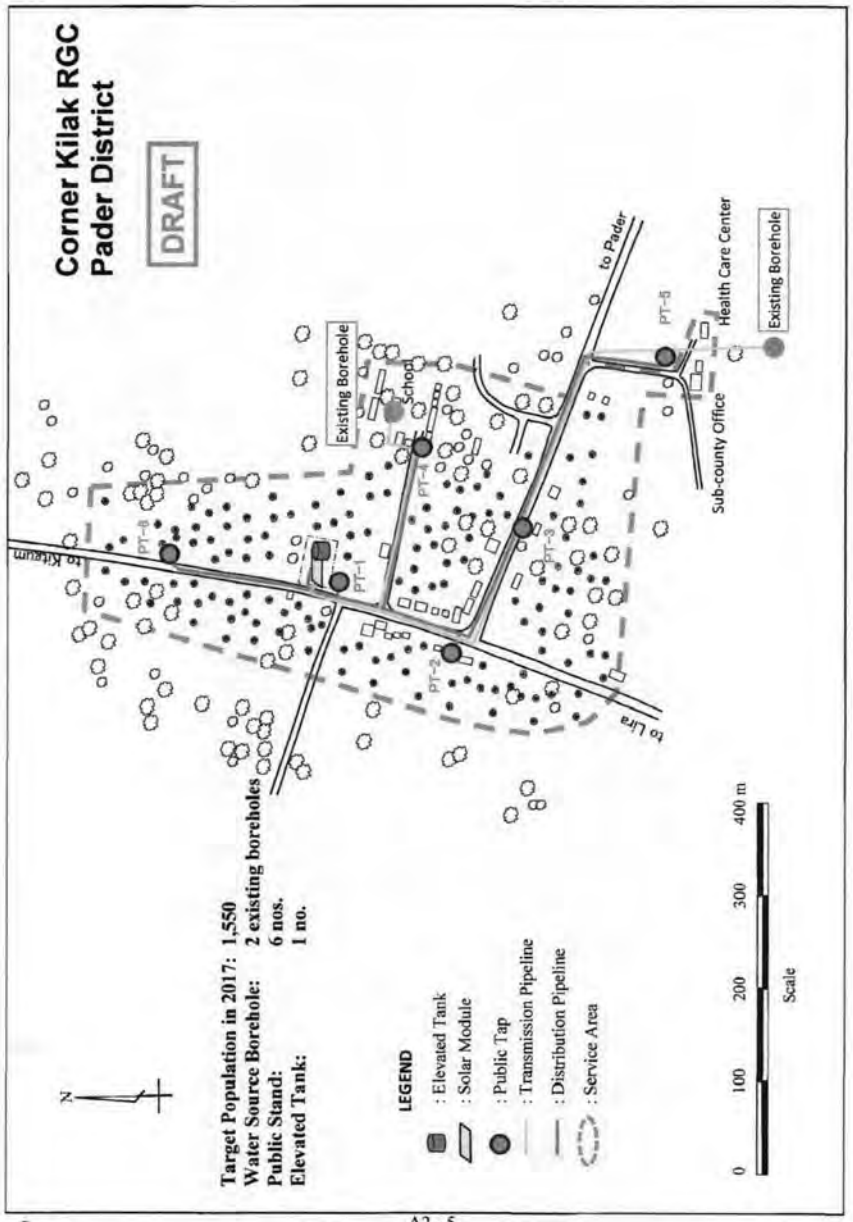
2. Negative Impacts of the Project and the Mitigation Measure

DWD explained the possible negative impacts of the project and its mitigation measures, all participants understand the issues.

3. Request from participants

Extension of a distribution pipe to the Technical Institute under construction is requested.

The adaptation of the request will be conridered after pumping test of existing boreholes.



A2 - 5

A7 - 30

Negative Environmental Impacts and the Mitigation Measures

1) Environmental Impacts associated with the Project Siting

Category	Environmental Item	Negative Impacts	Mitigation Measures
Social Environment	Land tenure	Land takes for the construction which reduces the coverage of cultivable land or grass land.	An agreement for the proposed lad must be signed by the land owner and responding District Local Government before any construction takes place to show that the owner of the land gage it to the community willingly.

2) Environmental Impacts associated with the Construction Phase of the Project

Category	Environmental Item	Negative Impacts	Mitigation Measures
Pollution Control	Noise and Vibration	Noise during Construction	• Declaration of operation schedule • Cautious operation and speed control of construction machinery not to exceed the allowable noise limits.
	Wastes	Waste generation ranging from solid and liquid.	• Contractor should clear any waste generated during construction and damp them at a proper disposal place. • Care must be taken in the handling and storage of all liquids to avoid any environmental degradation.
Natural Environment	Ecosystem	Vegetation Clearance	Clearance of vegetation should only be limited to the agreed construction area.
Social Environment	Health Condition	Prevalence of HIV/AIDS	Socially the workers may develop relationship with the female community members. Contractor is advised to monitor his workers and educate on the dangers of HIV/AIDS

3) Environmental Impacts associated with Operation and Maintenance Phase of the Project

Category	Environmental Item	Negative Impacts	Mitigation Measures
Pollution Control	Wastes	Water stagnation that leads to mosquitoes breeding.	• Soak pits with enough infiltration ability should be designed and installed to prevent accumulation of stagnant water. • The soak pits should be maintained through daily cleaning activities by the Water and Sanitation Committee / the Water Service Board.
Natural Environment	Hydrology	Reduction of groundwater table	Conservation of groundwater should be achieved by keeping discharge volume under safety yields of each borehole.

A2 - 6

The Project for Provision of Improved Water Source for Returned IDP
in
Acholi Sub-region in the Republic of Uganda

Statement of Agreement
On
Draft Plan of the Piped Water Supply System

The Directorate of Water Development (hereinafter referred to as "DWD") of the Ministry of Water and Environment (hereinafter referred to as "MoWE"), held the stakeholder meeting on November 18, 2011 with representatives of the District Local Governments of Agago from LCV including CAO to LCI, and the participants have confirmed the items described in the attached sheets

Agago, November 18th, 2011

A7 - 31

DWD Authorities and the Team Representatives :

Name MUGERA R-B-KAN Name MWIGALA RITAH

Title: DWD Representative

Sign Sign

District Authorities:

Name OKOT Emmanuel Name Turuka Charles

Title: LCV Representative Title: CAO Representative

Sign

Name OLYEL RAYMOND

Title: District Water Office Representative

DISTRICT WATER OFFICER 18 NOV 2011 AGAGO DISTRICT

Sign

Sub County Authorities:

Name OKOT RAYMOND OMARA Name LAKOI VICKY

Title: LCIII Representative Title: Sub county chief

CHAIRPERSON L-C III ADILANG SUB-COUNTY AGAGO DISTRICT DATE 18/11/11 SIGN.

THE SUB-COUNTY CHIEF ADILANG SUB-COUNTY AGAGO DISTRICT

Sign

Name: APORO HELLEN Name ABURA ROSE

Title: LCI Representative Title: LCI Representative

Sign Sign

Name: OPOKA AMBROSE Name OKIBI SAMMY

Title: LCI Representative Title: LCI Representative

Sign Sign

Name: APIO ROSE Name

Title: LCI Representative Title:

Sign Sign

ATTACHMENT

1. Draft Plan of the Piped Water Supply System

DWD explained on the draft plan of the piped water supply system which will be constructed in the RGC, all participants agreed on the following;

1) Location of new boreholes, elevatied tank, transmittion pipe, and distribuition facilities.
2) Some existing boreholes which will be rehabilitated and used as water source of the new water supply system.

2. Negative Impacts of the Project and the Mitigation Measure

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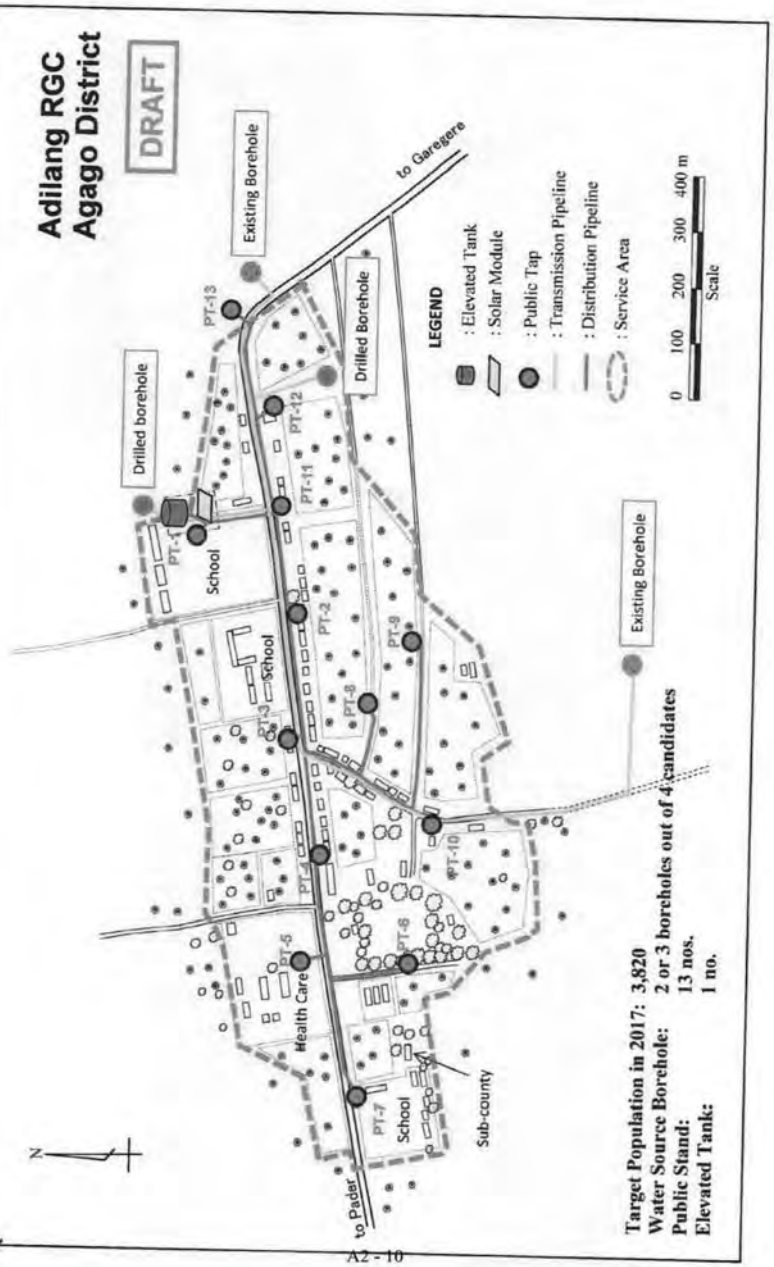


1) Environmental Impacts associated with the Project Siting

Category	Environmental Item	Negative Impacts	Mitigation Measures
Social Environment	Land tenure	Land takes for the construction which reduces the coverage of cultivable land or grass land.	An agreement for the proposed lad must be signed by the land owner and responding District Local Government before any construction takes place to show that the owner of the land gage it to the community willingly.

2) Environmental Impacts associated with the Construction Phase of the Project

Category	Environmental Item	Negative Impacts	Mitigation Measures
Pollution Control	Noise and Vibration	Noise during Construction	• Declaration of operation schedule • Cautious operation and speed control of construction machinery not to exceed the allowable noise limits.
	Wastes	Waste generation ranging from solid and liquid.	• Contractor should clear any waste generated during construction and damp them at a proper disposal place. • Care must be taken in the handling and storage of all liquids to avoid any environmental degradation.
Natural Environment	Ecosystem	Vegetation Clearance	Clearance of vegetation should only be limited to the agreed construction area.
Social Environment	Health Condition	Prevalence of HIV/AIDS	Socially the workers may develop relationship with the female community members. Contractor is advised to monitor his workers and educate on the dangers of HIV/AIDS

3) Environmental Impacts associated with Operation and Maintenance Phase of the Project

Category	Environmental Item	Negative Impacts	Mitigation Measures
Pollution Control	Wastes	Water stagnation that leads to mosquitoes breeding.	• Soak pits with enough infiltration ability should be designed and installed to prevent accumulation of stagnant water. • The soak pits should be maintained through daily cleaning activities by the Water and Sanitation Committee / the Water Service Board.
Natural Environment	Hydrology	Reduction of groundwater table	Conservation of groundwater should be achieved by keeping discharge volume under safety yields of each borehole.

The Project for Provision of Improved Water Source for Returned IDP
in
Acholi Sub-region in the Republic of Uganda

Statement of Agreement
On
Draft Plan of the Piped Water Supply System

The Directorate of Water Development (hereinafter referred to as "DWD") of the Ministry of Water and Environment (hereinafter referred to as "MoWE"), held the stakeholder meeting on November 22, 2011 with representatives of the District Local Governments of Kitgum from LCV including CAO to LCI, and the participants have confirmed the items described in the attached sheets

Kitgum, November 22nd, 2011

Additional Request
The Participants requested to extend distribution pipe to Kitgum Matidi Seed Secondary school and Layamo Primary school.
The extension will be considered from the technical point of view and borehole yields.

DWD Authorities and the Team Representatives :

Name. BISOBORWA OTAL

Title: DWD Representative

Sign.....

Name.....

Sign.....

District Authorities:

Name. AIKEN EMMANUEL

Title: LCV Representative

Sign.....

Name. ORYEMA CHARLES

Title: District Water Office Representative

Sign.....

Name.....

Title: CAO Representative

Sign.....

Sub County Authorities:

Name. PIDO DPOKA GORRETTI III

Title: LCIII Representative

Sign.....

Name:.....

Title: LCI Representative

Sign.....

Name: ONEGAKU D. ANDREW

Title: LCI Representative

Sign.....

Name:.....

Title: LCI Representative

Sign.....

Name. Okema Uama Matthew

Title: Sub county chief

Sign.....

Name.....

Title: LCI Representative

Sign.....

Name.....

Title: LCI Representative

Sign.....

Name.....

Title:

Sign.....

ATTACHMENT

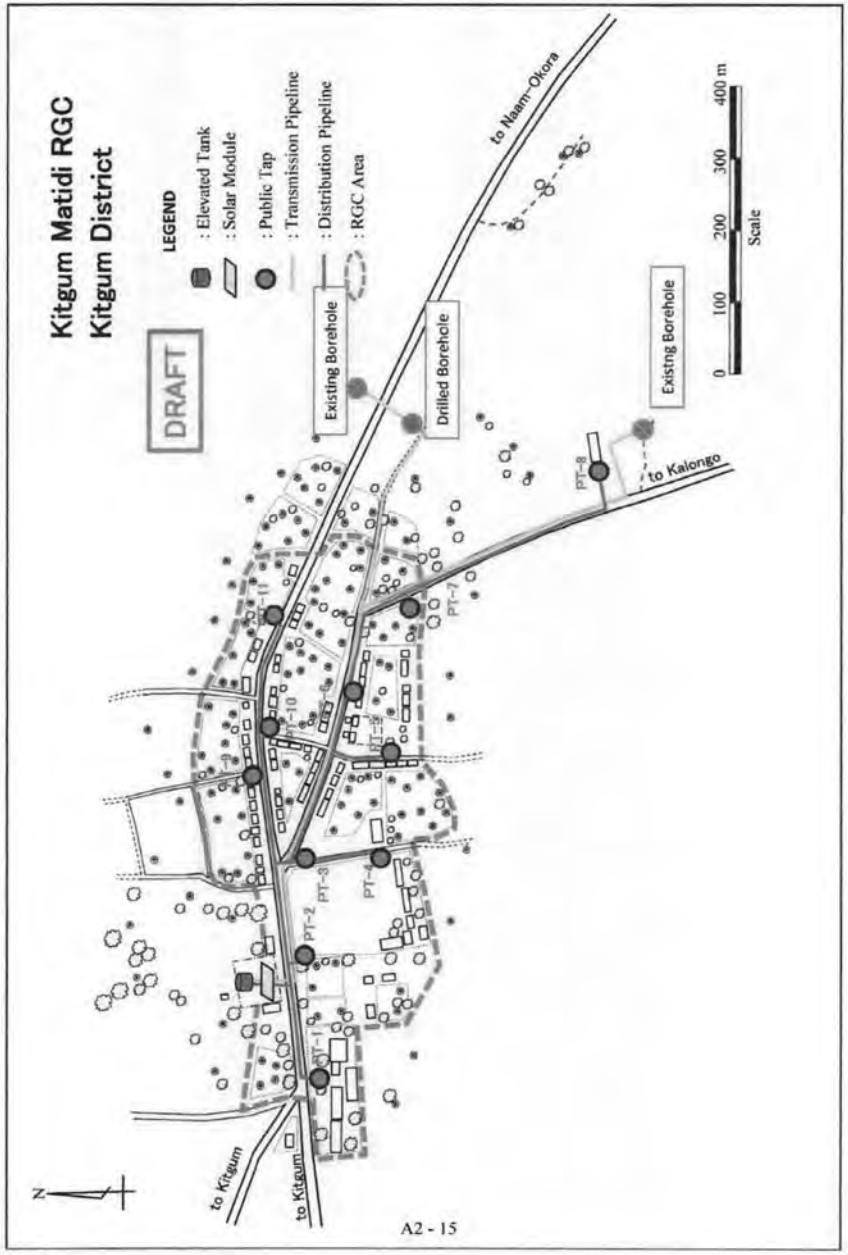
1. Draft Plan of the Piped Water Supply System

DWD explained on the draft plan of the piped water supply system which will be constructed in the RGC, all participants agreed on the following;

1) Location of new boreholes, elevated tank, transmittion pipe, and distribuition facilities.
2) Some existing boreholes which will be rehabilitated and used as water source of the new water supply system.

2. Negative Impacts of the Project and the Mitigation Measure

DWD explained the possible negative impacts of the project and its mitigation measures, all participants understand the issues.



A2 - 15

1) Environmental Impacts associated with the Project Siting

Category	Environmental Item	Negative Impacts	Mitigation Measures
Social Environment	Land tenure	Land takes for the construction which reduces the coverage of cultivable land or grass land.	An agreement for the proposed lad must be signed by the land owner and responding District Local Government before any construction takes place to show that the owner of the land gave it to the community willingly.

2) Environmental Impacts associated with the Construction Phase of the Project

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Natural Environment	Hydrology	Reduction of groundwater table	Conservation of groundwater should be achieved by keeping discharge volume under safety yields of each borehole.

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The Project for Provision of Improved Water Source for Returned IDP
in
Acholi Sub-region in the Republic of Uganda

Statement of Agreement
On
Draft Plan of the Piped Water Supply System for Awere RGC

The Directorate of Water Development (hereinafter referred to as "DWD") of the Ministry of Water and Environment (hereinafter referred to as "MoWE"), held the stakeholder meeting on November 23, 2011 with representatives of the District Local Governments of Gule from LCV including CAO to LCI, and the participants have confirmed the items described in the attached sheets

Gule, November 23rd, 2011

A7 - 36

DWD Authorities and the Team Representatives :

Name MUGGAA R.B KATO
Title: DWD Representative
Sign

Name
Sign

District Authorities:

Name
Title: LCV Representative
Sign
Name: Kilomas Bosco
Title: District Water Office Representative
Sign

Name
Title: CAO Representative

Sub County Authorities:

Name OCAYA Bosco ABESA
Title: LCIII Representative
Sign
Name: ABEGA RICHARD
Title: LCI Representative
Sign
Name: M. Ahmed
Title: LCI Representative
Sign
Name: Marina Auma
Title: LCI Representative
Sign Maarina

Name OTWEE THOMAS RACK
Title: Sub county chief
Sign
Name J. Santo Ogaba
Title: LCI Representative
Sign
Name OTUKENE KENNETH
Title: LCI Representative
Sign
Name LUKICIA RICHARD
Title:
Sign

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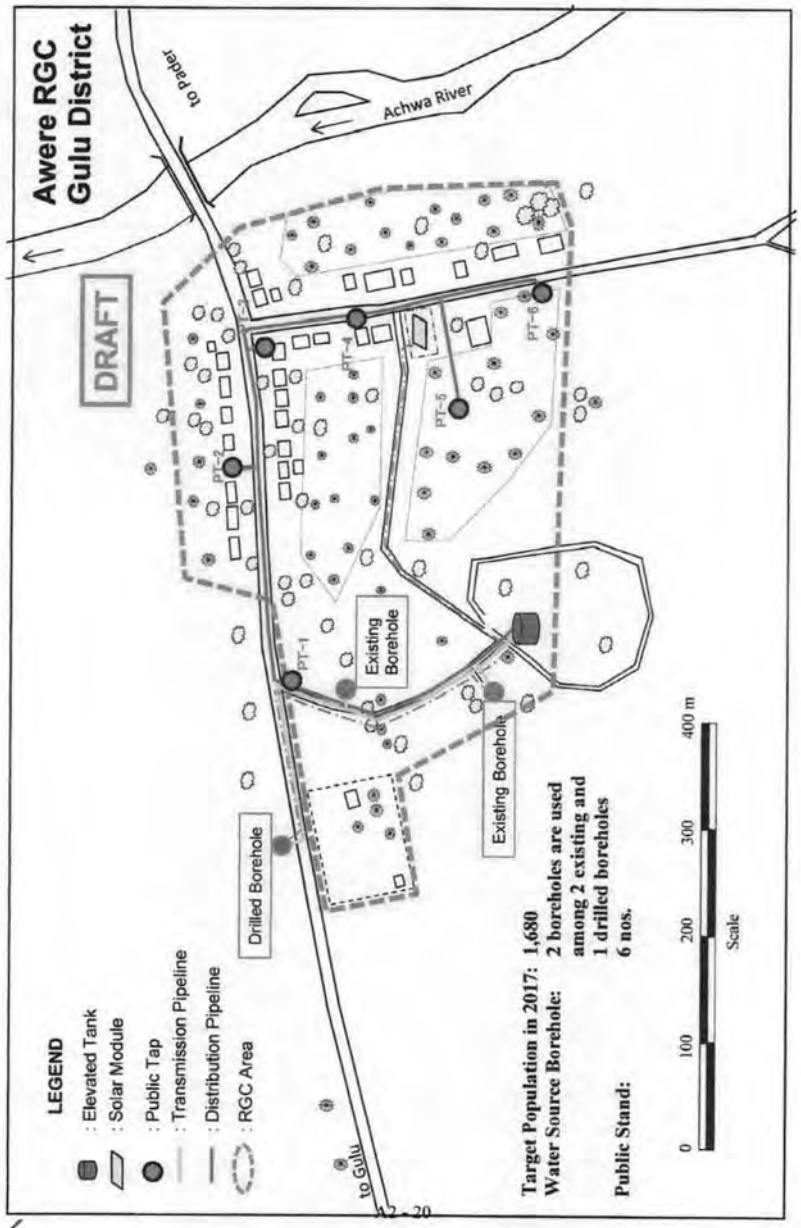

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Natural Environment	Hydrology	Reduction of groundwater table	Conservation of groundwater should be achieved by keeping discharge volume under safety yields of each borehole.

The Project for Provision of Improved Water Source for Returned IDP
in
Acholi Sub-region in the Republic of Uganda

Statement of Agreement
On
Draft Plan of the Piped Water Supply System for Unyama RGC

The Directorate of Water Development (hereinafter referred to as "DWD") of the Ministry of Water and Environment (hereinafter referred to as "MoWE"), held the stakeholder meeting on November 24, 2011 with representatives of the District Local Governments of Gule from LCV including CAO to LCI, and the participants have confirmed the items described in the attached sheets

Gule, November 24th, 2011

DWD Authorities and the Team Representatives :

Name MUGISHA R.K KATO

Title: DWD Representative

Sign.....

Name.....

Sign.....

District Authorities:

Name.....

Title: LCV Representative

Sign.....

Name: Kilama Boso

Title: District Water Office Representative

Sign.....

Name.....

Title: CAO Representative

Sub County Authorities:

Name TOOLACH JUSTINE

Title: LCIII Representative

Sign.....

Name: KUMAVECH SANTO

Title: LCI Representative

CHAIRMAN L.C II
ANGAYA PARISH
UNYAMA S/CTY
DATE 24/11/2011
SIGN.....

Sign.....

Name: OBOTE ESAYAS

Title: LCI Representative

CHAIRMAN L.C II
UNYAMA PARISH
UNYAMA S/CTY
DATE 24-11-2011
SIGN.....

Sign.....

Name:.....

Title: LCI Representative

Name ALEN FLORENCE

Title: Sub county chief

For SENIOR ASSISTANT SECRETARY
14/11/2011
UNYAMA S/CTY

Sign.....

Name OBOOT KENNEDY

Title: LCI Representative

Sign.....

Name Nyeko Andrew

Title: LCI Representative

Sign.....

Name.....

Title:

Sign.....

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1) Location of new boreholes, elevated tank, transmittion pipe, and distribuition facilities.
2) Some existing boreholes which will be rehabilitated and used as water source of the new water supply system.

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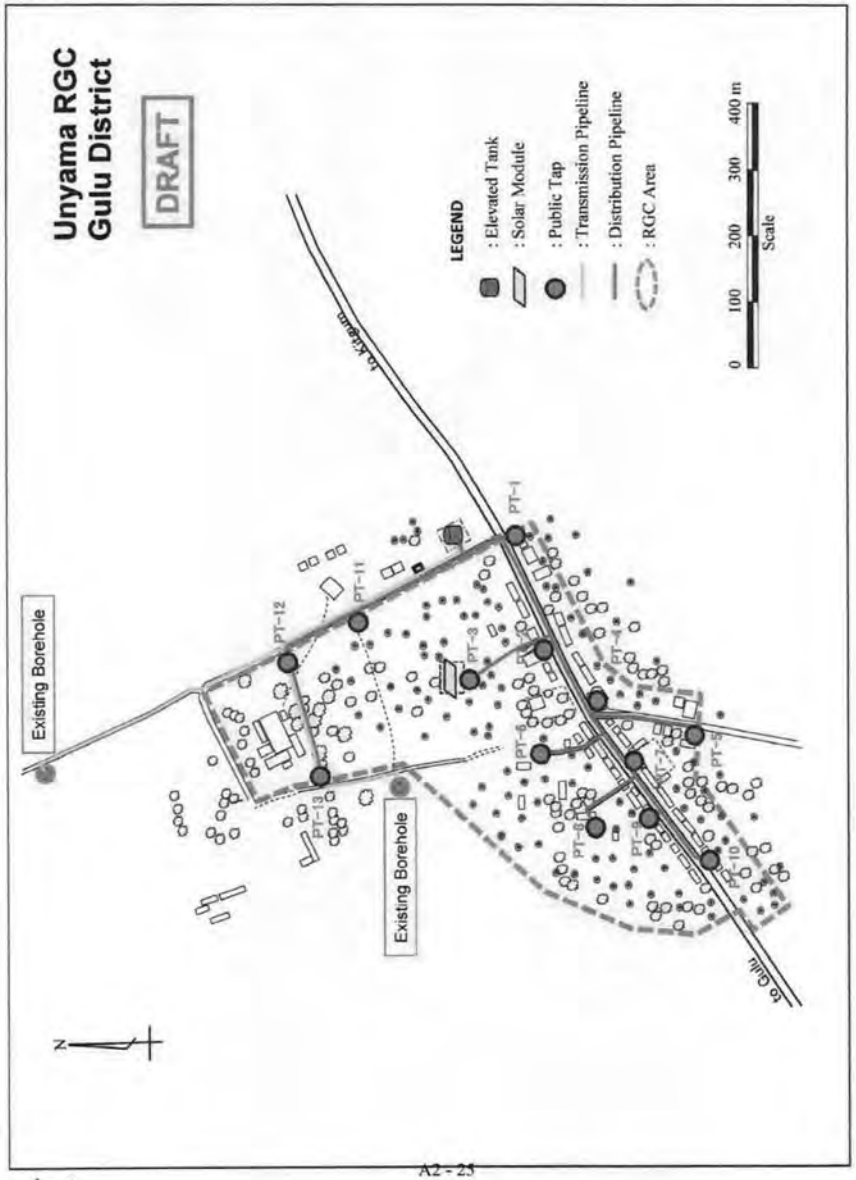

A2 - 25

A7 - 40

Negative Environmental Impacts and the Mitigation Measures

1) Environmental Impacts associated with the Project Siting

Category	Environmental Item	Negative Impacts	Mitigation Measures
Social Environment	Land tenure	Land takes for the construction which reduces the coverage of cultivable land or grass land.	An agreement for the proposed lad must be signed by the land owner and responding District Local Government before any construction takes place to show that the owner of the land gave it to the community willingly.

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Natural Environment	Hydrology	Reduction of groundwater table	Conservation of groundwater should be achieved by keeping discharge volume under safety yields of each borehole.

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Annex 3 Project Brief for EIA application

Draft

PROJECT BRIEF

for

ENVIRONMENET IMPACT ASSESSEMENT

for

THE PROJECT FOR PROVISION OF IMPROVED WATER SOURCE FOR RETURNED IDP IN ACHOLI SUB-REGION

(For 6 RGCs and 116 Villages)

December 2011

Contents of a Project Brief

1. Name, Title and Address of Developer;

Name: Directorate of Water Development under Ministry of Water and Environment

Address: P.O. Box 20026, Kampala, Uganda

2. Outline of the Project

2.1 Project Background

Close to two million people of Northern Uganda had been displaced from their homes into internal camps for about twenty years. This led to provision of emergency services to the camp communities. With relative peace beginning 2007, the people started to return to villages and as of now about almost all of the people have returned to their original villages.

The majority of the returned people have settled in areas with inadequate improved water source and sanitation facilities. The major source of water supply for returned people is surface water which is mainly rivers and streams. However, nowadays even most of these streams are experiencing drying up which forces the people to fetch for improved water source traveling over 6km every day. This will affect the families' income, as most of their time is spent on searching water and the burden on the part of women and Children are becoming extremely unbearable.

On the other hand, diseases related to consumption of unsafe water remains the second leading cause of morbidity and mortality in the districts next to Malaria. A total of 13,672 cases of diarrhea were reported among under-five children in 2009 alone. Very often the districts face an outbreak of disease related to lack of safe water. In 2008 the districts experienced epidemics of hepatitis and polio, both being water and sanitation related disease.

Therefore, the current national development plan of water, among other sector, aims at increasing access to improved water source in rural area to 77 % by 2015.

The Directorate of Water Development (DWD) of the Ministry of Water and Environment (MoWE) is going to implement a water supply project in the Acholi sub region: piped water supply systems for the rural growth centres of Koch Goma (Nwoya Dsictrict), Unyam and Awere (Gulu District), Adilang (Agago District), Kitgum Matidi (Kitgum District), Corner Kilak (Pader); boreholes with hand pump for 116 villages distributed in Amuru, Nwoya, Gulu, Agago, Lamwo, Kitgum and Pader Districts to achieve the goal above mentioned.

The project is being carried out with assistance from the Japanese Government under JICA.

2.2 Objectives of the Project

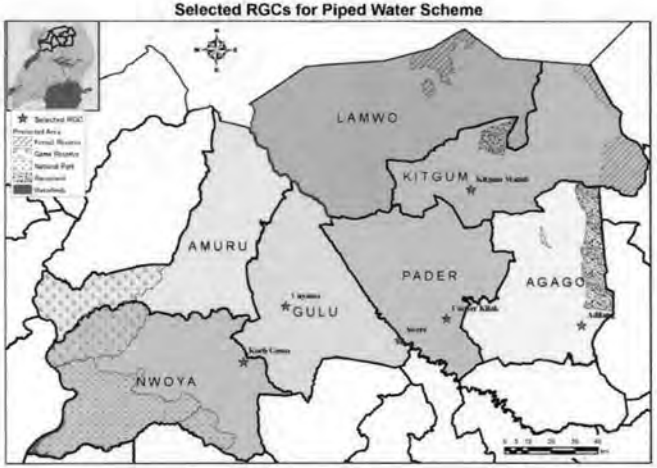
In line with the national development program of Uganda (2010 – 2014/15) the objectives of this project can be stated as follow:

- Provide safe drinking water to the people of the target RGCs and Villages and increase their access to improved water sources to 77 percent for rural area respectively by the year 2015
- Improve on the hygienic practices of the beneficiary communities
- .Prevent the spread of water related diseases
- Reduce infant mortality rates
- Improve the environment

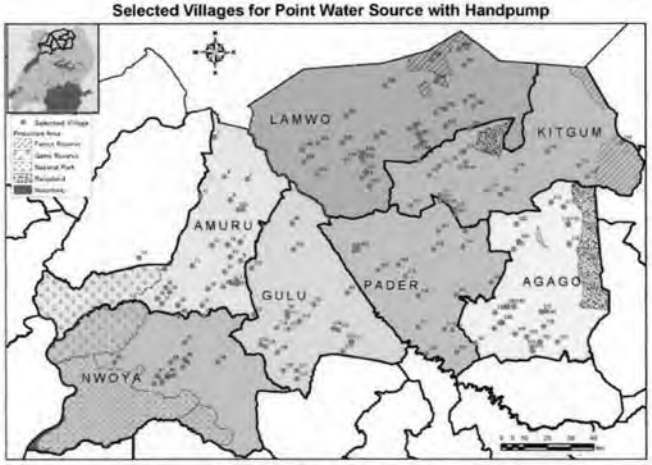
2.3 Location of the Project Sites

Locations of the project sites are described in below. Figures

Selected RGCs for Piped Water Scheme



Selected Villages for Point Water Source with Handpump



Location of the Project Sites

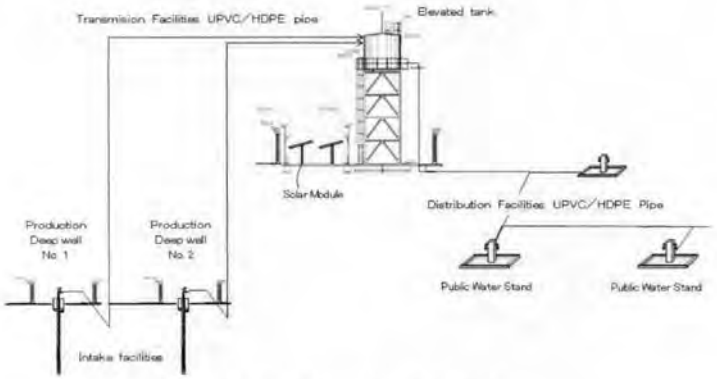
3. Project Activities

3.1 Piped Water Supply System

The project component for the piped water supply systems involves identification of water resources, abstraction facilities including electric power supply system for submersible motor pumps, transmission pipes and distribution facilities.

These will determine the water supply options, the costs (and design criteria), willingness to pay by consumers and the environmental issues to be considered.

Typical piped water supply system in the project is planed as illustrated below.



Typical Piped Water Supply System

1) Water Resources

The water resource for the project is groundwater sources. New borehole construction and/or rehabilitation works for existing boreholes will be implemented for groundwater source development.

2) Water Supply Components

a. Abstraction Facilities of Groundwater

All the new boreholes will need siting of the drilling points for new boreholes, borehole drilling works, and complete installation with pumps, switch gears, electric power supply system . Option of technology choice on electric power supply will be solar system, generator, or commercial electricity connections

Details of planed new boreholes are as follows:

Average borehole drilling depth: 80 m.
Final drilling diameter: 8 inch.
Inner diameter of casing and screen: 5 inch.
Material of the casing and screen: PVC.

b. Elevated Tank

Elevated storage tanks for distribution of groundwater are installed at higher place in the RGCs.

c. Transmission Pipes

A common transmission main from boreholes to distribution/storage tank is planned to be laid. The construction accompanies trench works.

d. Distribution Facilities

The distribution system is installed in the RGCs to connect elevated tanks and public stand taps.

3) Planed Served Population in 2017 and Service Areas

District	RGC	Served Population in 2017	Service Area (km^2)
Nwoya	Koch Goma	900	0.21
Gulu	Unyama	3,600	0.25
Gulu	Awere	1,680	0.16
Agago	Adilang	3,420	0.57
Kitgum	Kitgum Matidi	2,800	0.27
Pader	Corner Kilak	2,000	0.18
Total	--------	14,400	1.64

4) Scale of the Piped Water Supply System for Each RGC

a. Required Area for Water Supply Facilities

District	RGC	Required Area for Water Supply Facilities (m^2)					
		Borehole [1]	Elevated Tank + Solar Module	Elevated Tank	Solar module	Public Stand [2]	Total
Nwoya	Koch Goma	30	600	-	-	48	678
Gulu	Unyama	30	-	400	600	208	1,238
Gulu	Awere	30	-	400	375	96	901
Agago	Adilang	60	900	-	-	192	1,152
Kitgum	Kitgum Matidi	30	900	-	-	192	1,122
Pader	Corner Kilak	45	625	-	-	112	782
	Total	225	3,025	800	975	848	5,873

b. Required Pipe Length to be installed

District	RGC	Pipe Length (m)			Q'ty of Public Stand
		Transmission	Distribution [3]	Total	
Nwoya	Koch Goma	712	1,290	2,002	3
Gulu	Unyama	1,686	1,990	3,676	13
Gulu	Awere	368	1,110	1,478	6
Agago	Adilang	2,440	2,380	4,820	12
Kitgum	Kitgum Matidi	1,615	2,510	4,125	12
Pader	Corner Kilak	1,253	1,390	2,643	7
	Total	8,074	10,670	18,744	53

Remark: 1) Borehole: 3m x 5m, 2) Public Stand: 2m x 8m,
3) Pipe length of distribution includes length of service pipes for connection of public taps

3.2 Motorized Point Water Supply System

In case of small yield is given by boreholes in relevant RGCs, motorized point water supply system will be one of the project component. This system consisted of identification of water resource, installation of motorized pump with solar power supply facility, elevated tank and public stand tap.

1) Water Resources

The water resource for the project is groundwater sources. New borehole construction works and/or rehabilitation of existing boreholes will be implemented for groundwater source development.

2) Water Supply Components

a. Abstraction Facilities of Groundwater

All the new boreholes will need siting of the drilling points, borehole drilling works, and complete installation with pumps, switch gears, electric power supply system. Option of technology choice on electric power supply will be solar system.

Details of planed new boreholes are as follows:

Average borehole drilling depth: 80 m.
Final drilling diameter: 8 inch.
Inner diameter of casing and screen: 5 inch.
Material of the casing and screen: PVC.

b. Elevated Tank

Elevated tank for distribution of groundwater is installed in the close vicinity of the water source (borehole)

c. Public Stand Tap

Public stand tap is also installed in the close vicinity of the water source (borehole)

3.3 Hand Pump Water Supply System

The project component for the Hand Pump water supply systems involves identification of water resources and installation of hand pumps.

1) Water Resources

The water resource for the project is groundwater sources. New borehole construction works will be implemented for groundwater source development.

2) Installation of Hand Pumps

All the new boreholes will need siting of the drilling points for new boreholes, borehole drilling works, and complete installation with hand pumps. Details of planed new boreholes are as follows:

Average borehole drilling depth: 80 m.

Final drilling diameter: 8 inch.

Inner diameter of casing and screen: 5 inch.

Material of the casing and screen: PVC.

Boreholes with hand pump are to be constructed in 116 villages, which are selected from 152 candidate villages.

3) Scale of the Planed Hand Pump Water Supply System for Villages

The typical scale of the planed hand pump water supply system for villages is described in bellow table.

	Items	Description
1	Population to be served water	300 person
2	Water consumption	20 litter/day/capita
3	Expected groundwater extraction	6,000 litter/day
4	Necessary land area for the facility	2m x 8m

4. Description of the Proposed Project Site and its Surroundings, and Alternative Sites/Alignments Considered, if any, Where the Project is to be Located.

4.1 Location

As of May 2011, Acholi sub-region the historical homeland of the Acholi ethnic group, also known as Acholi-land, was constituted of seven (7) districts. The districts in Acholi-land include the following; Amuru, Nwoya, Gulu, Agago, Lamwo, Kitgum and Pader.

4.2 Relief

Acholi-land is averagely at altitude in a range of 600 to 1,100 m AMSL. The topography consists of gentle sloping plains with a few hills rising to the level of 1,200 in some areas.

4.3 Vegetation

The vegetation is typical savannah type mainly characterized by grass cover. Perennial trees normally shed their leaves during the dry season. Much of the natural vegetation has been felled down for economic activities including charcoal burning and farming.

4.4 Geology and Soils

The soil types vary from place to place but are generally well drained sandy loams and clay. Clay loams occupy areas along the rivers and streams. The soils are fertile, with potential for high productivity and especially suitable for agriculture. In some places the following soil exists: Foresails, Gleysols, Nitrosols, Reyasols and Cilhosols. The soils along major rivers in Acholi-land constitute mostly of Reyasols and Cilhosols which are poorly developed and prone to water logging. The soil of a greater part of Acholi-land consists of ferruginous soil with a high percentage of sandy soils and therefore susceptible to erosion. Due to its sandy nature, the soil has low water retention capacity and high rate of water infiltration. The soils are usually deep with little differentiation into clearly defined zones and possess fine granular structure, others molded into large, weak coherent clods that are very porous.

4.5 Climate

Acholi-land has both dry and rainy seasons. The climate is hot throughout the year with two marked rainy seasons from March to June and August to November. The rainfall peaks in April and August. The average total rainfall received is 1,130 mm per annum with the monthly average rainfall varying between 1.4 mm in January and 230 mm in August. It is hot, dry and windy from December to mid-March. The maximum temperature is about 31.8°C and the annual minimum temperature is

about 17.3°C giving a mean annual temperature of 24.6°C.

4.6 Water Resources

The water resources of the area are heavily dominated by the rainfall pattern, topography and geological formation. The immediate response to rainfall is the runoff which finds its way to the streams and gradually into the groundwater system. The relatively dry and windy conditions mean that most of the rainfall is lost through evaporation.

Surface water is dominated by the marginally perennial rivers which essentially form the boundaries of districts, counties and sub-counties at times. Smaller streams can also be found within the vicinity of some RGCs. None of these streams are gauged and therefore there is no data on stream flows to inform planning.

These surface sources are used by the community for non-culinary purposes. The growing population, coupled with lack of enforcement of environment laws and regulations and a lack of alternative energy sources have had a serious impact on the quality of the water in the streams. The streams are heavily polluted.

Groundwater is the main source of drinking water although the geology of the area does not lend it to high expansive productive aquifers. Groundwater is found in valleys and in isolated pockets of the decomposed Precambrian rocks that form most of the geological stratum.

5. Conformity of the Activity to Existing Laws, Regulations and Policies Governing such Project and the Use of the Site/Area Proposed for its Location.

An EIA required under the Uganda EIA process shall be appropriate to the nature, scale, and possible effects of the proposed project, and to the nature of the proposed site for its location. Sufficient understanding of these factors is necessary for the initial screening decision on the level of EIA required. The level and number of stages the assessment will pass through will depend on the expected extent and gravity (significance) of the environmental impacts.

Related existing laws, regulations and policies governing the project are as follows.

5.1 Millennium Development Goals

The seventh goal of the Millennium development goals is ensuring environmental sustainability. Some of the key targets for this goal include: Integrate sustainable development principles into country policies and programs and reverse the loss of environmental resources; Halve the proportion of people suffering the lack of access to safe drinking water and basic sanitation by 2015; and Achievement of significant improvement in the lives of at least 100 million slum dwellers by 2020. In ensuring drinking water it is defined that people need to have access to safe and clean water supply and a possibility to acquire enough water for drinking, food preparation and hygiene purposes.

Through improved water and sanitation, the project will contribute to goal four (4) of the Millennium development goals which is reducing child mortality by two-thirds by 2015.

5.2 The National Environment Management Policy

This emphasizes sustainable management of natural resources and stakeholder participation in environmental management, so that the ability of the future generation to meet their needs is not adversely compromised by the activities of the present generation. The DWD has prepared this Project Brief for purposes of ensuring sustainable use of resources and enhancing stakeholder participation.

5.3 The PEAP

The Poverty Eradication Action Plan (PEAP) promotes poverty alleviation activities in rural communities. The policy plans recognizes sustainable natural resource management including provision of water facilities as one of the key strategic intervention areas to achieve PEAP objectives.

5.4 The Constitution of Uganda

The Constitution of the Republic of Uganda, 1995, is the main legislation body in the country. It offers, "every Ugandan has the right to a clean and healthy environment (clause 39) while at the same time expects citizens to play their part in creating a healthy environment. It is the duty of every Ugandan to create and protect a clean and healthy environment (clause 17j).

5.5 The Water Act, Cap 152. 1995

The Water Act, Cap 152 provides for the use, protection and management of water resources and supply. Sections 18 of division 3 (Hydraulic works) of the Water Act states that permission may be granted for people carrying out construction works on water bodies. Section 19 provides for exemptions to a public authority or a class of persons or works. Section 20 provided that when works is permitted to be undertaken, it should not pollute the water and that there shouldn't be damage caused to the source or to the outflow. If any bridges and culvert crossing are to be installed these provisions will have to be complied with as appropriate.

5.6 The National Environment Act, Cap 153, 1995

The National Environment Act Cap 153, laws of Uganda, provides tools for environmental management. The Act imposes a mandatory duty on a project developer to have an Environmental Impacts Assessment conducted before embarking on a project. The Third Schedule of the Act made under section 18 of the Act specifies the types of the projects to be subjected to EIA. Water supply projects also require Environmental Impact Assessments procedure for implementation.

5.7 The Land Act

- Section 43: Utilization of land according to various laws

A person who owns or occupies land shall manage and utilize the land in accordance with the Forests Act, the Mining Act, the National Environment Act, the Water Act and any other law.

- Section 71: Rights of way

All land, whether alienated or un-alienated, shall be subject to all existing public rights of way which shall be reserved to and vested in the Government on behalf of the public; and all such rights of way shall be maintained by the public uninterrupted unless they are terminated or altered by the direction of the Minister (responsible for lands) in writing.

5.8 Environmental Impact Assessment Guideline, 1999

General EIA objectives are clearly stated in EIA Guidelines and apply to this particular project. In brief the objectives of the EIA study are to;

- Identify potential environmental concerns at a sufficiently early stage in the project development process so that appropriate measures are incorporated into the scheme selection, planning and design to ensure its environmentally sound.
- Give project designers a chance to address environmental issues in a cost effective manner after considering. all possible scheme and design alternatives.
- Minimize complaints, which may arise between the developer on one hand and the affected local community as well as local authorities on the other hand after the project has been implemented.
- Ensure that the developer acquires all the necessary permits as required by the regulating agencies involved with interests in the project.

5.9 The National Environment (Waste Management) Regulations, 1999

The National Environment (Waste Management) Regulations, 1999 apply to all categories of hazardous and non-hazardous waste and to the storage and disposal of hazardous waste and its movement into and out of Uganda. The regulations promote cleaner production methods and require a facility to minimize waste generation through improvement of production processes and monitoring the product cycle from the beginning to the end. Of much relevancy to the project, the regulations promote cleaner production methods that enable the recovery and reuse of wastes, reclamation and recycling. The construction phase will generate a lot of waste materials consisting of both solids and liquids. Measures used for the management of waste will as a priority have to take into consideration cleaner production methods including recovery and recycling of waste before final disposal.

5.10 The National Environment (Riverbanks, Lakeshores and Wetlands) regulations, 2000

Among other objectives, the regulations provide for the regulated public use and enjoyment of wetlands, minimization and control of pollution and ensuring that wetlands are protected as habitats for species of fauna and Flora. Since development of this project has the potential to impact negatively to the wetlands in the area, it should be ensured that the activities are undertaken within the objectives for wetlands protection and therefore measures will be instituted to ensure that the contractor's activities during construction do not negatively impact on the wetlands in the project area..

5.11 The National Environment (Noise Standards and Control) Regulations, 2003

The purpose of these Regulations is to ensure the maintenance of a healthy environment for all people in Uganda, the tranquility of their surroundings and their psychological well-being by regulating noise levels, and generally, to elevate the standard of living of the people by -

- prescribing the maximum permissible noise levels from a facility or activity to which aperson

may be exposed;

- providing for the control of noise and for mitigating measures for the reduction of noise; and
- generally for giving effect to the provisions of section 28 of the National Environment Act.

6. Alternatives Considered

This project aims at improvement of drinking water supply condition to the communities in Acholi sub-region to meet drinking water demand in the project area. The water source is limited to groundwater due to lack of surface water in the project area during dry season. The isolated case is. Awere RGC in Pader district which is located near River Achowa. It is a perennial river. However, the use of river water with high turbidity needs water treatment. It is rather difficult for the community to manage the treatment system than groundwater abstraction system. Under these situations, it is very difficult to find effective alternatives of this project. More detail consideration is developed in Chapter 8.

7. Likely Environmental Impacts and Mitigation Measures

The Table below shows Likely Negative Environmental Impacts brought by the project and how the impacts can be mitigated.

1) Environmental Impacts associated with the Project Siting

Category	Environmental Item	Negative Impacts	Mitigation Measures
Social Environment	Land tenure	Land takes for the construction which reduces the coverage of cultivable land or grass land.	An agreement for the proposed lad must be signed by the land owner and responding District Local Government before any construction takes place to show that the owner of the land gave it willingly.

2) Environmental Impacts associated with the Construction Phase of the Project

Category	Environmental Item	Negative Impacts	Mitigation Measures
Pollution Control	Noise and Vibration	Noise during Construction	· Declaration of operation schedule · Cautious operation and speed control of construction machinery. · Not to exceed the allowable noise limits.
	Wastes	Waste generation ranging from solid and liquid.	· Contractor should clear any waste generated during construction and damp them at a proper disposal place. · Care must be taken in the handling and storage of all liquids to avoid any environmental degradation.
Natural Environment	Ecosystem	Vegetation Clearance	Clearance of vegetation should only be limited to the agreed construction area.
Social Environment		Traffic Disturbance during installation of transmission and distribution pipes	· Declaration of operation schedule · Keep one vehicular lane
		Prevalence of HIV/AIDS	Socially the workers may develop relationship with the female community members. Contractor is advised to monitor his workers and educate on the dangers of HIV/AIDS

3) Environmental Impacts associated with Operation and Maintenance Phase of the Project

Category	Environmental Item	Negative Impacts	Mitigation Measures
Pollution Control	Wastes	Water stagnation that leads to mosquitoes breeding.	• Soak pits with enough infiltration ability should be designed and installed to prevent accumulation of stagnant water. • The soak pits should be maintained through daily cleaning activities by the Water and Sanitation Committee / the Water Service Board.
Natural Environment	Hydrology	Reduction of groundwater table	Conservation of groundwater should be achieved by keeping discharge volume under safety yields of each borehole.

8. Any Other Information that may be Useful in Determining the Level of EIA Required

It is very difficult to find effective alternatives of this project so that consideration about "without project case" and "with project case" is implemented from the environmental and social points of view for reference. The consideration result is shown in following table as relative evaluation.

Consideration results on "without project case" and "with project case"

Environmental Elements			Case			
			Without this project		With this project	
			Impacts	Good /Bad	Impact	Good /Bad
Social Environment	1	Involuntary Resettlement	Nothing will occur.		Nothing will occur.	-
	2	Local Economy	No change		Creation of employment opportunity	+
	3	Land use and Utilization of Local resources	No change		Change of land use	-
	4	Social institution such as Social infrastructure and Local decision-making institutions	Deterioration of reliability villagers, , Local government and DWD	-	Increase of reliability among villagers, , Local government and DWD	+
	5	Existing Social Infrastructure and Services	No change		Improvement of drinking water supply condition	:+
	6	The poor, Indigenous and Ethnic people	Deterioration of health and water supply conditions	-	Improvement of health and water supply conditions	+
	7	Misdistribution of benefits and Damage.	No change		Realization of fair allocation of drinking water	+
	8	Cultural Heritage	No change		No change is anticipated	
	9	Local Conflict of interest	Scrambling of drinking water	-	Mitigation of sscrambling of drinking water	+
	10	Water Usage, Water Rights and Commune Rights	No change		Out of the scope of this project	
	11	Sanitation	Deterioration of health and water supply conditions	-	Improvement of health and drinking water supply condition	+
	12	Natural Disaster (Risk) Infectious Disease such as HIV/AIDS	Nothing will occur. No change.		Decrease of draught damage Increase of opportunity of HIV/AIDS may happen if no mitigation measure are taken	+ -
n	13	Topography and	No change		The impacts are unknown	

		Geological Features				
	14	Soil Erosion	No change		Little possibility	-
	15	Groundwater	No change		Appropriate groundwater use can keep groundwater sustainability.	+
	16	Hydrological Situation	No change		Increase of groundwater use may change surface water condition.	-
	17	Flora and Fauna and Biodiversity	No change		Avoiding negative impacts	
	18	Meteorology	No change		Out of the scope of the project	
	19	Landscape	No change		Partially possible	-
	20	Global Warming	No change		Out of the scope of the project	
Pollution	21	Air Pollution	Nothing will occur.		Temporarily occur	-
	22	Water Pollution	Nothing will occur.		Almost nothing will occur by installation and maintenance of soak pits	
	23	Soil Contamination	Nothing will occur.		Almost nothing will occur	
	24	Wastes	No change		Waste during construction phase should be damped to a proper disposal place.	
	25	Noise and Vibration	No change		Temporarily occur	-
	26	Ground Subsidence	Nothing occur		Nothing occur	
	27	Offensive Odor	Nothing will occur.		No change	
	28	Bottom Sediment	Nothing will occur.		Nothing will occur.	
	29	Accidents	Nothing will occur.		Almost nothing will occur	

Note : +: Positive impact, -: Negative impact, +/-: Both impacts will occur

The consideration above brings following conclusion;

- "Without project case" is considered to bring increases of drinking water shortage and water borne disease.
- "With project case" is considered to bring negative impacts such as increase of groundwater use, and noise/vibration during construction stage; and positive impacts such as dissolution of water shortage, realization of fair water allocation, reduction of drought damage, appropriate groundwater use, creation of job opportunity, increase of social capital and so on; the "With project case" shows high performances though it has several weak points.

The implementation of this project is supposed to be more relevant than "without project case" for sustainable development of rural water supply.

Appendices

Appendix 1: 6 RGCs where Piped water supply system or Motorized point water supply system to be installed

Appendix 2: Villages where a hand pump system to be installed

Appendix 1: 6 RGCs where Piped Water Supply System or Motorized Point Water Supply System to be Installed

No.	RGC	District	County	Sub-county	Parish	Population (2011)
PWS-03	Koch Goma	Nwoya	Nwoya	Koch Goma	Kal	1,800
PWS-06	Unyama	Gulu	Achwa	Onyama	Pakwelo	3,085
PWS-08	Awere		Omoro	Odek	Lamola	1,421
PWS-10	Adilang	Agago	Agago	Adilang	Lalal	3,015
PWS-14	Kitgum Matidi	Kitgum	Chwa	Kitgum Matidi	Ibakara	2,400
PWS-15	Corner Kilak	Pader	Aruu	Pader	Kilak	1,224

Appendix 2: Villages where a Handpump System to be Installed

116 villages will be selected for the construction of hand pump system from following 152 Villages

No.	Village	District	County	Sub-county	Parish	Population (2011)
1. Amuru District (29 villages)						
1	Bibia East	Amuru	Kilak	Attiak	Bibia	3,080
3	Okidi North	Amuru	Kilak	Attiak	okidi	1,280
4	Pacilo East	Amuru	Kilak	Attiak	Pacilo	642
5	Palukere East	Amuru	Kilak	Attiak	Palukere	2,301
7	Pukumu	Amuru	Kilak	Attiak	Pawal	1,827
8	Pupwonya East	Amuru	Kilak	Attiak	Popwonya	535
9	Paomo	Amuru	Kilak	Pabbo	Gaya	4,437
10	Kal centre	Amuru	Kilak	Pabbo	Pabbo Kal	3,897
11	Andara	Amuru	Kilak	Pabbo	Labala	3,080
12	Olinga	Amuru	Kilak	Pabbo	Labala	11,012
13	Kati Kati A	Amuru	Kilak	Pabbo	Palwong	1,660
14	Abera	Amuru	Kilak	Pabbo	Parubanga	658
15	Ceri	Amuru	Kilak	Pabbo	Pogo	1,460
17	Abyee	Amuru	Kilak	Lamogi	Agwaryugi	9,800
18	Amora	Amuru	Kilak	Lamogi	Guru-Guru	1,010
19	Opok	Amuru	Kilak	Lamogi	Gira-Gira	10,430
20	Pukure	Amuru	Kilak	Lamogi	Lacor	3,246
21	Coorom	Amuru	Kilak	Lamogi	Pagoro	1,550
23	Odur	Amuru	Kilak	Lamogi	Coke	8,515
25	Teddi	Amuru	Kilak	Amuru	Acwera	3,766
27	Amoyokuma	Amuru	Kilak	Amuru	Pagak	8,500
28	Labongo	Amuru	Kilak	Amuru	Pagak	2,464
29	Lujoro	Amuru	Kilak	Amuru	Pailyee	2,455
30	Mutema	Amuru	Kilak	Amuru	Pailyee	8,490
31	Ogeli	Amuru	Kilak	Amuru	Pamuca	9,750
32	Reckieeke	Amuru	Kilak	Amuru	Pailyee	9,170
33	Lamolo Coke	Amuru	Kilak	Lamogi	Coke	1,700
34	Apaa	Amuru	Kilak	Pabbo	Labala	1,160
35	Palukere West	Amuru	Kilak	Attiak	Palukere	1,512
2. Nwoya District (12 villages)						
37	Bwobonam B	Nwoya	Nwoya	Alero	Bwobonam	3,900
40	Latekodong	Nwoya	Nwoya	Alero	Pacokrac	9,820
46	Akago	Nwoya	Nwoya	Anaka	Pabali	2,500
48	Kal	Nwoya	Nwoya	Anaka	Paduny	8,100
54	Agonga B	Nwoya	Nwoya	Koch Goma	Agonga	4,170
62	Paminolango	Nwoya	Nwoya	Puronga	Latoro	2,600
64	Lodi	Nwoya	Nwoya	Puronga	Paromo	2,200
65	Patira East	Nwoya	Nwoya	Puronga	Patira	2,500
66	Patira West	Nwoya	Nwoya	Puronga	Patira	2,600
67	Pawatomero Central	Nwoya	Nwoya	Puronga	Pawatomero	2,619
68	Pawatomero East	Nwoya	Nwoya	Puronga	Pawatomero	8,000
70	Lagazi	Nwoya	Nwoya	Puronga	Pabit East	1,900
3. Gulu District (21 villages)						
89	Acutomer	Gulu	Achwa	Paicho	Kal Umu	1,764
90	Omel	Gulu	Achwa	Paicho	Omel	3,244
95	Gulu PTC	Gulu	Achwa	Paicho	Unyama	5,000
96	Agoro I	Gulu	Achwa	Palaro	Labworomor	1,268
101	Kiteny Central	Gulu	Achwa	Palaro	Owalo	1,182
105	Adak	Gulu	Achwa	Patiko	Pugwenyi	2,000
106	Labworomor	Gulu	Omoro	Bobi	Paidongo	1,939
107	Along	Gulu	Omoro	Bobi	Paidwe	8,635

No.	Village	District	County	Sub-county	Parish	Population (2011)
108	Ibar	Gulu	Omoro	Bobi	Palenga	8,300
110	Adak	Gulu	Omoro	Bobi	Patek	9,025
111	Ariya	Gulu	Omoro	Koro	Acoyo	3,000
114	Atede	Gulu	Omoro	Koro	Lapainat East	2,018
115	Obwola	Gulu	Omoro	Koro	Lapainat West	1,360
116	Kal A and B	Gulu	Omoro	Koro	Pageya	2,506
123	Otal	Gulu	Omoro	Lalogi	Gem	2,067
124	Alwii	Gulu	Omoro	Lalogi	Idobo	1,700
125	Latinnyer	Gulu	Omoro	Lalogi	Idobo	1,360
126	Aparowiya I	Gulu	Omoro	Lalogi	Jaka	1,974
127	Aparowiya II	Gulu	Omoro	Lalogi	Jaka	1,550
136	Owak	Gulu	Omoro	Ongako	Abwoch	4,000
138	Lamin Lawino	Gulu	Omoro	Ongako	Ongako Kal	3,690
4. Agago District (23 villages)						
141	Lutage	Agago	Agago	Lokole	Otumpili	500
144	Sub County HQ	Agago	Agago	Lira Palwo	omongo	1,800
145	Tori East	Agago	Agago	Lira Palwo	Lutome	780
146	Agweng	Agago	Agago	Lira Palwo	Lutome	620
148	Lapyem	Agago	Agago	Lira Palwo	Lanyirinyi	470
150	Kotomor east	Agago	Agago	Kotomor	Apobo	1,800
151	Amin Ogwal	Agago	Agago	Kotomor	Otek	800
152	Oringo Ongom	Agago	Agago	Kotomor	Olyelowidyel	515
153	Te Vwao	Agago	Agago	Kotomor	Ogong	500
154	opyel Central	Agago	Agago	Patongo	Kal	478
156	Opal Oryoneko	Agago	Agago	Patongo	odongkiwinyo	490
158	Owito	Agago	Agago	Patongo	lukwangole	550
159	Atanga	Agago	Agago	Wol	Kalagum	456
163	Abalukwang	Agago	Agago	Wol	Guda	370
166	Aleb Tong	Agago	Agago	Arum	Kazikazi	350
167	Wii Atup	Agago	Agago	Arum	Kazikazi	400
170	Laming Onen	Agago	Agago	Omiya Pacwa	Layita	500
171	Lakwa A	Agago	Agago	Omiya Pacwa	Lakwa	400
172	Acam Roma	Agago	Agago	Lokole	Ladere	370
173	Lela Kabala	Agago	Agago	Wol	atut	372
176	Tong Wiri South	Agago	Agago	Paimol	Pacabol	289
178	Labedongony	Agago	Agago	Paimol	Ngora	420
179	Te Okiro	Agago	Agago	Paimol	Ngora	420
5. Lamwo District (29 villages)						
180	Apyeta Central	Lamwo	Lamwo	Palabek Ogili	Apyeta	400
181	Padwat Central (Padwat P/S)	Lamwo	Lamwo	Palabek Ogili	Padwat	780
182	Padwat West (Laluru Oyika)	Lamwo	Lamwo	Palabek Ogili	Padwat	397
184	Lio-Tee okworo	Lamwo	Lamwo	Padibe East	Alan	373
185	Dech East	Lamwo	Lamwo	Padibe East	Katum	590
186	Dog Lokutu East	Lamwo	Lamwo	Padibe East	Kuluyee	499
187	Tadi South	Lamwo	Lamwo	Padibe East	Wangtit	419
188	Gem (Gem)	Lamwo	Lamwo	Madi-opei	Kal	406
190	Pobutu	Lamwo	Lamwo	Madi-opei	Pobura	756
193	Lagwel P/S	Lamwo	Lamwo	Padibe West	Lagwel	726
195	Tumbafu West	Lamwo	Lamwo	Padibe West	Ywaya	680
196	Obere	Lamwo	Lamwo	Agoro	Ngacino	610
197	Loromibenge B	Lamwo	Lamwo	Agoro	Pobar	431
199	Moroto East	Lamwo	Lamwo	Agoro	Pawach	473
200	Lumwaka A	Lamwo	Lamwo	Agoro	Pawach	507
201	Lobiluku (obokolot)	Lamwo	Lamwo	Paloga	Bungu	606
202	Langole (Keca)	Lamwo	Lamwo	Paloga	Bungu	618
203	Biber (Itiba)	Lamwo	Lamwo	Paloga	Bungu	486
206	Guria North	Lamwo	Lamwo	Lokung	Parapono	340
207	Liri Central	Lamwo	Lamwo	Palabek Kal	Ayuu Alali	412

No.	Village	District	County	Sub-county	Parish	Population (2011)
208	Lanywang E-walagiri	Lamwo	Lamwo	Palabek Kal	Labigirwang	767
209	Ayuu-lupur(Barara)	Lamwo	Lamwo	Palabek Gem	Anaka	962
210	Ajaa ogala (Alere)	Lamwo	Lamwo	Palabek Gem	Anaka	611
212	Pawena central (Tee Kasia)	Lamwo	Lamwo	Palabek Gem	Cubu	850
214	Amina (Nino mit)	Lamwo	Lamwo	Palabek Gem	Gem	730
215	Dyangbii (Near lutara's home)	Lamwo	Lamwo	Palabek Gem	Patanga	850
216	Kafata (Mbuya Parent sch.)	Lamwo	Lamwo	Palabek Gem	Patanga	820
217	Arusha (Aloyi)	Lamwo	Lamwo	Palabek Gem	Moroto	630
218	Kamama central H/C III	Lamwo	Lamwo	Palabek Gem	Moroto	2,020
6. Kitgum District (19 villages)						
221	Okidi central	Kitgum	Chua	Amida	Okidi	656
225	Langii	Kitgum	Chua	Kitgum Matidi	Oryang	717
228	Rucurucu	Kitgum	Chua	Lagoro	Lakwor	415
229	Akino (Dem kulu kwach)	Kitgum	Chua	Lagoro	Lalano	679
230	Gulu gwen Orua .B.	Kitgum	Chua	Lagoro	Pawidi	657
231	Ocettokkee Trading centre	Kitgum	Chua	Layamo	Ocettokkee	952
232	Pagen Central (Corner Padibe)	Kitgum	Chua	Layamo	Pagen	1,058
233	Pamolo central	Kitgum	Chua	Layamo	Pamolo	1,037
234	Panyum "A"	Kitgum	Chua	Mucwini	Bura	468
235	Ayom Olola "B"	Kitgum	Chua	Mucwini	Okol	320
239	Yepa A	Kitgum	Chua	Mucwini	Yepa	324
240	Juba	Kitgum	Chua	Mucwini	Akara	726
241	Lacen Otinga West	Kitgum	Chua	Mucwini	Akara	258
242	Winyorac-Pawiny	Kitgum	Chua	Namokora	Kalabong	454
243	Lakokok	Kitgum	Chua	Namokora	Pagwok	386
246	Labworomor	Kitgum	Chua	Omiya Anyima	Melong	465
249	Lobale	Kitgum	Chua	Orom	Akurumo	360
252	Otoboi (security site)	Kitgum	Chua	Orom	Lolia	645
253	Agora	Kitgum	Chua	Orom	Lolwa	471
7. Pader District (19 villages)						
258	Alilli	Pader	Aruu	Lapul	Koyo	600
259	Nek-Nono	Pader	Aruu	Lapul	Atoo	289
260	Te-okuto	Pader	Aruu	Puranga	Parwech	569
261	Tee tworo	Pader	Aruu	Puranga	Aringa	371
263	Apwor kla	Pader	Aruu	Puranga	Laminajiko	344
264	Aria	Pader	Aruu	Atanga	Kal	550
266	Lapoyaokwee	Pader	Aruu	Atanga	Lawiyeadul	247
268	Aringo yon	Pader	Aruu	Angagura	Burlobo	360
269	Libii	Pader	Aruu	Angagura	Burlobo	559
270	Atup	Pader	Aruu	Awere	Rackoko	978
271	Parwech Lukee east	Pader	Aruu	Awere	Lagile	602
278	Lali	Pader	Aruu	Laguti	Pakeyo	155
282	Bangalela	Pader	Aruu	Pajule	Oryang	329
285	Lela awoki	Pader	Aruu	Latanya	Golo	280
286	Dure north	Pader	Aruu	Latanya	Dure	340
287	Obalo	Pader	Aruu	Latanya	Latigi	540
289	Dagolwato	Pader	Aruu	Latanya	Nyekidi	439
290	Pagor	Pader	Aruu	Ogom	Kalangore	555
292	Lapeny	Pader	Aruu	Ogom	Otong	180

Minutes of Discussions
on
The Preparatory Survey
for
The Project for Provision of Improved Water Sources for Returned IDP
in Acholi Sub Region in the Republic of Uganda
(Explanation on Draft Report)

In August 2011, the Japan International Cooperation Agency (hereinafter referred to as "JICA") dispatched a Preparatory Survey Team on the Project for Provision of Improved Water Source for Returned IDP in Acholi Sub Region in Uganda (hereinafter referred to as "the Project") to the Republic of Uganda (hereinafter referred to as "Uganda") and through discussion, field survey, and technical examination of the results in Japan, JICA prepared a draft report of the study.

JICA dispatched to Uganda the Draft Report Explanation Team (hereinafter referred to as " the Team "), which was headed by Mr. Toshio Murakami, Senior Advisor of JICA, from September 3rd-6th, 2012 to consult the Uganda authorities on the components of the draft report.

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

Kampala, September 6th, 2012

村上敏雄

Mr. Toshio Murakami
Leader
Preparatory Survey Team
Japan International Cooperation Agency

Eng. Richard Cong
For; Permanent Secretary
Ministry of Water and Environment
Government of the Republic of Uganda

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ATTACHMENT

1. Components of the Draft Report

The Uganda side agreed and accepted in principle the components of the draft outline design explained by the Team. The project sites and components of the project are shown in Annex-1 and 2.

2. Japan's Grant Aid scheme

The Uganda side understood the scheme of Japan's Grant Aid and would take the necessary measures and allocate necessary budget properly for smooth implementation of the Project, as a condition for the Japanese Grant Aid to be implemented. The Grant Aid Scheme and necessary measures were described in the Annex 4, 5 and 6 of the Minutes of Discussions signed by both sides on August 23rd, 2011 (hereinafter referred to as "the previous minute").

Both sides confirmed that the dispatch of the Team is not necessary a commitment of the Project to be implemented and that the scope of the Project would be examined further by the Government of Japan for its approval as a Grant Aid.

3. Project Area

The project area is Acholi sub-region which is currently composed of Agago, Amuru, Kitgum, Gulu, Lamwo, Pader, and Nwoya districts. The administration boundary as of the date of this Minutes of Discussion shall be applied in case of the administrative boundary.

4. Responsible and Implementing Organization

4-1 The Responsible Organization is the Ministry of Water and Environment (hereinafter referred to as "MoWE"), the Government of Uganda, and its focal directorate is the Directorate of Water Development (DWD).

4-2 The Implementing Organizations are the district local governments of the respective seven (7) districts mentioned in "3.Project Area" above. These seven districts through their respective district water office are in charge of operation and maintenance of the facilities to be constructed under the Project.

5. Schedule of the Study

JICA will complete the final report in accordance with the confirmed items and send it to Uganda by the end of December, 2012.

6. Other Relevant Issues

6-1 Target site and Alternative sites

Both sides agreed on the following;

(1) The Team explained that the target sites are 116 villages for borehole facilities and 6 RGCs for piped water supply facilities for the Project shown in Annex-3. 36 alternative sites are reserved in addition to the above 116 sites for the unsuccessful drilling in the target sites.

(2) The Uganda side takes necessary measure for securing the project sites, and informs of the

updated situation of the project sites shown in Annex-3.

(3) Depending on the updated situation, the alternative sites are to be studied. As a result of the study, the number of the total target sites may be reduced for point water sources.

(4) Any alternative site is not considered for RGCs.

6-2 Criteria of Successful boreholes

Both sides agreed that the yield of 0.6 m^3/hr is applied for the successful boreholes considering the hydrogeological conditions thereof.

6-3 Project Cost Estimate

The Team explained to the Uganda side the estimated project cost as attached in Annex-5. Both sides confirmed that this estimated cost was provisional and would be examined further by the Government of Japan for its final approval. Furthermore, both sides confirmed that this project cost estimate is confidential, and should never be duplicated in any forms or released to any other parties until the relevant contracts are awarded by the executing agency, in order to secure fairness of tender procedure.

6-4 Undertakings by the Uganda Side

Both sides agreed the Uganda side to timely allocate the necessary amount of budget (Annex-5) for smooth implementation of the Project, to assign counterpart personnel during the implementation of the Project.

(1) Tax exemption and Custom Clearance

Both sides confirmed that the Uganda side shall take necessary measures to exempt Japanese nationals who will be engaged in the Project from all duties and related fiscal charges which may be imposed in Uganda with respect to local procurement under the verified contract.

Both sides also confirmed that the Uganda side shall take necessary measures to implement smooth custom clearance for the materials and equipment for the Project to be imported from Japan or third countries.

(2) Environmental Impact Assessment (EIA)

The Uganda side assured to undertake environmental screening and if necessary, the environmental impact assessment (EIA) in relation to the Project and to obtain the formal approval from relevant authorities according to the Ugandan laws and regulations. Based on the preliminary design to be provided by the Team, MoWE shall ensure that the formalities relating to EIA are undertaken by implementation of the Project.

(3) Protection of Test Boreholes

The Uganda side agreed that the test boreholes drilled in the survey shall be protected safely by the Uganda side until the commencement of the Project.

(4) Operation and Maintenance of the water supply facilities

The Uganda side assured the appropriate operation and maintenance of the water supply facilities to be constructed and proper use of the equipment provided under the Project.

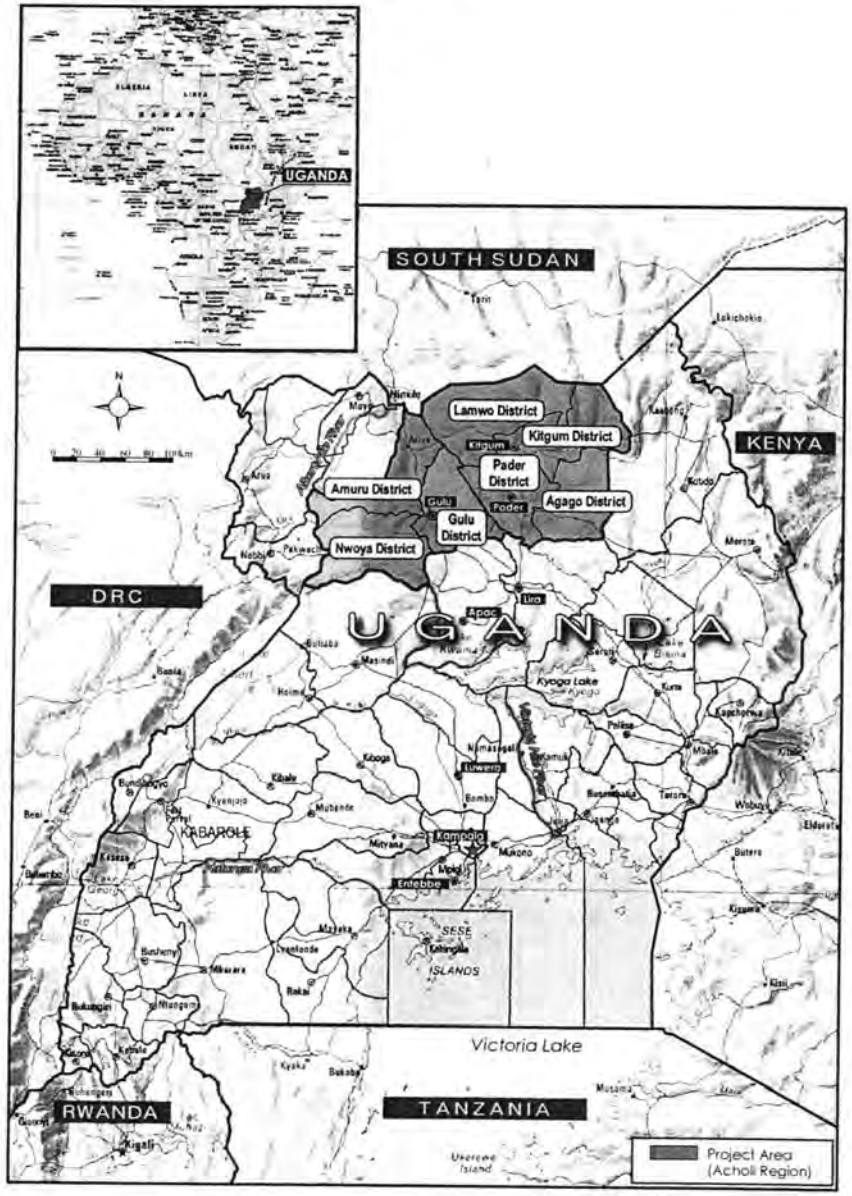
(END)

Annex:

Annex-1	Project Site
Annex-2	Components of the Project
Annex-3	Selected Target Villages and Substitutes
Annex-4	Organization Chart of the Responsible Organization
Annex-5	Project Cost Estimation

Project Site

Annex-1



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Annex-2

Components of the Project

1. Construction of Deep Boreholes with Hand Pump 116 sites as per the attached list

i)	Amuru District:	22
ii)	Nwoya District:	9
iii)	Gulu District:	16
iv)	Lamwo District:	22
v)	Kitgum District:	15
vi)	Pader District:	15
vii)	Agago District:	17
	Total:	116

Hand Pump: U-2 type with PVC riser pipes and stainless steel rods

2. Construction of Piped Water Supply Facilities: 6 RGCs as listed below

District	RGC	Served Population (2017)	Water Demand (m^3/day)	The Number of Boreholes	
				Test Boreholes drilled in the Study	Existing Boreholes
Gulu	Unyama	3,600	72.0	1 borehole	1 borehole
	Awere	1,700	34.0	-	2 boreholes
Nwoya	Koch Goma	2,100	42.0	1 borehole	1 borehole
Kitgum	Kitgum Matidi	2,800	56.0	1 borehole	1 borehole
Pader	Corner Kilak	2,000	40.0	1 borehole	2 boreholes
Agago	Adilang	3,800	76.0	2 boreholes	2 boreholes
	TOTAL	16,000	320.0	6 boreholes	9 boreholes

3. Procurement of Service Rig: 1 set
Medium body cargo truck with crane, lift frame, winch, double tube pipes for well development, engine compressor, and engine welder

4. Procurement of Hand Pump Repair Tools: 73 sets including fishing tools

5. Technical Assistance consisting of:

i) Empowerment of target villages for establishing WSCs and proper operation and maintenance on VLOM basis: 152 villages including 36 alternatives as well as 6 RGCs, and

ii) Training of hand pump mechanics: 3 HPMs representing each sub-county of 7 districts for the 2-day training course focusing only on the handling of PVC riser pipes and cooperation with villagers, etc.

Annex-3

Selected Target Villages and Substitutes

No.	Village	District	Sub-county
1. Amuru District (22 sites)			
8	Pupwonya East	Amuru	Attiak
21	Coorom	Amuru	Lamogi
4	Pacilo East	Amuru	Attiak
12	Olinga	Amuru	Pabbo
10	Kal centre	Amuru	Pabbo
13	Kati Kati A	Amuru	Pabbo
32	Reckiceke	Amuru	Amuru
28	Labongo	Amuru	Amuru
23	Odur	Amuru	Lamogi
33	Lamolo Coke	Amuru	Lamogi
17	Abyee	Amuru	Lamogi
18	Amora	Amuru	Lamogi
3	Okidi North	Amuru	Attiak
19	Opok	Amuru	Lamogi
9	Paomo	Amuru	Pabbo
20	Pukure	Amuru	Lamogi
14	Abera	Amuru	Pabbo
35	Palukere West	Amuru	Attiak
5	Palukere East	Amuru	Attiak
34	Apaa	Amuru	Pabbo
1	Bibia East	Amuru	Attiak
30	Mutema	Amuru	Amuru
7	Pukumu	Amuru	Attiak
25	Teddi	Amuru	Amuru
31	Ogeli	Amuru	Amuru
27	Amoyokuma	Amuru	Amuru
29	Lujoro	Amuru	Amuru
15	Ceri	Amuru	Pabbo
11	Andara	Amuru	Pabbo
2. Nwoya District (9 sites)			
67	Pawatomero Central	Nwoya	Puronga
65	Patira East	Nwoya	Puronga
66	Patira West	Nwoya	Puronga
68	Pawatomero East	Nwoya	Puronga
62	Paminolango	Nwoya	Puronga
64	Lodi	Nwoya	Puronga
70	Lagazi	Nwoya	Puronga
48	Kal	Nwoya	Anaka
54	Agonga B	Nwoya	Koch Goma
46	Akago	Nwoya	Anaka
37	Bwobonam B	Nwoya	Alero
40	Latekodong	Nwoya	Alero
3. Gulu District (16 sites)			
106	Labworomor	Gulu	Bobi
96	Agoro 1	Gulu	Palaro
116	Kal A and B	Gulu	Koro
105	Adak	Gulu	Patiko
111	Ariya	Gulu	Koro
124	Alwii	Gulu	Lalogi
125	Latinnyer	Gulu	Lalogi
101	Kiteny Central	Gulu	Palaro
115	Obwola	Gulu	Koro
90	Omel	Gulu	Paicho
136	Owak	Gulu	Ongako
108	Ibar	Gulu	Bobi
95	Gulu PTC	Gulu	Paicho

Annex-3

Selected Target Villages and Substitutes

No.	Village	District	Sub-county
107	Along	Gulu	Bobi
138	Lamin Lawino	Gulu	Ongako
126	Aparowiya I	Gulu	Lalogi
127	Aparowiya II	Gulu	Lalogi
114	Atede	Gulu	Koro
89	Acutomer	Gulu	Paicho
123	Otal	Gulu	Lalogi
110	Adak	Gulu	Bobi
4. Agago District (17 sites)			
163	Abalukwang	Agago	Wol
154	opyel Central	Agago	Patongo
145	Tori East	Agago	Lira Palwo
146	Ageweng	Agago	Lira Palwo
150	Kotomor east	Agago	Kotomor (Patongo)
151	Amin Ogwal	Agago	Kotomor (Patongo)
156	Opul Oryoneko	Agago	Patongo
152	Oringo Ongom	Agago	Kotomor (Patongo)
167	Wii Atup	Agago	Arum (Omot)
153	Te Vwao	Agago	Kotomor (Patongo)
158	Owito	Agago	Patongo
166	Aleb Tong	Agago	Arum (Omot)
174	Lela Kabala	Agago	Wol
148	Lapyem	Agago	Lira Palwo
144	Sub County HQ	Agago	Lira Palwo
159	Atanga	Agago	Wol
172	Acam Roma	Agago	Lokole
141	Lutage	Agago	Lokole
170	Laming Onen	Agago	Omiya Pacwa (Paimol)
171	Lakwa A	Agago	Omiya Pacwa (Paimol)
178	Labedongony	Agago	Paimol
179	Te Okiro	Agago	Paimol
176	Tong Wiri South	Agago	Paimol
5. Lamwo District (22 sites)			
207	Liti Central	Lamwo	Palabek Kal
199	Moroto East	Lamwo	Agoro
196	Obere	Lamwo	Agoro
217	Arusha (Aloyi)	Lamwo	Palabek Gem
214	Amina (Nino mit)	Lamwo	Palabek Gem
188	Gem (Gem)	Lamwo	Madi-opei
216	Kafata	Lamwo	Palabek Gem
215	Dyangbii	Lamwo	Palabek Gem
203	Biber (Itiba)	Lamwo	Paloga
208	Lanywang E-walagiri	Lamwo	Palabek Kal
206	Guria North	Lamwo	Lokung
180	Apyeta Central	Lamwo	Palabek Ogili
209	Ayuu-lupur(Barara)	Lamwo	Palabek Gem
218	Kamama central H/C III	Lamwo	Palabek Gem
212	Pawena central (Tee Kasia)	Lamwo	Palabek Gem
197	Loromibenge B	Lamwo	Agoro
201	Lobiluku (obokolot)	Lamwo	Paloga
190	Pobutu	Lamwo	Madi-opei
182	Padwat West (Laluru Oyika)	Lamwo	Palabek Ogili
195	Tumbafu West	Lamwo	Padibe West
185	Dech East	Lamwo	Padibe East
186	Dog Lokutu East	Lamwo	Padibe East
184	Lio-Tee okworo	Lamwo	Padibe East
187	Tadi South	Lamwo	Padibe East
181	Padwat Central (Padwat P/S)	Lamwo	Palabek Ogili

Annex-3

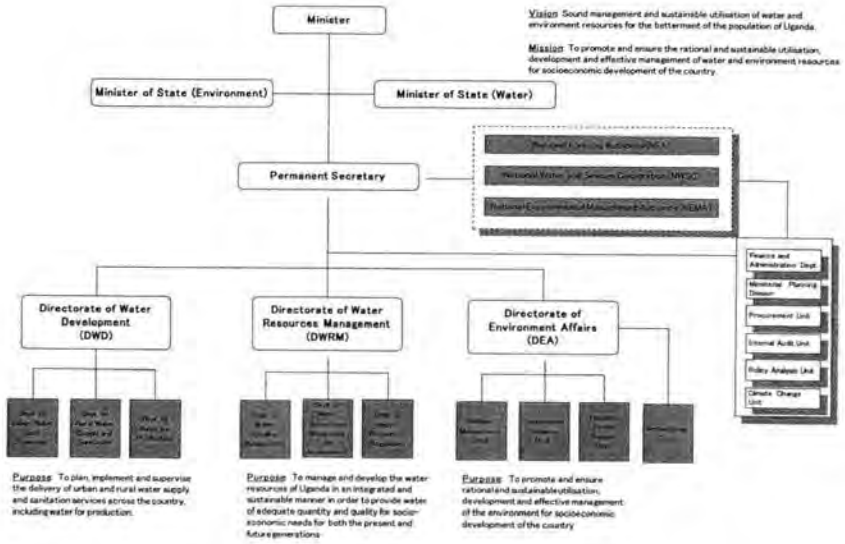
Selected Target Villages and Substitutes

No.	Village	District	Sub-county
193	Lagwel P/S	Lamwo	Padibe West
202	Langole (Keca)	Lamwo	Paloga
210	Ajaa ogala (Alere)	Lamwo	Palabek Gem
200	Lumwaka A	Lamwo	Agoro
6. Kitgum District (15 sites)			
234	Panyum "A"	Kitgum	Mucwini
241	Tacen Otinga West	Kitgum	Mucwini
229	Akiny	Kitgum	Lagoro
246	Tahworomor	Kitgum	Omiya Anyima
225	Langai	Kitgum	Kitgum Matidi
239	Yepa A	Kitgum	Mucwini
230	Gulu gwen Orum "B"	Kitgum	Lagoro
242	Winyonae-Pawiny	Kitgum	Namokora
231	Ocetiokkee Trading centre	Kitgum	Layamo
232	Paicen Central	Kitgum	Layamo
235	Ayom Olola "B"	Kitgum	Mucwini
228	Rucumico	Kitgum	Lagoro
221	Okidi central	Kitgum	Amida
240	Juba	Kitgum	Mucwini
233	Pamalo central	Kitgum	Layamo
252	Otoboi	Kitgum	Orom
253	Agora	Kitgum	Orom
243	Lakokok	Kitgum	Namokora
249	Lobale	Kitgum	Orom
7. Pader District (15 sites)			
266	Tapoyaukwee	Pader	Atanga
259	Nek-Noto	Pader	Lapul
261	Tee tworo	Pader	Puranga
292	Lapeny	Pader	Ogom (Kilak)
268	Aringo yen	Pader	Angagura (Atanga)
269	Tibai	Pader	Angagura (Atanga)
271	Parwech Lakee east	Pader	Awere
270	Atup	Pader	Awere
287	Obalo	Pader	Latanya (Acholibur)
282	Rangaleia	Pader	Pajule
263	Apwor kla	Pader	Puranga
258	Alilli	Pader	Lapul
260	Te-okuto	Pader	Puranga
290	Pagor	Pader	Ogom (Kilak)
286	Pure north	Pader	Latanya (Acholibur)
289	Dagolwato	Pader	Latanya (Acholibur)
285	Lela awoki	Pader	Latanya (Acholibur)
278	Lali	Pader	Laguti
264	Aria	Pader	Atanga

Note: The villages in the colored rows are selected for the implementation, and the others are reserved for substitutes.

Annex-4

Organization Chart of the Responsible Organization (Ministry of Water and Environment)



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Annex-5

Project Cost Estimation

Total Project Cost: Approx. JPY9.74 million

(1) Costs Covered by Japanese Side

Approx. Project Cost: JPY972.4 million

Construction of Boreholes with Hand Pump: 116 sites, Construction of Piped Water Supply Facilities: 6 sites

Items			Project Costs (Million JPY)	
Construction of Water Supply Facilities	Piped Water Supply Facilities	・Construction of Piped Water Supply Facilities: 6 RGCs (Unyama, Awere, Kochi Goma, Kitgum Matidi, Corner Kilak, Adilang) ・Facilities: Water Source Boreholes, Transmission Pipelines, Elevated Tanks, Distribution Pipelines, Public Water Stands	319.5	712.5
	Deep Boreholes with Hand Pump	・Deep Boreholes with Hand Pump: Amuru District (22 sites), Nwoya District (9 sites), Gulu District (16 sites), Kitgum District (15 sites), Lamwo District (22 sites), Pader District (15 sites), Agago District (17 nsites)	393.0	
Procurement		・Hand Pump Repair Tool Kits (73 sets) ・Truck-mounted Service Rig (1 unit)		36.6
Implementation Design, construction Supervision, and Technical Assistance				223.8

(2) Costs Covered by Ugandan Side

Costs Covered by Ugandan Side is estimated to be 55,090,000 UGX (1.7 million JPY). The costs covered by the Ugandan side are broken down in Table 5.1.1.

Costs Covered by Ugandan Side

(Unit: 1,000 UGX)

Items	Costs	Remarks
(1) Assignment of operation staff and provision of yard for service rig	55,090	DWD will assign the staff necessary for operation and maintenance of the service rig including the arrangement of the yard for storage and park.
Total	55,090	-