

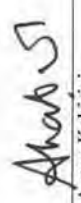
TECHNICAL NOTES
ON
THE SECOND PREPARATORY SURVEY
FOR
THE PROJECT FOR PROVISION OF IMPROVED WATER SOURCE FOR
RETURNED IDP IN ACHOLI SUB-REGION IN THE REPUBLIC OF UGANDA

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. Anur	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. Padar	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 m³/hr) though the 600

liter/hr (0.60 m³/hr) has been basically adopted considering the difficulties in exploring the groundwater in the sub-region.

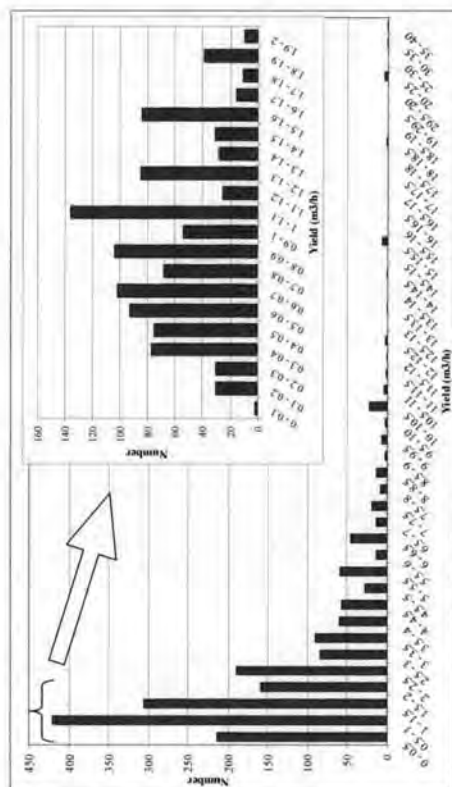


Fig. 1 Histogram of yield in National Groundwater Database in Acholi sub-region

(3) Standard Structure of borehole

The standard structure of borehole for handpump installation is as shown in Fig. 2 considering those prevalently 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 made in 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.l.***	-	60.0	-
Linyama	PWS-06-AT-1	n/a**	426340 312563	5.05	6.0	29.29	69.0	Clear
	PWS-06-AT-2	n/a**	426313 312069	10.08	a.l.***	-	-	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	-
Awere	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	-
	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	Clear. Open hole below 40m.
Adlung	PWS-08-TD-1	n/a*	475572 297241	2.16	4.5	18.49	70.0	-
	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	-	-	-
Kilgum Maudli	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	-
	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.
Corner Kilak	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	-
	PWS-15-AT-1	22976	495577 306235	2.39	3.6	41.70	70.0	Clear. Open hole below 19.6m deep.
Corner Kilak	PWS-15-AT-2	n/a**	495659 305938	2.26	1.8	40.1	49.7	Sticks blocked at 47.9m deep.
	PWS-15-AT-3	n/a**	495739 306351	4.77	0.6	15.00	70.0	Open hole below 28m deep.
	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.l.***: 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: *: 60% 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.

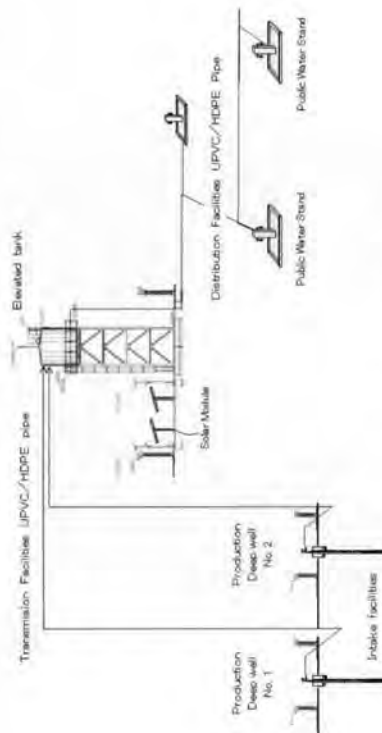


Fig. 3 Typical Piped Water Supply System

(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 HPWs

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 29 th 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 m ³ /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	
3 Double tube pipes for well development	1 set	For escaped from stuck place.
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 trucks 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. Kigum	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	
6. Pader	Motorbike	0			Share in DLG
	Pickup Truck	1	1		
	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.

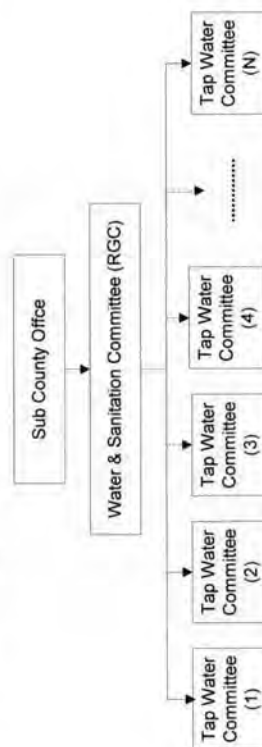


Fig. 10 Management Structure of Piped Water Supply System

- 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 Water and Sanitation Committee (WSC)	<ul style="list-style-type: none"> Coordination between DWO and community system 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 pipes and taps, and take action for repair 	Sub county chief 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) Treasurer (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.

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
Adlung	Agalo	18th November, 2011	Sub County Meeting Room
Kigum Matidi	Kigum	22nd November, 2011	Sub County Meeting Room
Awere	Gulu	23rd November, 2011	RGC trading centre
Linyana	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 options 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.





- 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.





No.	Village Name	Village No.	County	Sub-county	Parish	Access to main road	Length (km)	Width (m)	Depth (m)	Flow (m ³ /s)	Water level (m)	Score	Rank				
141	Shi County (H)	144	Anyue	Lu Fushan	monomelic	1	100	60.0	50.2	7.0	9.1	9.7	77.4	7.6	57.1	290	15
146	Yanlu	140	Anyue	Lu Fushan	intensive	1	100	60.0	50.2	9.7	77.4	9.7	77.4	7.6	57.1	291	16
145	Anyue	140	Anyue	Lu Fushan	intensive	1	100	60.0	50.2	9.7	77.4	9.7	77.4	7.6	57.1	292	17
150	Kunshan and	140	Anyue	Kunshan (Phonetic)	Anyue	1	100	47.2	60.2	18.0	32.3	11.4	67.5	3.0	85.6	325	3
152	Anyue	151	Anyue	Kunshan (Phonetic)	Cyfrindorf	1	100	57.2	60.2	18.0	32.3	11.4	67.5	3.0	85.6	326	4
153	Kunshan (Phonetic)	152	Anyue	Kunshan (Phonetic)	Chong	1	100	44.2	60.2	18.0	32.3	11.4	67.5	3.0	85.6	327	5
154	Yongli	153	Anyue	Kunshan (Phonetic)	Kad	1	100	44.2	60.2	18.0	32.3	11.4	67.5	3.0	85.6	328	6
155	Yongli	154	Anyue	Kunshan (Phonetic)	Wol	1	100	44.2	60.2	18.0	32.3	11.4	67.5	3.0	85.6	329	7
156	Yongli	155	Anyue	Kunshan (Phonetic)	Anyue	1	100	44.2	60.2	18.0	32.3	11.4	67.5	3.0	85.6	330	8
157	Yongli	156	Anyue	Kunshan (Phonetic)	Anyue	1	100	44.2	60.2	18.0	32.3	11.4	67.5	3.0	85.6	331	9
158	Yongli	157	Anyue	Kunshan (Phonetic)	Anyue	1	100	44.2	60.2	18.0	32.3	11.4	67.5	3.0	85.6	332	10
159	Yongli	158	Anyue	Kunshan (Phonetic)	Anyue	1	100	44.2	60.2	18.0	32.3	11.4	67.5	3.0	85.6	333	11
160	Yongli	159	Anyue	Kunshan (Phonetic)	Anyue	1	100	44.2	60.2	18.0	32.3	11.4	67.5	3.0	85.6	334	12
161	Yongli	160	Anyue	Kunshan (Phonetic)	Anyue	1	100	44.2	60.2	18.0	32.3	11.4	67.5	3.0	85.6	335	13
162	Yongli	161	Anyue	Kunshan (Phonetic)	Anyue	1	100	44.2	60.2	18.0	32.3	11.4	67.5	3.0	85.6	336	14
163	Yongli	162	Anyue	Kunshan (Phonetic)	Anyue	1	100	44.2	60.2	18.0	32.3	11.4	67.5	3.0	85.6	337	15
164	Yongli	163	Anyue	Kunshan (Phonetic)	Anyue	1	100	44.2	60.2	18.0	32.3	11.4	67.5	3.0	85.6	338	16
165	Yongli	164	Anyue	Kunshan (Phonetic)	Anyue	1	100	44.2	60.2	18.0	32.3	11.4	67.5	3.0	85.6	339	17
166	Yongli	165	Anyue	Kunshan (Phonetic)	Anyue	1	100	44.2	60.2	18.0	32.3	11.4	67.5	3.0	85.6	340	18
167	Yongli	166	Anyue	Kunshan (Phonetic)	Anyue	1	100	44.2	60.2	18.0	32.3	11.4	67.5	3.0	85.6	341	19
168	Yongli	167	Anyue	Kunshan (Phonetic)	Anyue	1	100	44.2	60.2	18.0	32.3	11.4	67.5	3.0	85.6	342	20
169	Yongli	168	Anyue	Kunshan (Phonetic)	Anyue	1	100	44.2	60.2	18.0	32.3	11.4	67.5	3.0	85.6	343	21
170	Yongli	169	Anyue	Kunshan (Phonetic)	Anyue	1	100	44.2	60.2	18.0	32.3	11.4	67.5	3.0	85.6	344	22
171	Yongli	170	Anyue	Kunshan (Phonetic)	Anyue	1	100	44.2	60.2	18.0	32.3	11.4	67.5	3.0	85.6	345	23
172	Yongli	171	Anyue	Kunshan (Phonetic)	Anyue	1	100	44.2	60.2	18.0	32.3	11.4	67.5	3.0	85.6	346	24
173	Yongli	172	Anyue	Kunshan (Phonetic)	Anyue	1	100	44.2	60.2	18.0	32.3	11.4	67.5	3.0	85.6	347	25
174	Yongli	173	Anyue	Kunshan (Phonetic)	Anyue	1	100	44.2	60.2	18.0	32.3	11.4	67.5	3.0	85.6	348	26
175	Yongli	174	Anyue	Kunshan (Phonetic)	Anyue	1	100	44.2	60.2	18.0	32.3	11.4	67.5	3.0	85.6	349	27
176	Yongli	175	Anyue	Kunshan (Phonetic)	Anyue	1	100	44.2	60.2	18.0	32.3	11.4	67.5	3.0	85.6	350	28
177	Yongli	176	Anyue	Kunshan (Phonetic)	Anyue	1	100	44.2	60.2	18.0	32.3	11.4	67.5	3.0	85.6	351	29
178	Yongli	177	Anyue	Kunshan (Phonetic)	Anyue	1	100	44.2	60.2	18.0	32.3	11.4	67.5	3.0	85.6	352	30
179	Yongli	178	Anyue	Kunshan (Phonetic)	Anyue	1	100	44.2	60.2	18.0	32.3	11.4	67.5	3.0	85.6	353	31
180	Yongli	179	Anyue	Kunshan (Phonetic)	Anyue	1	100	44.2	60.2	18.0	32.3	11.4	67.5	3.0	85.6	354	32
181	Yongli	180	Anyue	Kunshan (Phonetic)	Anyue	1	100	44.2	60.2	18.0	32.3	11.4	67.5	3.0	85.6	355	33
182	Yongli	181	Anyue	Kunshan (Phonetic)	Anyue	1	100	44.2	60.2	18.0	32.3	11.4	67.5	3.0	85.6	356	34
183	Yongli	182	Anyue	Kunshan (Phonetic)	Anyue	1	100	44.2	60.2	18.0	32.3	11.4	67.5	3.0	85.6	357	35
184	Yongli	183	Anyue	Kunshan (Phonetic)	Anyue	1	100	44.2	60.2	18.0	32.3	11.4	67.5	3.0	85.6	358	36
185	Yongli	184	Anyue	Kunshan (Phonetic)	Anyue	1	100	44.2	60.2	18.0	32.3	11.4	67.5	3.0	85.6	359	37
186	Yongli	185	Anyue	Kunshan (Phonetic)	Anyue	1	100	44.2	60.2	18.0	32.3	11.4	67.5	3.0	85.6	360	38
187	Yongli	186	Anyue	Kunshan (Phonetic)	Anyue	1	100	44.2	60.2	18.0	32.3	11.4	67.5	3.0	85.6	361	39
188	Yongli	187	Anyue	Kunshan (Phonetic)	Anyue	1	100	44.2	60.2	18.0	32.3	11.4	67.5	3.0	85.6	362	40
189	Yongli	188	Anyue	Kunshan (Phonetic)	Anyue	1	100	44.2	60.2	18.0	32.3	11.4	67.5	3.0	85.6	363	41
190	Yongli	189	Anyue	Kunshan (Phonetic)	Anyue	1	100	44.2	60.2	18.0	32.3	11.4	67.5	3.0	85.6	364	42
191	Yongli	190	Anyue	Kunshan (Phonetic)	Anyue	1	100	44.2	60.2	18.0	32.3	11.4	67.5	3.0	85.6	365	43
192	Yongli	191	Anyue	Kunshan (Phonetic)	Anyue	1	100	44.2	60.2	18.0	32.3	11.4	67.5	3.0	85.6	366	44
193	Yongli	192	Anyue	Kunshan (Phonetic)	Anyue	1	100	44.2	60.2	18.0	32.3	11.4	67.5	3.0	85.6	367	45
194	Yongli	193	Anyue	Kunshan (Phonetic)	Anyue	1	100	44.2	60.2	18.0	32.3	11.4	67.5	3.0	85.6	368	46
195	Yongli	194	Anyue	Kunshan (Phonetic)	Anyue	1	100	44.2	60.2	18.0	32.3	11.4	67.5	3.0	85.6	369	47
196	Yongli	195	Anyue	Kunshan (Phonetic)	Anyue	1	100	44.2	60.2	18.0	32.3	11.4	67.5	3.0	85.6	370	48
197	Yongli	196	Anyue	Kunshan (Phonetic)	Anyue	1	100	44.2	60.2	18.0	32.3	11.4	67.5	3.0	85.6	371	49
198	Yongli	197	Anyue	Kunshan (Phonetic)	Anyue	1	100	44.2	60.2	18.0	32.3	11.4	67.5	3.0	85.6	372	50
199	Yongli	198	Anyue	Kunshan (Phonetic)	Anyue	1	100	44.2	60.2	18.0	32.3	11.4	67.5	3.0	85.6	373	51
200	Yongli	199	Anyue	Kunshan (Phonetic)	Anyue	1	100	44.2	60.2	18.0	32.3	11.4	67.5	3.0	85.6	374	52
201	Yongli	200	Anyue	Kunshan (Phonetic)	Anyue	1	100	44.2	60.2	18.0	32.3	11.4	67.5	3.0	85.6	375	53
202	Yongli	201	Anyue	Kunshan (Phonetic)	Anyue	1	100	44.2	60.2	18.0	32.3	11.4	67.5	3.0	85.6	376	54
203	Yongli	202	Anyue	Kunshan (Phonetic)	Anyue	1	100	44.2	60.2	18.0	32.3	11.4	67.5	3.0	85.6	377	55
204	Yongli	203	Anyue	Kunshan (Phonetic)	Anyue	1	100	44.2	60.2	18.0	32.3	11.4	67.5	3.0	85.6	378	56
205	Yongli	204	Anyue	Kunshan (Phonetic)	Anyue	1	100	44.2	60.2	18.0	32.3	11.4	67.5	3.0	85.6	379	57
206	Yongli	205	Anyue	Kunshan (Phonetic)	Anyue	1	100	44.2	60.2	18.0	32.3	11.4	67.5	3.0	85.6	380	58
207	Yongli	206	Anyue	Kunshan (Phonetic)	Anyue	1	100	44.2	60.2	18.0	32.3	11.4	67.5	3.0	85.6	381	59
208	Yongli	207	Anyue	Kunshan (Phonetic)	Anyue	1	100	44.2	60.2	18.0	32.3	11.4	67.5	3.0	85.6	382	60
209	Yongli	208	Anyue	Kunshan (Phonetic)	Anyue	1	100	44.2	60.2	18.0	32.3	11.4	67.5	3.0	85.6	383	61
210	Yongli	209	Anyue	Kunshan (Phonetic)	Anyue	1	100	44.2	60.2	18.0	32.3	11.4	67.5	3.0	85.6	384	62
211	Yongli	210	Anyue	Kunshan (Phonetic)	Anyue	1	100	44.2	60.2	18.0	32.3	11.4	67.5	3.0	85.6	385	63
212	Yongli	211	Anyue	Kunshan (Phonetic)	Anyue	1	100	44.2	60.2	18.0	32.3	11.4	67.5	3.0	85.6	386	64
213	Yongli	212	Anyue	Kunshan (Phonetic)	Anyue	1	100	44.2	60.2	18.0	32.3	11.4	67.5	3.0	85.6	387	65
214	Yongli	213	Anyue	Kunshan (Phonetic)	Anyue	1	100	44.2	60.2	18.0	32.3	11.4	67.5	3.0	85.6	388	66
215	Yongli	214	Anyue	Kunshan (Phonetic)	Anyue	1	100	44.2	60.2	18.0	32.3	11.4	67.5	3.0	85.6	389	67
216	Yongli	215	Anyue	Kunshan (Phonetic)	Anyue	1	100	44.2	60.2	18.0	32.3	11.4	67.5	3.0	85.6	390	68
217	Yongli	216	Anyue	Kunshan (Phonetic)	Anyue	1	100	44.2	60.2	18.0	32.3	11.4	67.5	3.0	85.6	391	69
218	Yongli	217	Anyue	Kunshan (Phonetic)	Anyue	1	100	44.2	60.2	18.0	32.3	11.4	67.5	3.0	85.6	392	70
219	Yongli	218	Anyue	Kunshan (Phonetic)	Anyue	1	100	44.2	60.2	18.0	32.3	11.4	67.5	3.0	85.6	393	71
220	Yongli	219	Anyue	Kunshan (Phonetic)	Anyue	1	100	44.2	60.2	18.0	32.3	11.4	67.5	3.0	85.6	394	72
221	Yongli	220	Anyue	Kunshan (Phonetic)	Anyue	1	100	44.2	60.2	18.0	32.3	11.4	67.5	3.0	85.6	395	73
222	Yongli	221	Anyue	Kunshan (Phonetic)	Anyue	1	100	44.2	60.2	18.0	32.3	11.4	67.5	3.0	85.6	396	74
223	Yongli	222	Anyue	Kunshan (Phonetic)	Anyue	1	100	44.2	60.2	18.0	32.3	11.4	67.5	3.0	85.6	397	75
224	Yongli	223	Anyue	Kunshan (Phonetic)	Anyue	1	100	44.2	60.2	18.0	32.3	11.4	67.5	3.0	85.6	398	76
225	Yongli	224	Anyue	Kunshan (Phonetic)	Anyue	1	100	44.2	60.2	18.0	32.3	11.4	67.5	3.0	85.6	399	77
226	Yongli	225	Anyue	Kunshan (Phonetic)	Anyue	1	100	44.2	60.2	18.0	32.3	11.4	67.5	3.0	85.6	400	78
227	Yongli	226	Anyue	Kunshan (Phonetic)	Anyue	1	100	44.2	60.2	18.0	32.3	11.4	67.5	3.0	85.6	401	79
228	Yongli	227	Anyue	Kunshan (Phonetic)													

No.	Village	Village No.	County	Sub-county	Parish	Location	Access Condition	Length (km)	Surface	Depth	Source	Yield (m ³ /h)	Notes	Total Rank	
1	Thiba Land	1	Amara	Amara	Amara	Thiba	100	44.0	0.1	1.2	6.5	3.6	5.3	27	20
2	Thiba North	4	Amara	Amara	Amara	Thiba	100	44.0	0.1	1.2	6.5	3.6	5.3	27	13
3	Thiba North	3	Amara	Amara	Amara	Thiba	100	44.0	0.1	1.2	6.5	3.6	5.3	27	1
4	Thiba North	5	Amara	Amara	Amara	Thiba	100	44.0	0.1	1.2	6.5	3.6	5.3	27	18
5	Thiba North	8	Amara	Amara	Amara	Thiba	100	44.0	0.1	1.2	6.5	3.6	5.3	27	1
6	Thiba North	9	Amara	Amara	Amara	Thiba	100	44.0	0.1	1.2	6.5	3.6	5.3	27	18
7	Thiba North	10	Amara	Amara	Amara	Thiba	100	44.0	0.1	1.2	6.5	3.6	5.3	27	18
8	Thiba North	11	Amara	Amara	Amara	Thiba	100	44.0	0.1	1.2	6.5	3.6	5.3	27	18
9	Thiba North	12	Amara	Amara	Amara	Thiba	100	44.0	0.1	1.2	6.5	3.6	5.3	27	18
10	Thiba North	13	Amara	Amara	Amara	Thiba	100	44.0	0.1	1.2	6.5	3.6	5.3	27	18
11	Thiba North	14	Amara	Amara	Amara	Thiba	100	44.0	0.1	1.2	6.5	3.6	5.3	27	18
12	Thiba North	15	Amara	Amara	Amara	Thiba	100	44.0	0.1	1.2	6.5	3.6	5.3	27	18
13	Thiba North	16	Amara	Amara	Amara	Thiba	100	44.0	0.1	1.2	6.5	3.6	5.3	27	18
14	Thiba North	17	Amara	Amara	Amara	Thiba	100	44.0	0.1	1.2	6.5	3.6	5.3	27	18
15	Thiba North	18	Amara	Amara	Amara	Thiba	100	44.0	0.1	1.2	6.5	3.6	5.3	27	18
16	Thiba North	19	Amara	Amara	Amara	Thiba	100	44.0	0.1	1.2	6.5	3.6	5.3	27	18
17	Thiba North	20	Amara	Amara	Amara	Thiba	100	44.0	0.1	1.2	6.5	3.6	5.3	27	18
18	Thiba North	21	Amara	Amara	Amara	Thiba	100	44.0	0.1	1.2	6.5	3.6	5.3	27	18
19	Thiba North	22	Amara	Amara	Amara	Thiba	100	44.0	0.1	1.2	6.5	3.6	5.3	27	18
20	Thiba North	23	Amara	Amara	Amara	Thiba	100	44.0	0.1	1.2	6.5	3.6	5.3	27	18
21	Thiba North	24	Amara	Amara	Amara	Thiba	100	44.0	0.1	1.2	6.5	3.6	5.3	27	18
22	Thiba North	25	Amara	Amara	Amara	Thiba	100	44.0	0.1	1.2	6.5	3.6	5.3	27	18
23	Thiba North	26	Amara	Amara	Amara	Thiba	100	44.0	0.1	1.2	6.5	3.6	5.3	27	18
24	Thiba North	27	Amara	Amara	Amara	Thiba	100	44.0	0.1	1.2	6.5	3.6	5.3	27	18
25	Thiba North	28	Amara	Amara	Amara	Thiba	100	44.0	0.1	1.2	6.5	3.6	5.3	27	18
26	Thiba North	29	Amara	Amara	Amara	Thiba	100	44.0	0.1	1.2	6.5	3.6	5.3	27	18
27	Thiba North	30	Amara	Amara	Amara	Thiba	100	44.0	0.1	1.2	6.5	3.6	5.3	27	18
28	Thiba North	31	Amara	Amara	Amara	Thiba	100	44.0	0.1	1.2	6.5	3.6	5.3	27	18
29	Thiba North	32	Amara	Amara	Amara	Thiba	100	44.0	0.1	1.2	6.5	3.6	5.3	27	18
30	Thiba North	33	Amara	Amara	Amara	Thiba	100	44.0	0.1	1.2	6.5	3.6	5.3	27	18
31	Thiba North	34	Amara	Amara	Amara	Thiba	100	44.0	0.1	1.2	6.5	3.6	5.3	27	18
32	Thiba North	35	Amara	Amara	Amara	Thiba	100	44.0	0.1	1.2	6.5	3.6	5.3	27	18
33	Thiba North	36	Amara	Amara	Amara	Thiba	100	44.0	0.1	1.2	6.5	3.6	5.3	27	18
34	Thiba North	37	Amara	Amara	Amara	Thiba	100	44.0	0.1	1.2	6.5	3.6	5.3	27	18
35	Thiba North	38	Amara	Amara	Amara	Thiba	100	44.0	0.1	1.2	6.5	3.6	5.3	27	18
36	Thiba North	39	Amara	Amara	Amara	Thiba	100	44.0	0.1	1.2	6.5	3.6	5.3	27	18
37	Thiba North	40	Amara	Amara	Amara	Thiba	100	44.0	0.1	1.2	6.5	3.6	5.3	27	18
38	Thiba North	41	Amara	Amara	Amara	Thiba	100	44.0	0.1	1.2	6.5	3.6	5.3	27	18
39	Thiba North	42	Amara	Amara	Amara	Thiba	100	44.0	0.1	1.2	6.5	3.6	5.3	27	18
40	Thiba North	43	Amara	Amara	Amara	Thiba	100	44.0	0.1	1.2	6.5	3.6	5.3	27	18
41	Thiba North	44	Amara	Amara	Amara	Thiba	100	44.0	0.1	1.2	6.5	3.6	5.3	27	18
42	Thiba North	45	Amara	Amara	Amara	Thiba	100	44.0	0.1	1.2	6.5	3.6	5.3	27	18
43	Thiba North	46	Amara	Amara	Amara	Thiba	100	44.0	0.1	1.2	6.5	3.6	5.3	27	18
44	Thiba North	47	Amara	Amara	Amara	Thiba	100	44.0	0.1	1.2	6.5	3.6	5.3	27	18
45	Thiba North	48	Amara	Amara	Amara	Thiba	100	44.0	0.1	1.2	6.5	3.6	5.3	27	18
46	Thiba North	49	Amara	Amara	Amara	Thiba	100	44.0	0.1	1.2	6.5	3.6	5.3	27	18
47	Thiba North	50	Amara	Amara	Amara	Thiba	100	44.0	0.1	1.2	6.5	3.6	5.3	27	18
48	Thiba North	51	Amara	Amara	Amara	Thiba	100	44.0	0.1	1.2	6.5	3.6	5.3	27	18
49	Thiba North	52	Amara	Amara	Amara	Thiba	100	44.0	0.1	1.2	6.5	3.6	5.3	27	18
50	Thiba North	53	Amara	Amara	Amara	Thiba	100	44.0	0.1	1.2	6.5	3.6	5.3	27	18
51	Thiba North	54	Amara	Amara	Amara	Thiba	100	44.0	0.1	1.2	6.5	3.6	5.3	27	18
52	Thiba North	55	Amara	Amara	Amara	Thiba	100	44.0	0.1	1.2	6.5	3.6	5.3	27	18
53	Thiba North	56	Amara	Amara	Amara	Thiba	100	44.0	0.1	1.2	6.5	3.6	5.3	27	18
54	Thiba North	57	Amara	Amara	Amara	Thiba	100	44.0	0.1	1.2	6.5	3.6	5.3	27	18
55	Thiba North	58	Amara	Amara	Amara	Thiba	100	44.0	0.1	1.2	6.5	3.6	5.3	27	18
56	Thiba North	59	Amara	Amara	Amara	Thiba	100	44.0	0.1	1.2	6.5	3.6	5.3	27	18
57	Thiba North	60	Amara	Amara	Amara	Thiba	100	44.0	0.1	1.2	6.5	3.6	5.3	27	18
58	Thiba North	61	Amara	Amara	Amara	Thiba	100	44.0	0.1	1.2	6.5	3.6	5.3	27	18
59	Thiba North	62	Amara	Amara	Amara	Thiba	100	44.0	0.1	1.2	6.5	3.6	5.3	27	18
60	Thiba North	63	Amara	Amara	Amara	Thiba	100	44.0	0.1	1.2	6.5	3.6	5.3	27	18
61	Thiba North	64	Amara	Amara	Amara	Thiba	100	44.0	0.1	1.2	6.5	3.6	5.3	27	18
62	Thiba North	65	Amara	Amara	Amara	Thiba	100	44.0	0.1	1.2	6.5	3.6	5.3	27	18
63	Thiba North	66	Amara	Amara	Amara	Thiba	100	44.0	0.1	1.2	6.5	3.6	5.3	27	18
64	Thiba North	67	Amara	Amara	Amara	Thiba	100	44.0	0.1	1.2	6.5	3.6	5.3	27	18
65	Thiba North	68	Amara	Amara	Amara	Thiba	100	44.0	0.1	1.2	6.5	3.6	5.3	27	18
66	Thiba North	69	Amara	Amara	Amara	Thiba	100	44.0	0.1	1.2	6.5	3.6	5.3	27	18
67	Thiba North	70	Amara	Amara	Amara	Thiba	100	44.0	0.1	1.2	6.5	3.6	5.3	27	18
68	Thiba North	71	Amara	Amara	Amara	Thiba	100	44.0	0.1	1.2	6.5	3.6	5.3	27	18
69	Thiba North	72	Amara	Amara	Amara	Thiba	100	44.0	0.1	1.2	6.5	3.6	5.3	27	18
70	Thiba North	73	Amara	Amara	Amara	Thiba	100	44.0	0.1	1.2	6.5	3.6	5.3	27	18
71	Thiba North	74	Amara	Amara	Amara	Thiba	100	44.0	0.1	1.2	6.5	3.6	5.3	27	18
72	Thiba North	75	Amara	Amara	Amara	Thiba	100	44.0	0.1	1.2	6.5	3.6	5.3	27	18
73	Thiba North	76	Amara	Amara	Amara	Thiba	100	44.0	0.1	1.2	6.5	3.6	5.3	27	18
74	Thiba North	77	Amara	Amara	Amara	Thiba	100	44.0	0.1	1.2	6.5	3.6	5.3	27	18
75	Thiba North	78	Amara	Amara	Amara	Thiba	100	44.0	0.1	1.2	6.5	3.6	5.3	27	18
76	Thiba North	79	Amara	Amara	Amara	Thiba	100	44.0	0.1	1.2	6.5	3.6	5.3	27	18
77	Thiba North	80	Amara	Amara	Amara	Thiba	100	44.0	0.1	1.2	6.5	3.6	5.3	27	18
78	Thiba North	81	Amara	Amara	Amara	Thiba	100	44.0	0.1	1.2	6.5	3.6	5.3	27	18
79	Thiba North	82	Amara	Amara	Amara	Thiba	100	44.0	0.1	1.2	6.5	3.6	5.3	27	18
80	Thiba North	83	Amara	Amara	Amara	Thiba	100	44.0	0.1	1.2	6.5	3.6	5.3	27	18
81	Thiba North	84	Amara	Amara	Amara	Thiba	100	44.0	0.1	1.2	6.5	3.6	5.3	27	18
82	Thiba North	85	Amara	Amara	Amara	Thiba	100	44.0	0.1	1.2	6.5	3.6	5.3	27	18
83	Thiba North	86	Amara	Amara	Amara	Thiba	100	44.0	0.1	1.2	6.5	3.6	5.3	27	18
84	Thiba North	87	Amara	Amara	Amara	Thiba	100	44.0	0.1	1.2	6.5	3.6	5.3	27	18
85	Thiba North	88	Amara	Amara	Amara	Thiba	100	44.0	0.1	1.2	6.5	3.6	5.3	27	18
86	Thiba North	89	Amara	Amara	Amara	Thiba	100	44.0	0.1	1.2	6.5	3.6	5.3	27	18
87	Thiba North	90	Amara	Amara	Amara	Thiba	100	44.0	0.1	1.2	6.5	3.6	5.3	27	18
88	Thiba North	91	Amara	Amara	Amara	Thiba	100	44.0	0.1	1.2	6.5	3.6	5.3	27	18
89	Thiba North	92	Amara	Amara	Amara	Thiba	100	44.0	0.1	1.2	6.5	3.6	5.3	27	18
90	Thiba North	93	Amara	Amara	Amara	Thiba	100	44.0	0.1	1.2	6.5	3.6	5.3	27	18
91	Thiba North	94	Amara	Amara	Amara	Thiba	100	44.0	0.1	1.2	6.5	3.6	5.3	27	18
92	Thiba North	95	Amara	Amara	Amara	Thiba	100	44.0	0.1	1.2	6.5	3.6	5.3	27	18
93	Thiba North	96	Amara	Amara	Amara	Thiba	100	44.0	0.1	1.2	6.5	3.6	5.3	27	18
94	Thiba North	97	Amara	Amara	Amara	Thiba	100	44.0	0.1	1.2	6.5	3.6	5.3	27	18
95	Thiba North	98	Amara	Amara	Amara	Thiba	100	44.0	0.1	1.2	6.5	3.6	5.3	27	18
96	Thiba North	99	Amara	Amara	Amara	Thiba	100	44.0	0.1	1.2	6.5	3.6	5.3	27	18
97	Thiba North	100	Amara	Amara	Amara	Thiba	100	44.0	0.1	1.2	6.5	3.6	5.3	27	18
98	Thiba North	101	Amara	Amara	Amara	Thiba	100	44.0	0.1	1.2	6.5	3.6	5.3	27	18
99	Thiba North	102	Amara	Amara											

[illegible][illegible]

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		
				Complete	Few	Missing tools
a. Gulu District						
Unyama	4	3	1		1	
Paicho	4	4	1		1	
Palaro	3	3	2		2	
Patiko	3	3	2		2	
Bobbi	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						
Bungatira	7	7	2		0	
Lakwana	4	4	2		0	
Municipal						
4	1	0		0		
4	0	0		0		
4	0	0		0		
4	0	0		0		
Total	70	55	22	0	16	0

Remarks: Twenty (20) standard tool kits will be provided by the DWIO in December 2011.

Remarks: Twenty (20) standard tool kits will be provided by the DWO in December 2011.

b. Amuru District						
Attik	8	8	1			1
Pabho	6	6	1			1
Lamogi	8	8	0			0
Amuru	6	6	0			0
Total	28	28	2	0	0	2

Remarks: Amuru sub county includes one Game Reserve Parish

c. Nwoya District						
Alero	7	6	2	2		
Anka	6	5	1	1		
Koch Goma	7	2	2	2		
Puronga	6	2	2	2		
Total	26	15	7	7	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 Madi	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
OmyaAnyima	4	9	1		1	
Orom	8	11	1		1	
Awang	3	11	1		1	
K.T.C	7	8	1		Missing	3
Total	53	112	8	0	5	1

e. Lamwo District						
Palabek Ogili	4	8	3			3
Padibe East	4	6	2			2
Madi-opet	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	9	26

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			
Adchthur	4	5	0			
Pader TC	3	6	2			
Total	52	80	8	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			
Adliang	7	3	2			2
Paimol	4	3	0			
Omya Paewa	4	2	0			
Wol	8	2	0			
Katongo TC	5	0	0			
Lamiyo	4	4	0			
Omat	4	5	0			
Patongo TC	4	2	0			
Agago TC	3	1	0			
Lapono	5	0	0			

2) Special Tool Kit

a. Gulu District						
Unyama	4	3	0			
Paicho	4	4	0			
Palaro	3	3	0			
Patiko	3	3	0			
Bobbi	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			
Bar-dege	4	1	0			
Laroro	4	0	0			
Layibi	4	0	0			
Pece	4	0	0			
Total	70	55	0	0	0	0

b. Amuru District

Attik	8	8	1			1
Pabho	6	6	1			1
Lamogi	8	8	0			
Amuru	6	6	0			
Total	28	28	2	0	0	2

b. Nwoya District

Attik	8	8	1			1
Pabho	6	6	1			1
Lamogi	8	8	0			
Amuru	6	6	0			
Total	28	28	2	0	0	2

Sub-county	Number of Parish	Number of HPMS	Number of Tool Boxes	Condition of Standard Tool Kit			
				Complete	Few	Several	Many
Alero	7	6	2	2			
Anaka	6	5	1	1			
Koch Goma	7	2	2	2			
Purunga	6	2	2	2			
Total	26	15	7	7	0	0	0
d. Kigum District							
Amida	6	18	0				
Kigum Mandi	4	9	0				
Lagoro	4	10	0				
Layamo	4	10	0				
Mucwini	9	18	0				
Namokora	4	8	0				
OmayaAnyima	4	9	0				
Orom	8	11	0				
Akwang K.T.C	3	11	0	0	0	0	0
Total	53	112	0	0	0	0	0
e. Lamwo District							
Palabek Oghi	4	8	1				1
Padibe East	4	6	2				2
Madi-opci	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	0	0	0	3
Total	44	115	3	0	0	0	3
f. Pader District							
Pader (-Kilik	4	5	2		2		
Lapul	4	6	1				1
Purunga	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		
Achulbur Pader TC	4	5	2	0	0	0	2
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				
Omaya Paswa	4	2	0				
Wol	8	2	0				
Katongo TC	5	0	0	0	0	0	0
Lamiyo	4	4	0	0	0	0	0
Omat	4	5	0	0	0	0	0
Patongo TC	4	2	0	0	0	0	0
Agago TC	3	1	0	0	0	0	0
Lapono	5	0	0	0	0	0	0

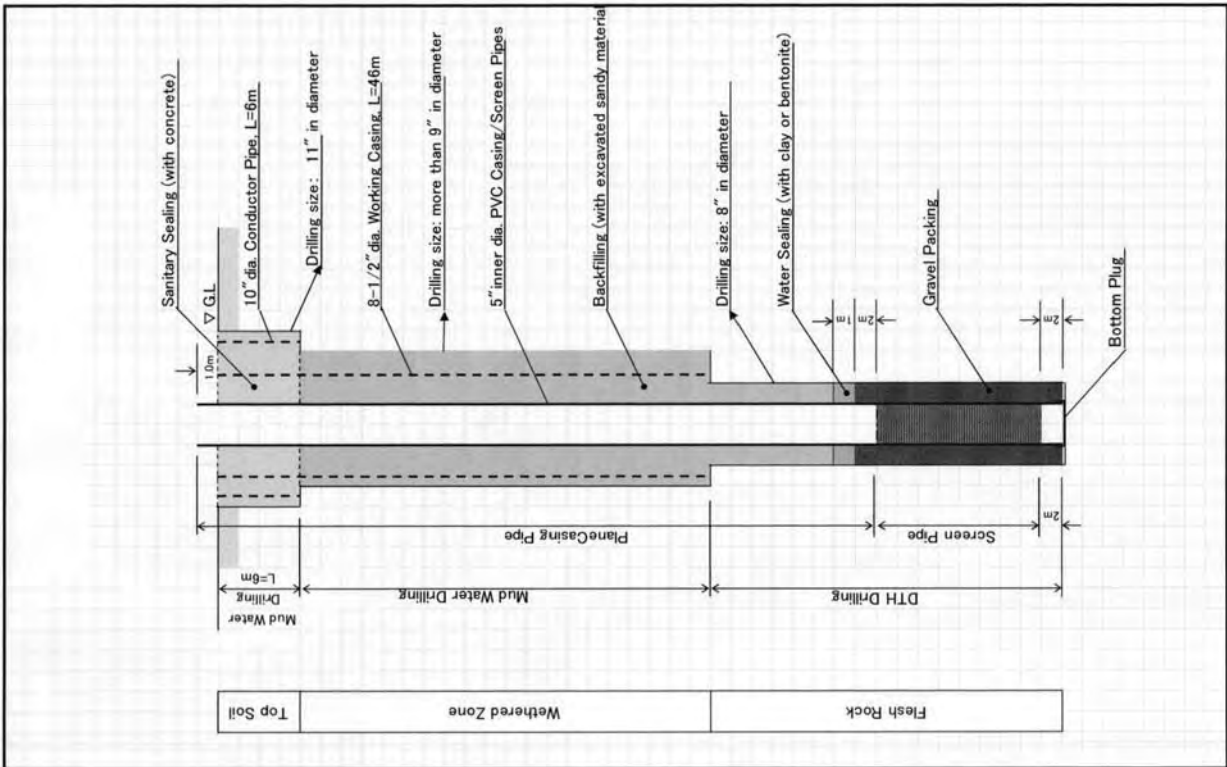
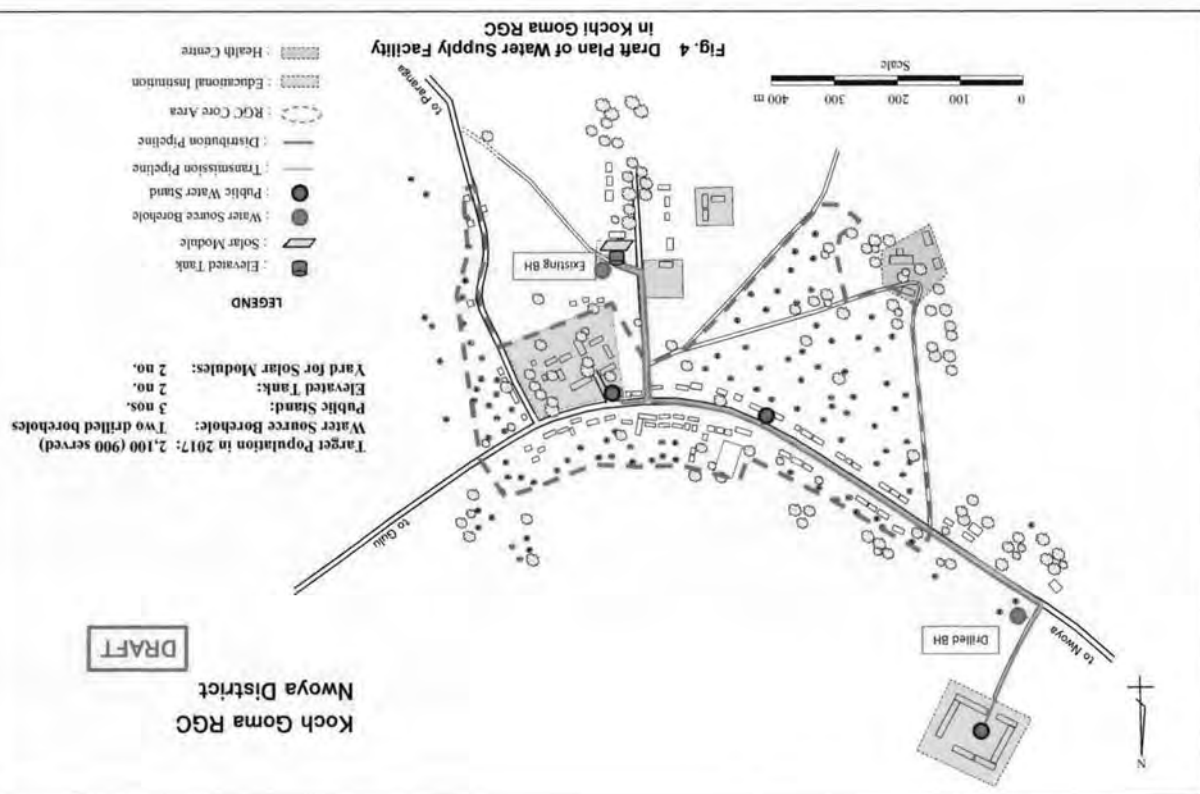
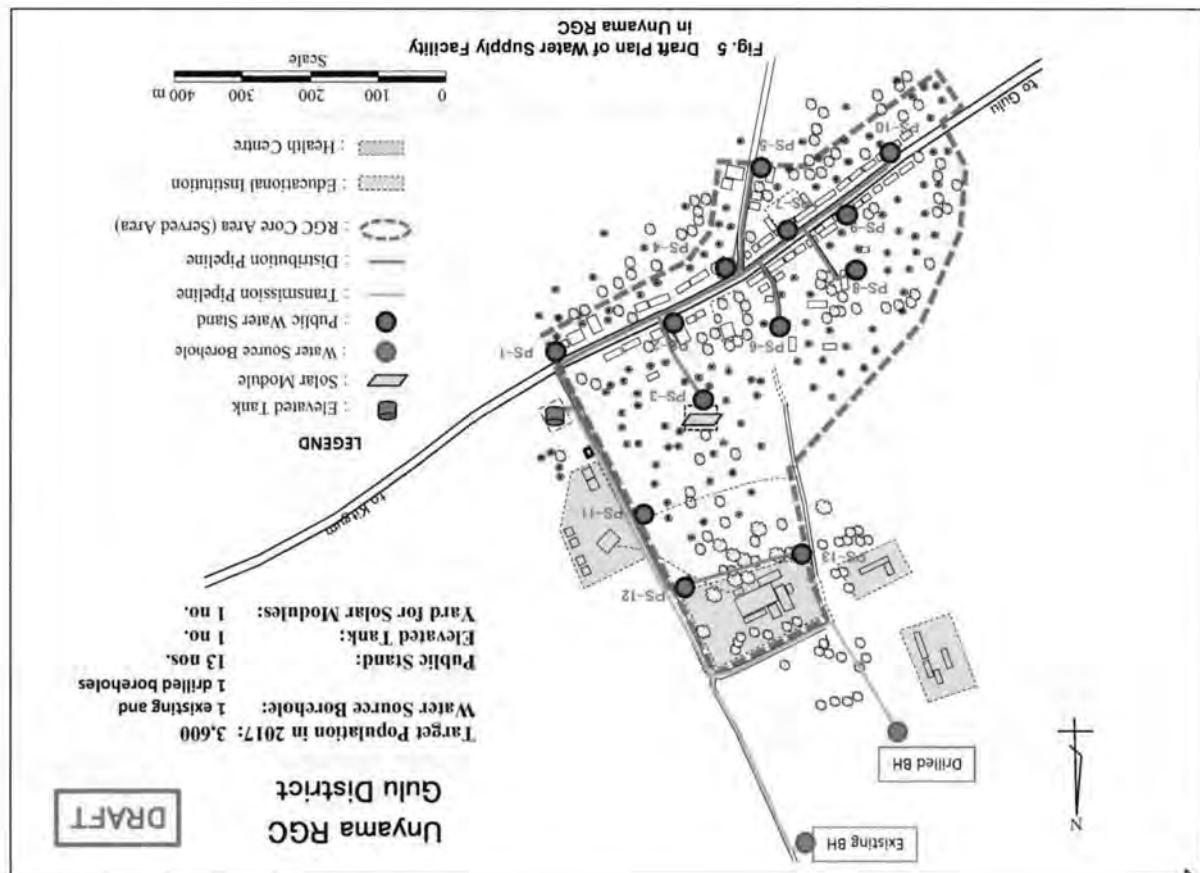


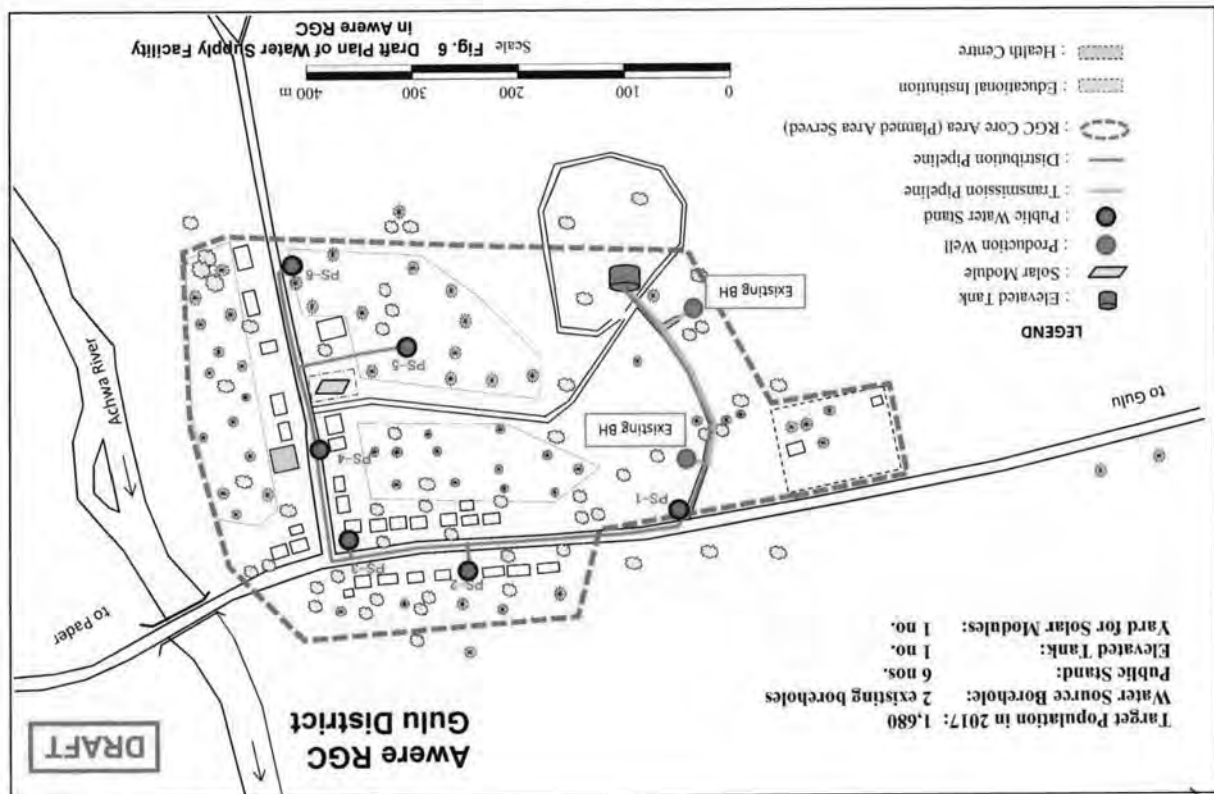
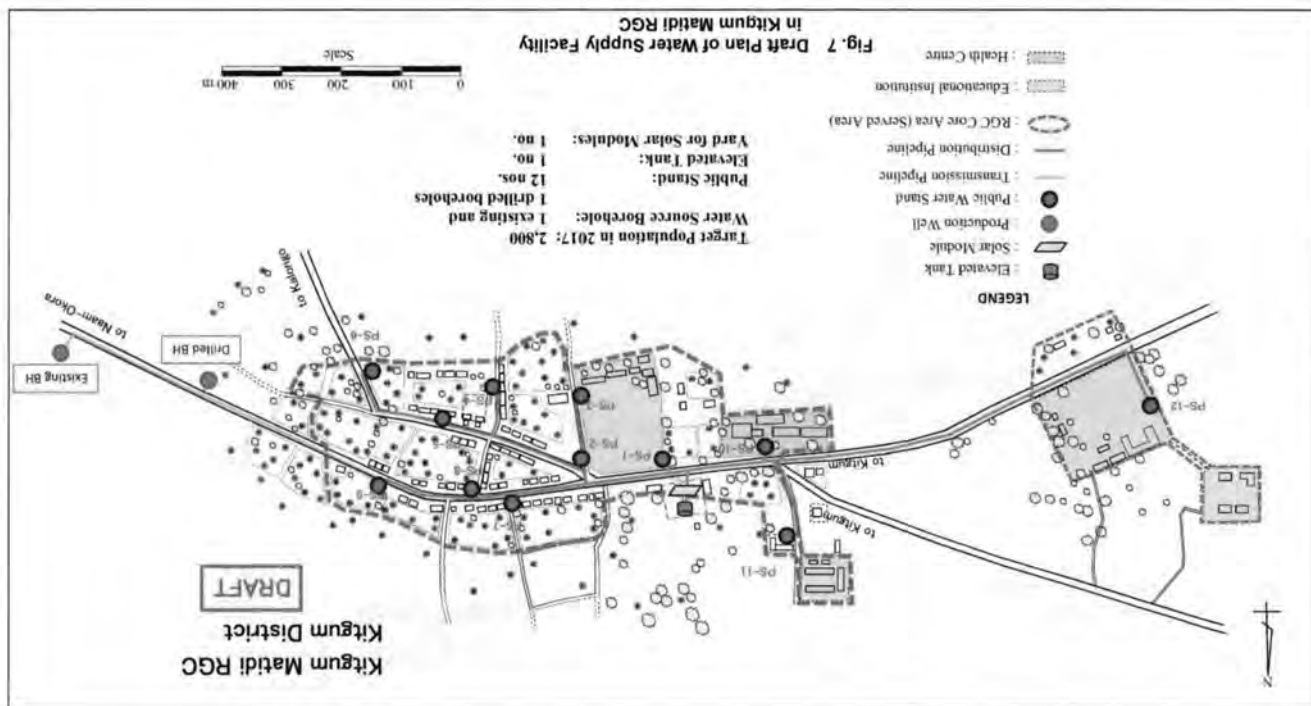
Fig. 2 Standard Borehole Structure

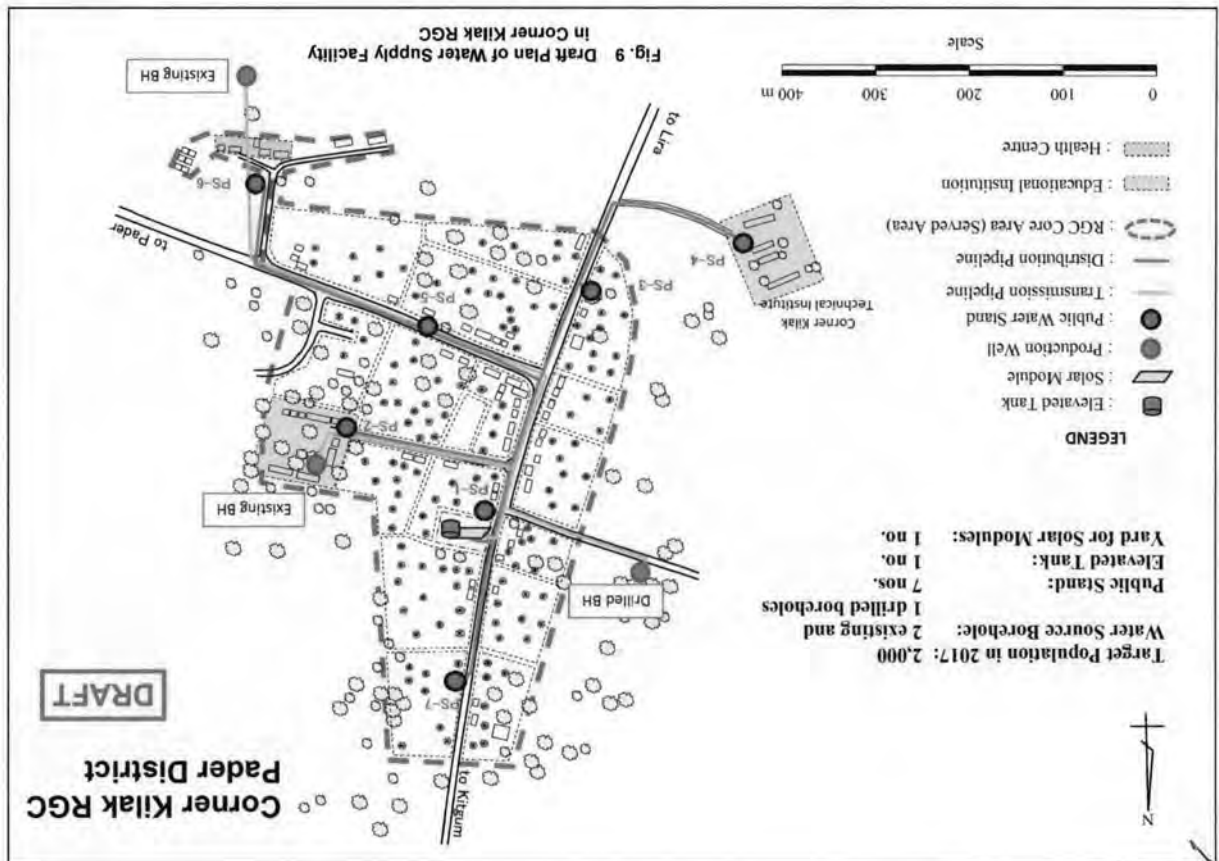
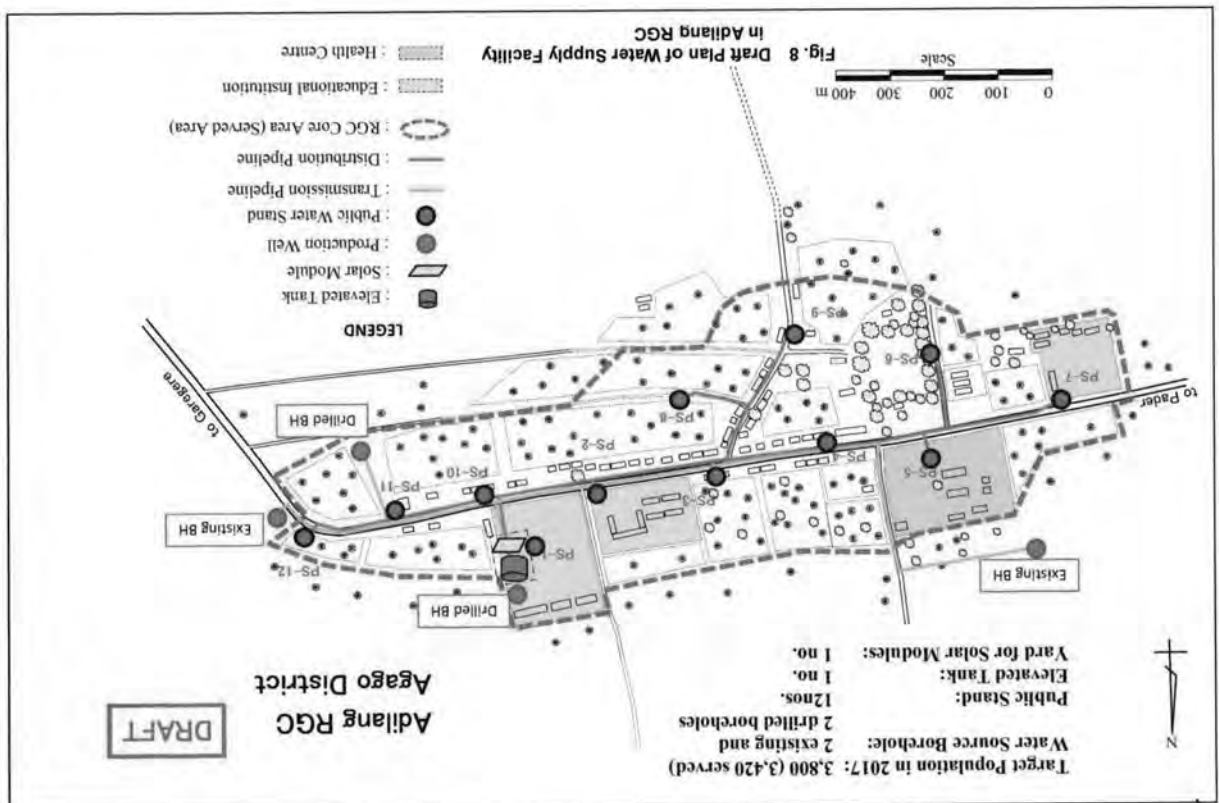


- 20 -



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The Project for Provision of Improved Water Source for Returned IDP in Acholi Sub-Region
Form of Quality Control

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

Name of RGC: <i>Kochi Goma</i>	District: <i>Nakoty</i>
Reference No.: <i>PWS-D3</i>	County:
N:	Sub-County:
E:	
Working space: <i>Drilling: 20m x 20m approx.</i> <i>Aquifer Tests: 20m x 10m approx.</i>	

Confirmed by:

Firms and organizations	Name	Signature
Contractor	<i>KISTIRISA CHARIN</i> <i>Wadamba Silver</i>	<i>[Signature]</i>
Consultant	<i>TBC.</i> <i>Inko Hamada</i> <i>Hydrogeologist</i>	<i>[Signature]</i>
District Water office	<i>JOOK ROBERT</i>	<i>[Signature]</i>
Sub-county LCII C/P	<i>OKWILL JOHN BOSCU</i>	<i>[Signature]</i>
RGC office		
Land load	<i>BINAYO OGABA-</i>	<i>[Signature]</i>

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

Remarks:

Lands for Test drilling point PWS-03-1, Aquifer tests points (2 sites) are belong to sub-county office.

Land for Test drilling point PWS-03-2 is belong to Mr. Binayo Ogaba.

AI-1

Annex 1 Signed Statement on Land Use for Project Facilities

The Project for Provision 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

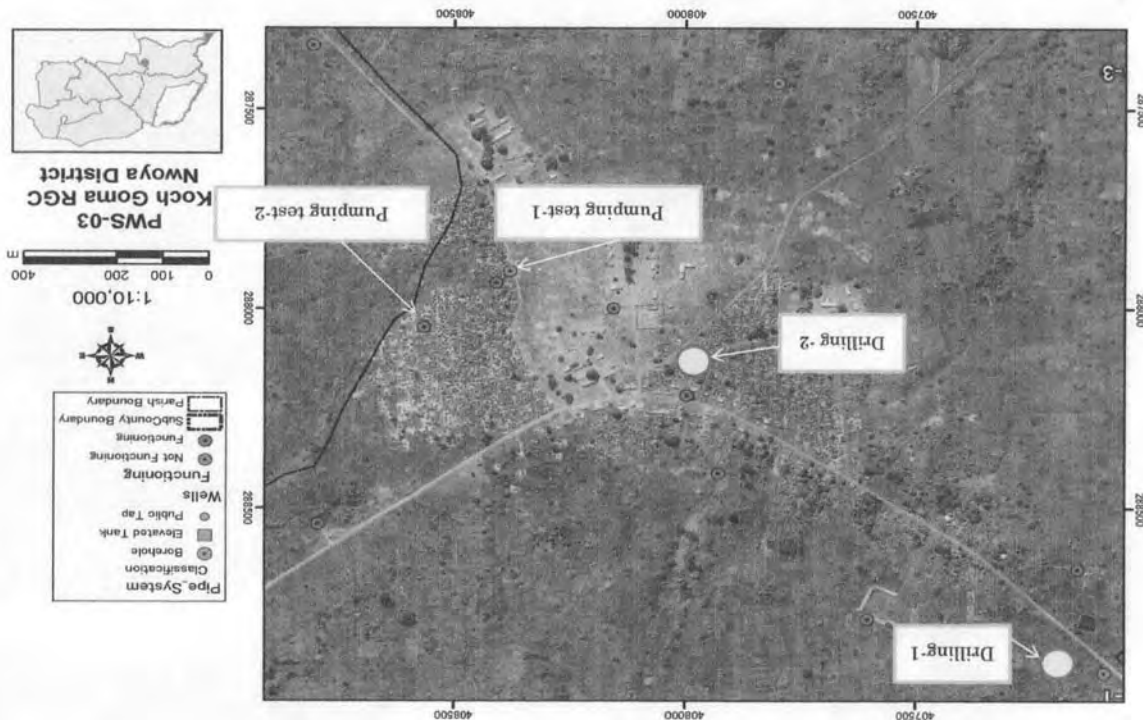
Name of RGC: Wanyama	District: Gulu
Parish No.: RWS-06	County:
N:	Sub-County:
E:	
Working space: Aquifer Tests: 20m x 10m Drilling: 20m x 20m	

Confirmed by:

Firms and organizations	Name	Signature
Contractor (FELS)	Wanyama Sub-County Hydrogeologist Kusiwa Geophysical Engineering Juma Hamada	
Consultant	Mecak S. Kaniuk	
District Water office	ACHIR-2	
Sub-county	Mansim	
RGC office	Ochieng	
Land load		

Attachment: (if any) Location Map.

A1-4



A1-3

The Project for Provision of Improved Water Sources for Returned IDP in Acholi 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: <i>Awere</i>	District: <i>Gulu</i>
RGC Borehole No.: <i>PWS-08</i>	County:
N:	Sub-County:
E:	
Working space: 1. Drilling site: <i>20m x 20m / site</i> 2. Aquifer tests: <i>20m x 15m / site</i>	

Confirmed by:

Firms and organizations	Name	Signature
Contractor	<i>FELS</i> <i>DRACO</i> <i>Chewy K... Wadwa...</i>	<i>[Signature]</i>
Consultant	<i>9990 Hamada</i> <i>Mecall S Patrick</i>	<i>[Signature]</i>
District Water office	<i>DCAVA BISO ABERE-W.</i>	<i>[Signature]</i>
Sub-county		
RGC office		
Land load	<i>LUNA CELL ANTONA</i>	
Test Drilling site	<i>OJOK-YOUNG</i> <i>OKAT RMAHD</i>	

Attachment (if any)

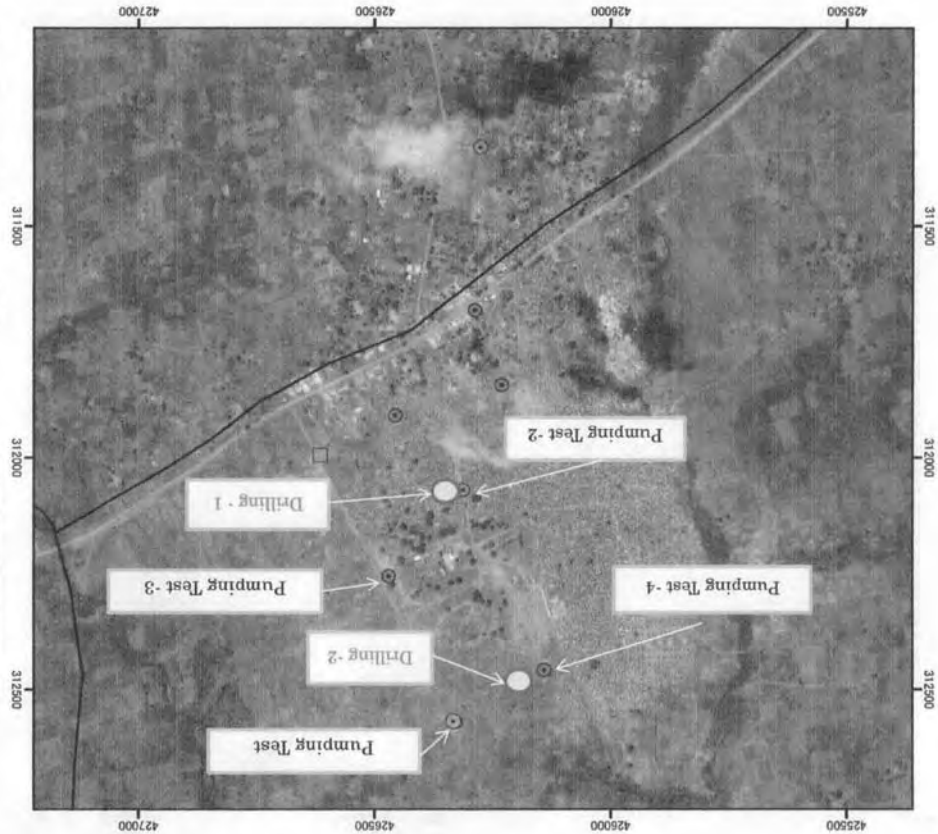


Unyama RGC
PWS-06
Gulu District

1:10,000
0 100 200 400 m



Pipe System	Classification
Public Tap	●
Elevated Tank	■
Borehole	⊗
Wells	Functioning
Functioning	⊙
Not Functioning	⊗
Boundary	
Sub-County Boundary	---
Parish Boundary	---



The Project for Provision of Improved Water Sources 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: <i>Pitugum MaZidi</i>	District: <i>Kitgum</i>
Borehole No.: <i>PWS-14</i>	County:
N:	Sub-County:
E:	
Working space: <i>Drilling: 20m x 20m</i> <i>Aquifer Tests: 15m x 20m</i>	

Confirmed by:

Firms and organizations	Name	Signature
Contractor	<i>FALE</i> <i>DRACD</i> <i>Wadonit Syliver</i>	<i>[Signature]</i>
Consultant	<i>TGC</i> <i>P. Hamada</i> <i>Hydrogeologist</i>	<i>[Signature]</i>
District Water office	<i>Oryem Jefe Olyant</i>	<i>[Signature]</i>
Sub-county	<i>Kitgum MATIDI</i> <i>PIDO OPDOKA GERSTEN</i>	<i>[Signature]</i>
RGC office		
Land load	<i>the drilling site</i> <i>near Church</i> <i>OHEN-BEHEH SANJIN</i>	<i>[Signature]</i>

Attachment (if any)

Test Drilling site is public land.

AI - 8

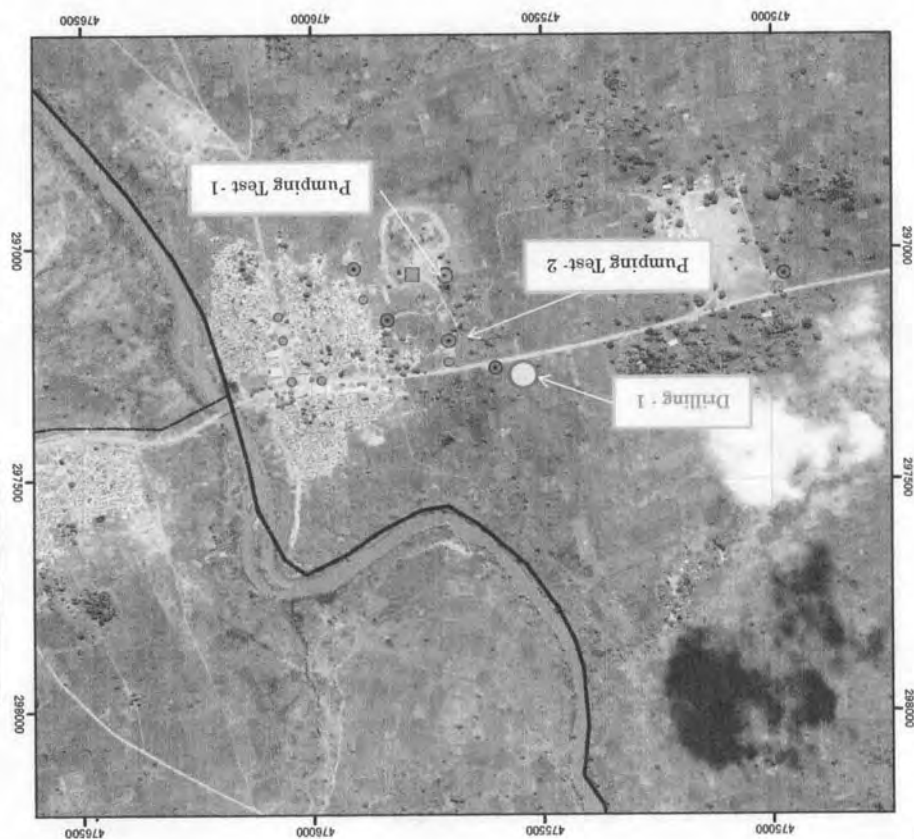


PWS-08
Awere RGC
Gulu District

Scale: 1:10,000
0 100 200 400 m



- Pipe System**
- Functioning:
 - Not Functioning:
- Wells**
- Public Tap:
 - Elevated Tank:
 - Borehole:
- Classification**
- SubCounty Boundary:
 - Parish Boundary:



AI - 7

The Project for Provision of Improved Water Source for Returned IDP in Acholi 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: <i>Corner Kilak</i>	District: <i>Pader</i>
Borehole No.: <i>PWS-15</i>	County:
N:	Sub-County:
E:	
Working space: <i>Test Drilling: 20m x 20m</i> <i>Aquifer test: 15m x 20m</i> <i>(existing Boreholes)</i>	

Confirmed by:

Firms and organizations		Name	Signature
Contractor	DRACO	<i>Spiller Wunduko</i>	<i>[Signature]</i>
	FELD	<i>Charity Kiener</i>	<i>[Signature]</i>
Consultant		<i>J. Namada</i>	<i>[Signature]</i>
District Water office		<i>Obah Obote Charles</i>	<i>[Signature]</i>
Sub-county		<i>DELO RICHARDS OGABA</i>	<i>[Signature]</i>
RGC office			
Land load		<i>No necessary to get approval from land loads</i>	
Drilling site		<i>Subcounty and subcounty office yard (public land)</i>	
PWS-15-TD-1		<i>Kidega Francis</i>	<i>[Signature]</i>

Attachment:(if any)

Location Map

AI - 10

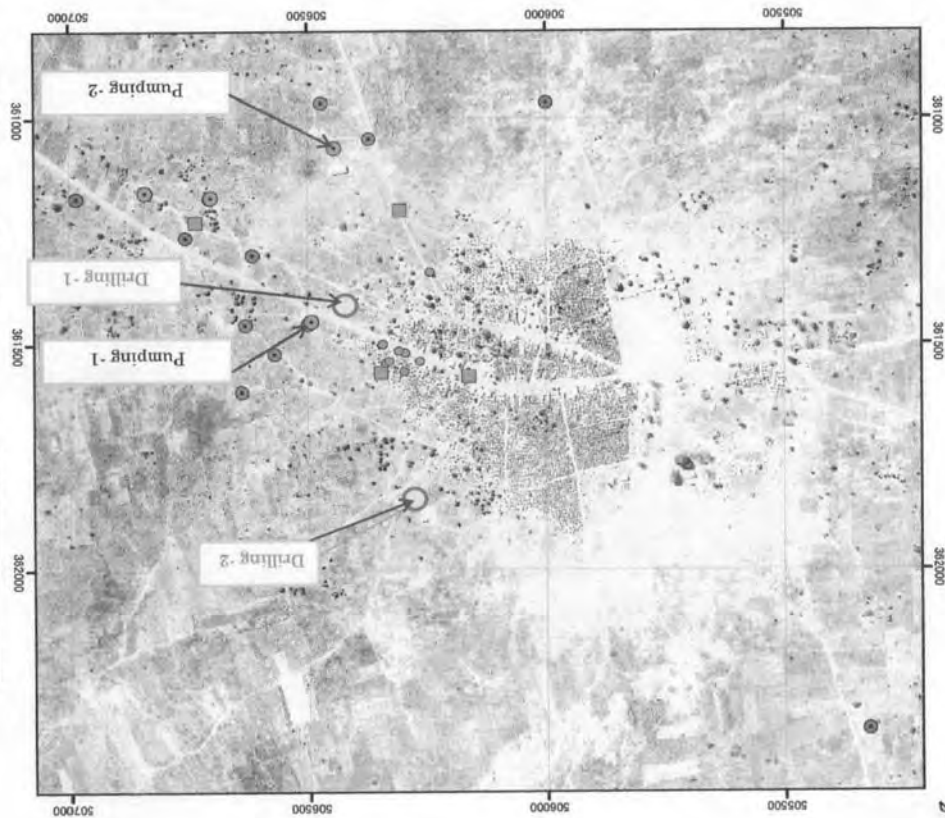


PWS-14
Kitgum Matidi RGC
Kitgum District

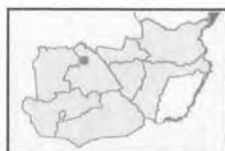
Scale: 1:10,000
0 100 200 400 m



	Parish Boundary
	SubCounty Boundary
	Functioning
	Not Functioning
	Public Tap
	Elevated Tank
	Borehole
	Classification
	Pipe System



AI - 9

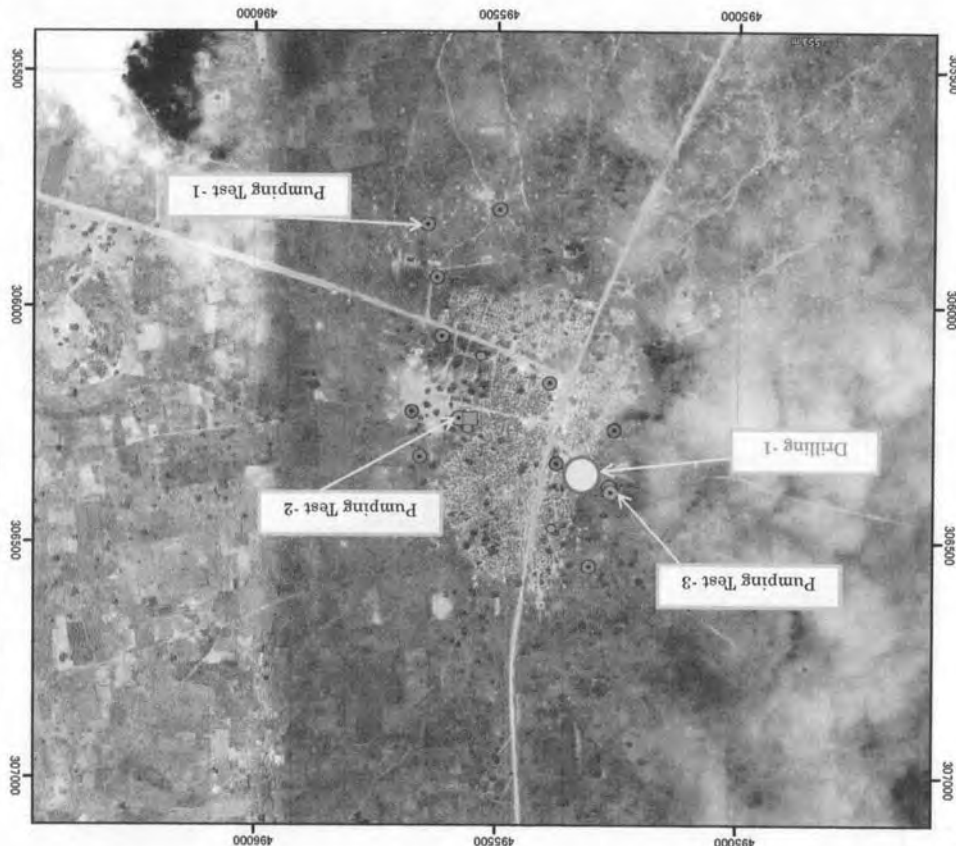


PWS-15 Corner Kilak RGC Pader District

1:10,000
0 100 200 400
m



Pipe System	
Classification	●
Borehole	■
Elevated Tank	●
Public Tap	●
Wells	
Functioning	●
Not Functioning	○
Functioning	
SubCounty Boundary	—
Parish Boundary	- - -



AI - 11

Am

The Project for Provision of Improved Water Source for Returned IDP in Acholi 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: <i>A dilang</i>	District: <i>Agago</i>
Project No.: <i>PWS-10</i>	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	<i>Chumba Kusiwa</i>	<i>[Signature]</i>
	<i>PRACO Wadamba</i>	<i>[Signature]</i>
Consultant	<i>P. Wadamba</i>	<i>[Signature]</i>
	<i>Hydrogeologist</i>	<i>[Signature]</i>
District Water office	<i>Dyer Raymond</i>	<i>[Signature]</i>
Sub-county	<i>Digway Thomas</i>	<i>[Signature]</i>
	<i>On Behalf of R.C.III</i>	<i>[Signature]</i>
RGC office		<i>[Signature]</i>
Land load exbrining	<i>DECH FRANCIS</i>	<i>[Signature]</i>
	<i>516</i>	

Attachment:(if any) *Location Map.*

[Signature] *DIOOT PETER*

AI - 12

Am

ADILANG SUB-COUNTY
LOWER LOCAL GOVERNMENT
P. O. BOX 23
AGAGO DISTRICT
DATE 22-11-2011

REF: PERMISSION FOR WATER TESTING

This is to grant permission for testing water at the two water points that were originally used to supply pipe water to the L.G's within the trading Centre. One was by Mestak and the other by Andet.

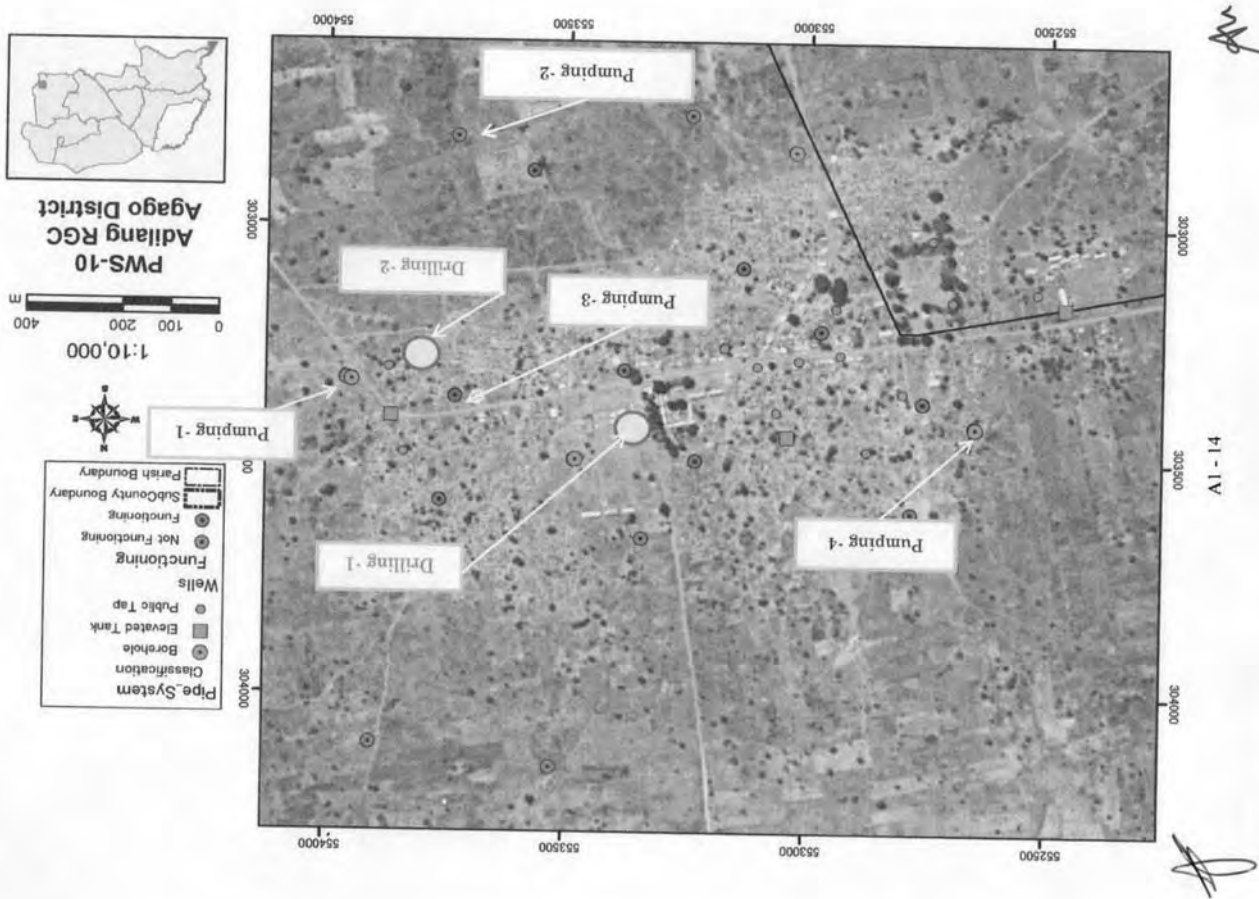
Thanks for cooperation to support Adilang Water Supply System project.

Yours, OLOT PAYMENT DUTY

CHAIRPERSON L.C III
ADILANG SUB-COUNTY
AGAGO DISTRICT
DATE 22-11-2011

A1-13

As



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: Peter Dymally
Landowner
Date: 13-11-2011
Witnessed by:
LC I Chairperson
Name: MANSHUR A. ODOCH
Date: 13/11/2011

Next Landowner
Name: _____
Date: _____

Sign: _____ Date: _____
Sign/Stamp: _____ Date: _____

Other community members present:
Name: _____
Date: _____

Sign: _____ Date: _____
Sign: _____ Date: _____

Sub County Authorities:
Name: ANTHONY IRAGARA
Title: Chairperson LC III

Sign: _____ Date: 28/11/2011
Sign: _____ Date: 28/11/2011

Stamp: SENIOR ASSISTANT SECRETARY
Attachment: 1- Site Sketch



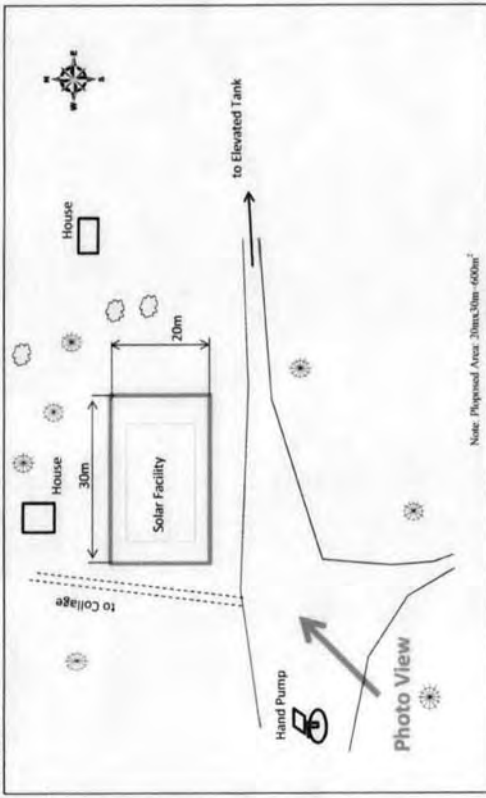
The Project for Provision of Improved Water Source for Returned IDP in Achori Sub-Region

Form of Proposed Land Uses - 1/2

Date: _____

Name of RGC: Unyama
District: Gulu
Proposed Land: Solar facility
Proposed Land: Elevated Tank

Site Sketch:



Proposed Land



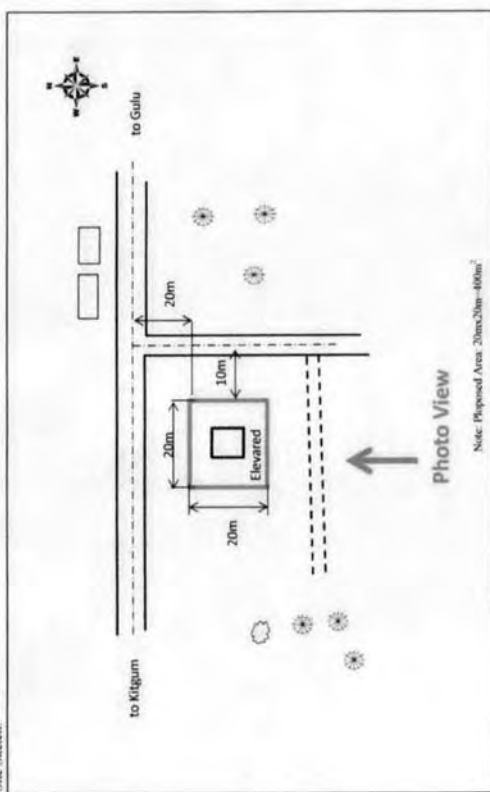
CHAIRMAN L.C.I
TE-PWOYO VILLAGE
PAKWELO PARISH
UNYAMA S/CITY
SIGN: _____
Name: MANSHUR A. ODOCH
Position: L.C.I CHAIRMAN
Signature: _____

Form of Proposed Land Uses - 2/2

Date: _____

Name of R.O.C. Unyama
District: Gulu
Proposed Land Solar facility 600.0 m² (20.0 m x 30.0 m)
Proposed Land Elevated Tank 400.0 m² (20.0 m x 20.0 m)
Comment:

Site Sketch:



Proposed Land



Confirmed by:
Consultant:

Name: MARSHALL TSUKU DA
Position: LC I CHAIRMAN
Signature: [Signature]

Name: MANGLI ID A 00004
Position: LC I CHAIRMAN
Signature: [Signature]



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. OKATA KASAMBA 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: OKATA KASAMBA Witnessed by: Okello Ceaser
Landowner LC I Chairperson

Sign: [Signature] Date: 21/11/2011 Sign: [Signature] Date: 21/11/2011

Name: Backara Michael Name: _____
Next Landowner LC II Chairperson

Sign: [Signature] Date: 21/11/2011 Sign/Stamp: _____ Date: _____

Other community members present:
Name: CHAKKERE KENNETH Name: OKOT RANKA

Sign: [Signature] Sign: [Signature]
Date: 21-11-2011 Date: 21-11-2011

Sub County Authorities:
Name: Okwera Thon mas rock Name: DCAYA BOGO ADEDE

Title: Sub County Chief Title: Chairperson LC III
Sign: [Signature] Sign: [Signature]
Date: 21.11.2011 Date: 21.11.11



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

Form of Proposed Land Uses- 1/2

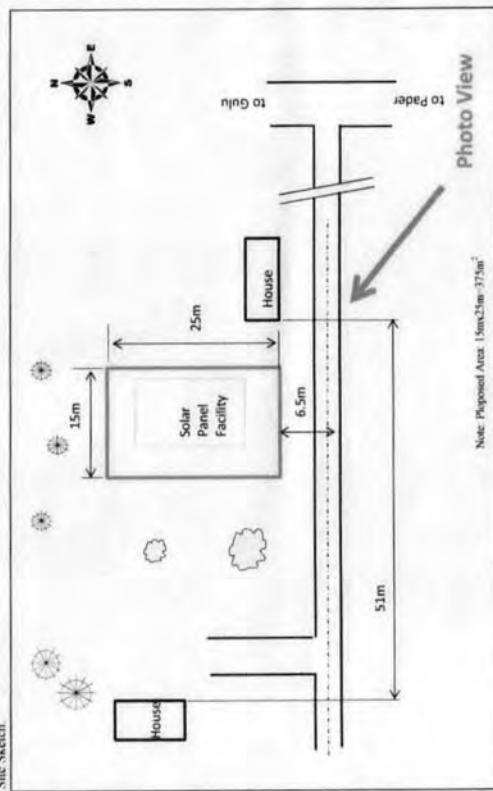
Date:

Name of RGC: Awere
District: Gulu

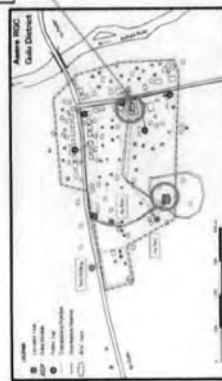
Proposed Land Solar facility 375.0 m² (15.0 m x 25.0 m)
Proposed Land Elevated Tank 400.0 m² (20.0 m x 20.0 m)

Comment:

Site Sketch:



Proposed Land



Confirmed by:
Consultant:

Name: MATTHEW TAYLOR
Position: RICA Survey Team
Signature: M. Taylor

LC:

Name: DAYA BOSCO ADOR
Position: CHAMAN LCU
Signature: D. Ador

A1 - 19

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

Form of Proposed Land Uses- 2/2

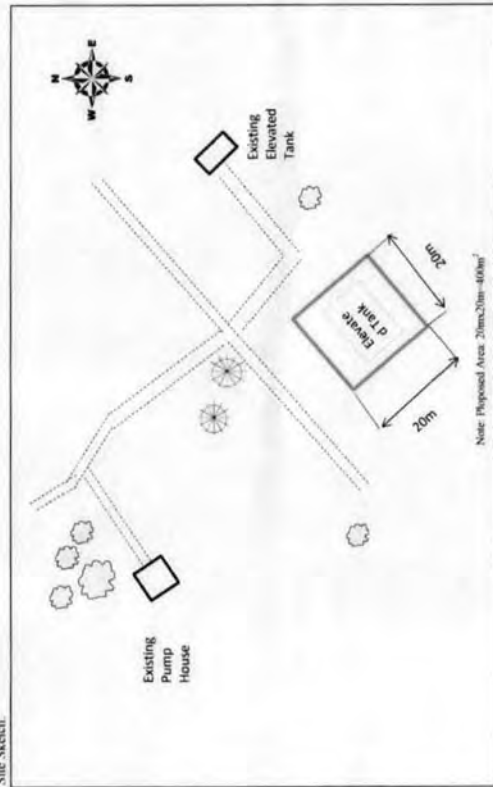
Date:

Name of RGC: Awere
District: Gulu

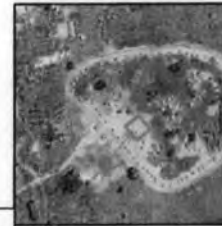
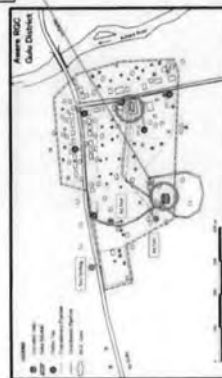
Proposed Land Solar facility 375.0 m² (15.0 m x 25.0 m)
Proposed Land Elevated Tank 375.0 m² (20.0 m x 20.0 m)

Comment:

Site Sketch:



Proposed Land



Confirmed by:
Consultant:

Name: MATTHEW TAYLOR
Position: RICA Survey Team
Signature: M. Taylor

LC:

Name: DAYA BOSCO ADOR
Position: CHAMAN LCU
Signature: D. Ador

A1 - 20

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. John Mottis 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.



Name: John Mottis
Landowner

Witnessed by: SECONDINA LAKESJA Any
LC I Chairperson

Sign: [Signature] Date: 17/11/2011
Name: John Mottis Date: 17/11/2011

Next Landowner
Sign: [Signature] Date: 17/11/2011
Name: John Mottis Date: 17/11/2011

Other community members present:
Name: John Mottis Date: 17/11/2011

Sign: [Signature] Date: 17/11/2011
Name: John Mottis Date: 17/11/2011

Sub County Authorities:
Name: John Mottis Date: 17/11/2011

Title: Sub County Chief
Name: John Mottis Date: 17/11/2011

Sign: [Signature] Date: 17/11/2011
Name: John Mottis Date: 17/11/2011

Stamp: [Stamp]
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 Proposed Land Uses

Date:

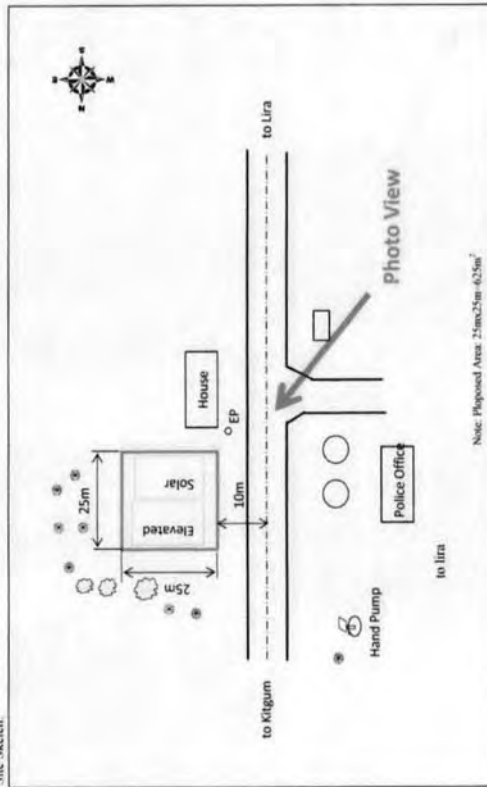
Name of RGC: Coner Kilak

District: Pader

Proposed Land: 625.0 m² (25.0 m x 25.0 m)

Comment:

Site Sketch:



Note: Proposed Area: 25m x 25m = 625m²

Proposed Land



Confirmed by:

Consultant: ONKOR G. G. G. G.

Name: ONKOR G. G. G. G.

Position: Sub-County Chief

Signature: [Signature]

Date: 17/11/2011

Name: DWENA ROBERT

Position: Chairperson

Signature: [Signature]

Date: 17 NOV 2011

Stamp: [Stamp]

Kigumu Matidi

THE REPUBLIC OF UGANDA

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

Land Agreement for Solar Facilities and/or Elevated Tank

I Mr. OKENOKOMIA M. J. J. agree by agree for use of my land measuring 30m x 30m m for installation of water supply system to be used by community.

Name: OKENOKOMIA M. J. J. Witnessed by: LC I Chairperson
Landowner: LC I Chairperson
Sign: [Signature] Date: 18 NOV 2011
Name: [Signature] Date: [Signature]
Next Landowner: LC II Chairperson
Sign: [Signature] Date: [Signature]
Sign Stamp: [Signature] Date: [Signature]

Other community members present:
Name: [Signature] Name: [Signature]
Sign: [Signature] Sign: [Signature]
Date: [Signature] Date: [Signature]

Sub County Authorities:
Name: OKENOKOMIA M. J. J. Name: PIDO OPEKA GERSHAN
Title: Sub County CHIEF Title: Chairperson LC III
Sign: [Signature] Sign: [Signature]
Date: 18 NOV 2011 Date: 18-11-2011

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

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

A1 - 25

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

Form of Proposed Land Uses

Date:

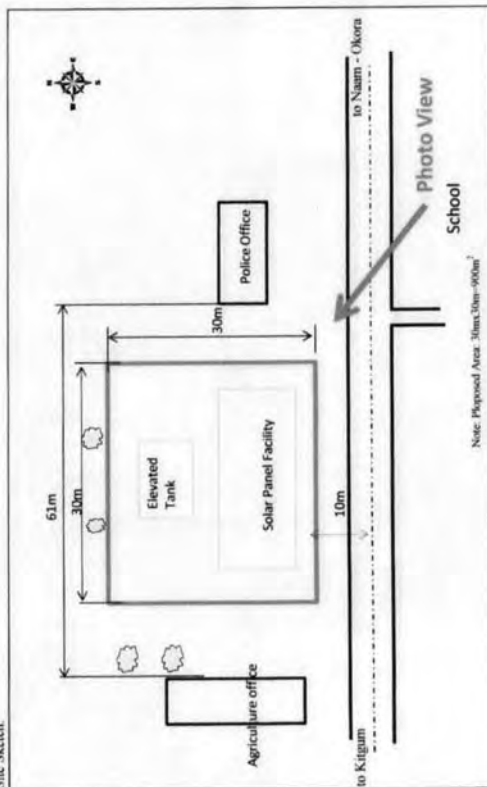
Name of RGC: Kigumu Matidi

District: Kigumu

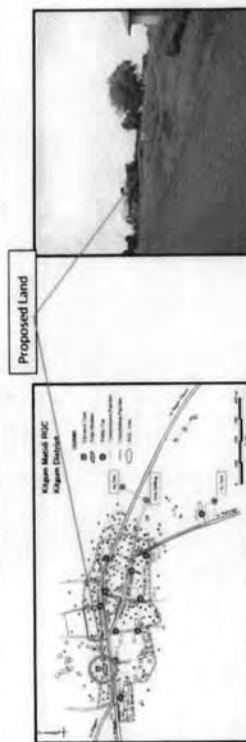
Proposed Land: 900.0 m² (30m x 30m)

Comment:

Site Sketch:



Note: Proposed Area: 30m x 30m = 900m²



Confirmed by:
Consultant:

Name: [Signature]
Position: [Signature]
Signature: [Signature]

LC III:

Name: MATTHEW TSHILUA
Position: Sub County Chairperson
Signature: [Signature]

Name: PIDO OPEKA GERSHAN
Position: SUB-COUNTY CHAIRPERSON
Signature: [Signature]

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

A1 - 26

Health, Energy & Agriculture

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: Dicko Peter Bwello

Landowner

Sign: [Signature] Date: 30/11/2011

Name:

Next Landowner

Sign: Date:

Other community members present:
Name:

Sign: Date:

Sub County Authorities:
Name: Dicko Peter Bwello

Title: Sub County Chief

Sign: [Signature]

Date: 30/11/2011

Stamp:

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

Witnessed by: C/MANILLO KALAZI

LC I Chairperson: KILANIA CHARLES

CHAIRMAN LC I KALAZI
KOBEN BOHA SUB-COUNTY
KOBEN BOHA COUNTY

Sign: [Signature] Date: 30/11/2011

Name: KILANIA CHARLES

LC II Chairperson

Sign Stamp: [Stamp]

Name:

Sign: Date:

Name: DEALIM PETER LAASA

Title: Chairperson LC III

Sign: [Signature]

Date: 30. Nov. 2011

Stamp: FOR

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

Form of Proposed Land Uses

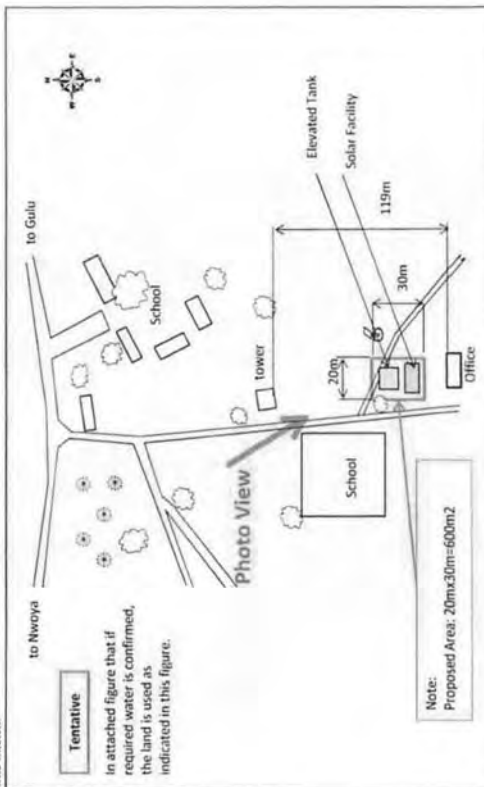
Name of R/G: Koch Guma
District: Nwoya

Proposed Land: 600.0 m² (20.0 m x 30.0 m)

Comment:

Date: 30 Nov 2011

Site Sketch



Proposed Land



Confirmed by:
Consultant

Name: Maheshwari B. K. K.
Position: SLIA Survey Team
Signature: [Signature]

LC

Name: Dicko Peter Bwello
Position: SLIA Survey Team
Signature: [Signature]

Annex 2 Statements of Stakeholder Meetings

[Handwritten signature]

A2 - 1

[Handwritten signature]

**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 LCY including CAO to LCI, and the participants have confirmed the items described in the attached sheets

Pader, November 17th, 2011

[Handwritten signature]

A2 - 2

[Handwritten signature]

DWD Authorities and the Team Representatives :

Name: MUGISA R. K. KATO Name:

Title: DWD Representative Sign:

Sign:

District Authorities:

Name: AKENA ALFRED Name: ORYEMA EVARISTO

Title: LCV Representative Title: CAO Representative

Sign: [Signature] Sign: [Signature]

Name: OCENG DAVID Name:

Title: District Water Office Representative

Sign: [Signature]

Sub County Authorities:

Name: DWICKA ROBERT Name: ONGIE GILSON

Title: LCI Representative Title: Sub county chief

Sign: [Signature] Sign: [Signature]

Name: EVUJANE O. K. A. Name: SASOMBI NA. HAMBUR

Title: LCI Representative Title: LCI Representative

Sign: [Signature] Sign: [Signature]

Name: OKOTO SAMUEL Name: AMUKO BORINE

Title: LCI Representative Title: LCI Representative

Sign: [Signature] Sign: [Signature]

Name:

Title: LCI Representative

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, transmission pipe, and distribution 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 considered after pumping test of existing boreholes.

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 land 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.

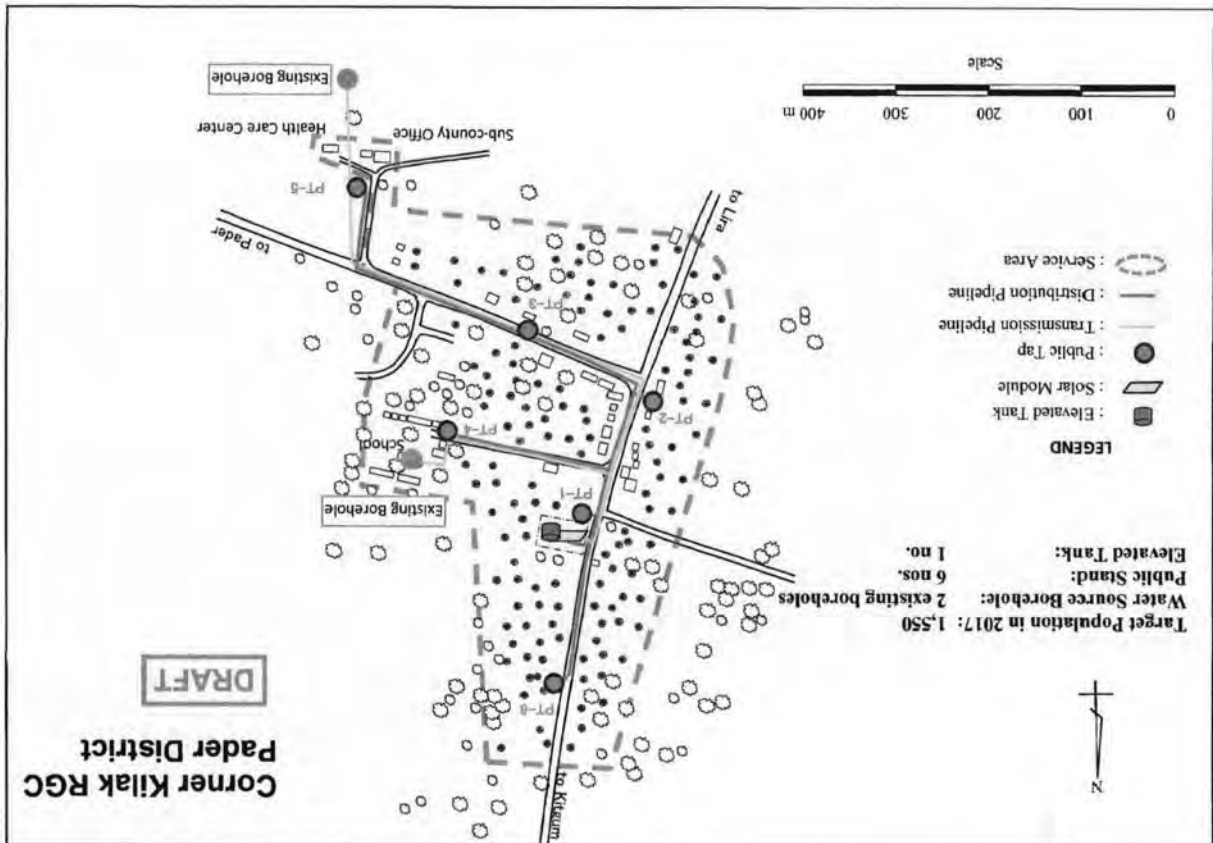
2) Environmental Impacts associated with the Construction Phase of the Project

Category	Environmental Item	Negative Impacts	Mitigation Measures
Pollution Control	Noise and Vibration	Noise during Construction	<ul style="list-style-type: none"> 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.	<ul style="list-style-type: none"> Contractor should clear any waste generated during construction and dump 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.	<ul style="list-style-type: none"> 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



A2 - 5

**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 LCY including CAO to LCI, and the participants have confirmed the items described in the attached sheets

Agago, November 18th, 2011

A2-7

DWD Authorities and the Team Representatives :

Name..... MYGALA P-B-KATU

Title: DWD Representative

Sign:  Sign: 

District Authorities:

Name. Jackie Charles

Title: CAO Representative

Title: LCV Representative

Sign.....

DL-lysine

Name: CLYDE J. JONES
Title: District Water Office Representative T WATER OFFICER

Sign. X WCA 1/29/14 10 NOV. 2011

Sub County Authorities:

Name: DIKOT RAYMOND EMMANUEL LAKOT VICKY

Title: LCIII Representative of CHAIRPERSON L-C III
ADIL AND SUB-COUNTY DISTRICT

Sub county chief THE SUB-COUNTY CHIEF ADIL AND SUB-COUNTY DISTRICT

DATE 12-11-11 SIGN *[Signature]*

[illegible]

Name: APOLLO FALLEN
Title: ICI Documentation



.....

Name: YPEKA HMBROSE

Title: LCI Representative

2

Signature _____

Signature _____

Apr 20 1963

Name: A. J. C. S. G. E. Name:

Title: LGI Representative

Mr. E.

Sign.....
Sign.....

A2-8

ATTACHMENT

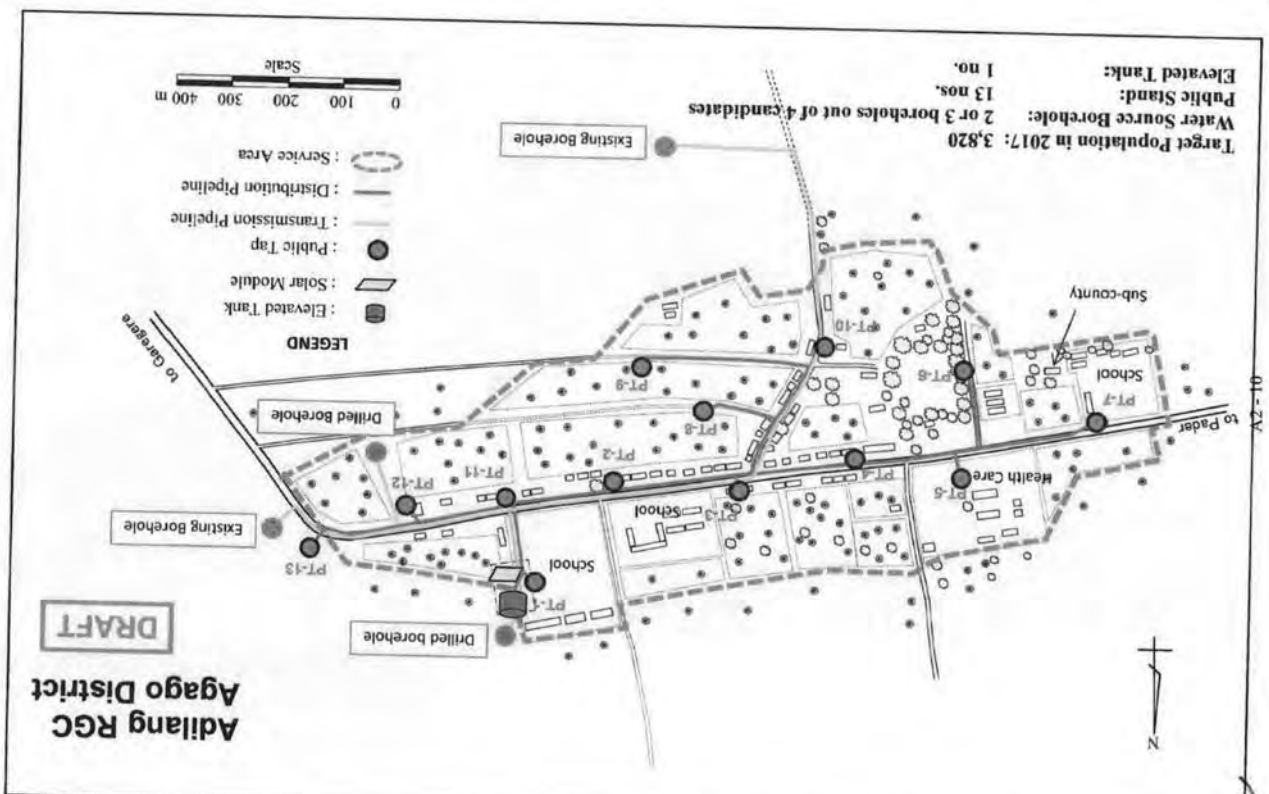
1. Draft Plan of the Piped Water Supply System

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, transmission pipe, and distribution 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.



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 land 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

Category	Environmental Item	Negative Impacts	Mitigation Measures
Pollution Control	Noise and Vibration	Noise during Construction	<ul style="list-style-type: none"> 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.	<ul style="list-style-type: none"> Contractor should clear any waste generated during construction and dump them at a proper disposal place. Care must be taken in the handling and storage of all liquids to avoid any environmental degradation.
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Category	Environmental Item	Negative Impacts	Mitigation Measures
Pollution Control	Wastes	Water stagnation that leads to mosquitoes breeding.	<ul style="list-style-type: none"> 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 - 11

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 Layana Primary school. The extension will be considered from the technical point of view and borehole yields.

A2 - 12

DWD Authorities and the Team Representatives :

Name: BISOBEWA DAN

Title: DWD Representative

Sign: 

District Authorities:

Name: KATUM MINTO

Title: LCV Representative

Sign: 

Name: KATUM MINTO

Title: LCV Representative

Stamp: 

Sign: 

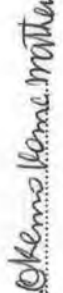
Name: ORTEMA CHARLES

Title: District Water Office Representative

Sub County Authorities:

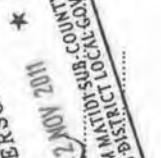
Name: P.D.A. DPKA GACHO III

Title: LCIII Representative

Sign: 

Name: P.D.A. DPKA GACHO III

Title: LCIII Representative

Stamp: 

Sign: 

Name: KATUM MINTO

Title: LCI Representative

Stamp: 

Name: KATUM MINTO

Title: LCI Representative

Sign: 

Name: DANIELA D. ANGELO

Title: LCI Representative

Sign: 

Name: DANIELA D. ANGELO

Title: LCI Representative

Sign: 

Name: DANIELA D. ANGELO

Title: LCI Representative

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, transmission pipe, and distribution 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.

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.

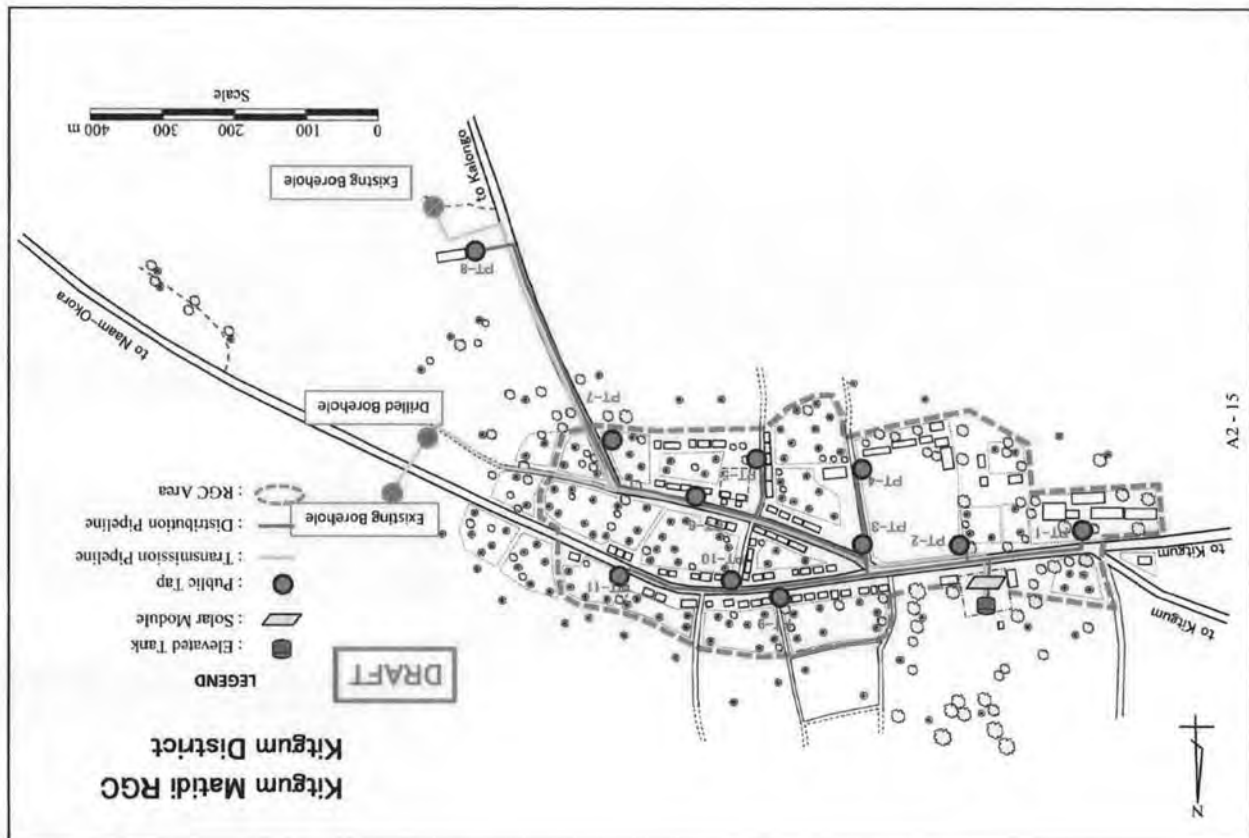
2) Environmental Impacts associated with the Construction Phase of the Project

Category	Environmental Item	Negative Impacts	Mitigation Measures
Pollution Control	Noise and Vibration	Noise during Construction	<ul style="list-style-type: none"> 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.	<ul style="list-style-type: none"> Contractor should clear any waste generated during construction and dump 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.	<ul style="list-style-type: none"> 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.

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A2 - 15

**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

A2 - 17

[Signature]

DWD Authorities and the Team Representatives :

Name..... MUGASA RUGATO Name.....

Title: DWD Representative

Sign..... *[Signature]* Sign.....

District Authorities:

Name..... Title: CAO Representative

Title: LCV Representative

Sign..... *[Signature]* Sign.....

Name: Kilomo Bosco Title: District Water Office Representative

Sign.....

Sub County Authorities:

Name: DAVID BOSCO ADESI Name: DANIEL THOMAS RACK

Title: LCIII Representative

Title: Sub county chief

Sign..... *[Signature]* Sign..... *[Signature]*

Name: ABENA RICHARD Title: LCI Representative

Name: J. S. S. O. O. O. O. Title: LCI Representative

Sign..... *[Signature]* Sign..... *[Signature]*

Name: H. A. A. A. A. Title: LCI Representative

Name: DUMENE KENNETH Title: LCI Representative

Sign..... *[Signature]* Sign..... *[Signature]*

Name: MORING AUMSA Title: LCI Representative

Name: WILLIAM RICHARD Title: LCI Representative

Sign..... *[Signature]* Sign..... *[Signature]*

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[Signature]

[Signature]

ATTACHMENT

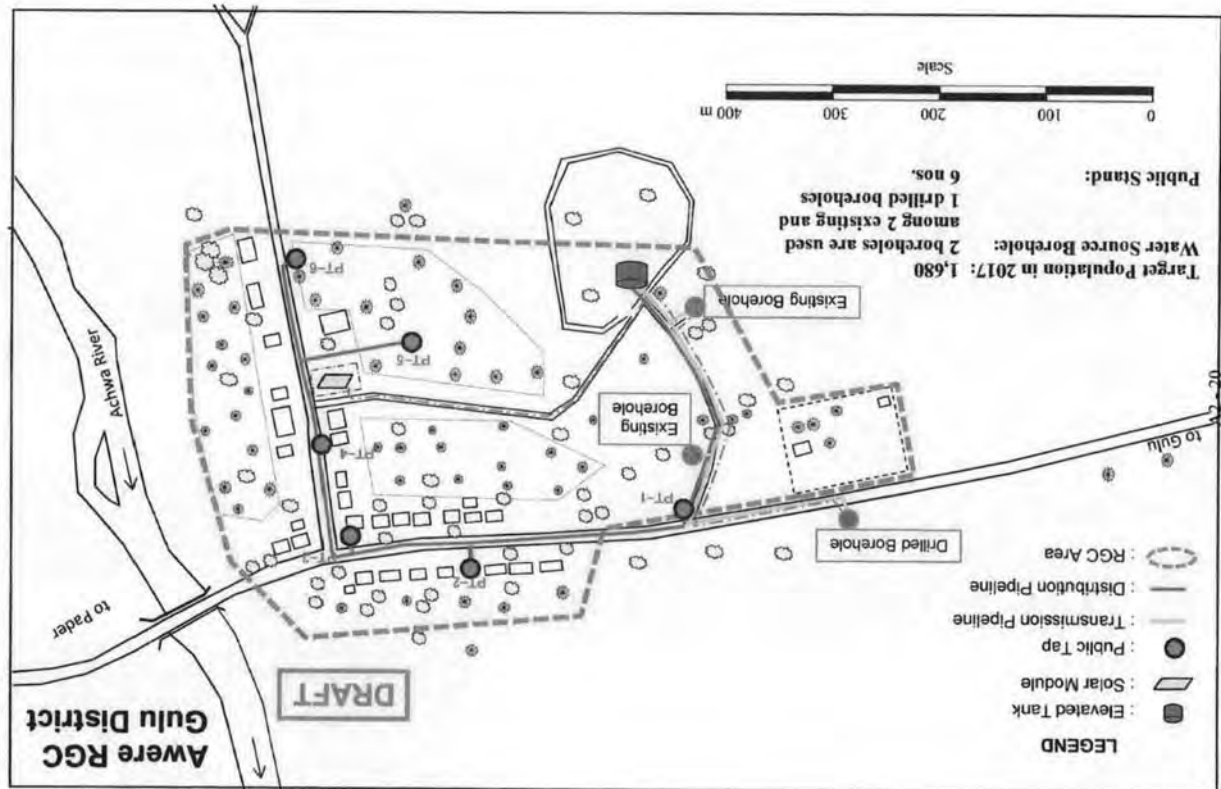
1. Draft Plan of the Piped Water Supply System

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, transmission pipe, and distribution facilities.
- 2) Some existing boreholes which may 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.



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 land 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

Category	Environmental Item	Negative Impacts	Mitigation Measures
Pollution Control	Noise and Vibration	Noise during Construction	<ul style="list-style-type: none"> Declaration of operation schedule Cautious operation and speed control of construction machinery not to exceed the allowable noise limits.
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3) Environmental Impacts associated with Operation and Maintenance Phase of the Project

Category	Environmental Item	Negative Impacts	Mitigation Measures
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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 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

A2 - 22

DWD Authorities and the Team Representatives :

Name: MUGENGA R. K. KATO Name:

Title: DWD Representative Sign:

Sign:

District Authorities:

Name: Title: LCV Representative

Name: Title: CAO Representative

Sign: [Signature]

Name: Kileme boso

Title: District Water Office Representative

Sign:

Sub County Authorities:

Name: TOORACH JUSTINE

Title: LCIII Representative

Sign: [Signature]

Name: KUMAKACH SAKO

Title: LCI Representative

Sign: [Signature]

Name: Chairman L.C.II

Title: LCI Representative

Sign: [Signature]

Name: Chairman L.C.II

Title: LCI Representative

Sign:

Name: ALLEN FLORENCE

Title: Sub county chief

Sign: [Signature]

Name: Onkos KENYAT

Title: LCI Representative

Sign: [Signature]

Name: Nyagaka Andrew

Title: LCI Representative

Sign: [Signature]

Name: WSE

Title: LCI Representative

Sign:

For SENIOR ASSISTANT SECRETARY
UNYAMA SICTY

Name: Onkos KENYAT

Title: LCI Representative

Sign: [Signature]

Name: Nyagaka Andrew

Title: LCI Representative

Sign: [Signature]

Name: WSE

Title: LCI Representative

Sign:

CHAIRMAN L.C.II
UNYAMA PARISH
UNYAMA SICTY
DATE: 22/11/2011
SIGN: [Signature]

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, transmission pipe, and distribution facilities.
- 2) Some existing boreholes which will be rehabilitated and used as water source of the new water supply system.

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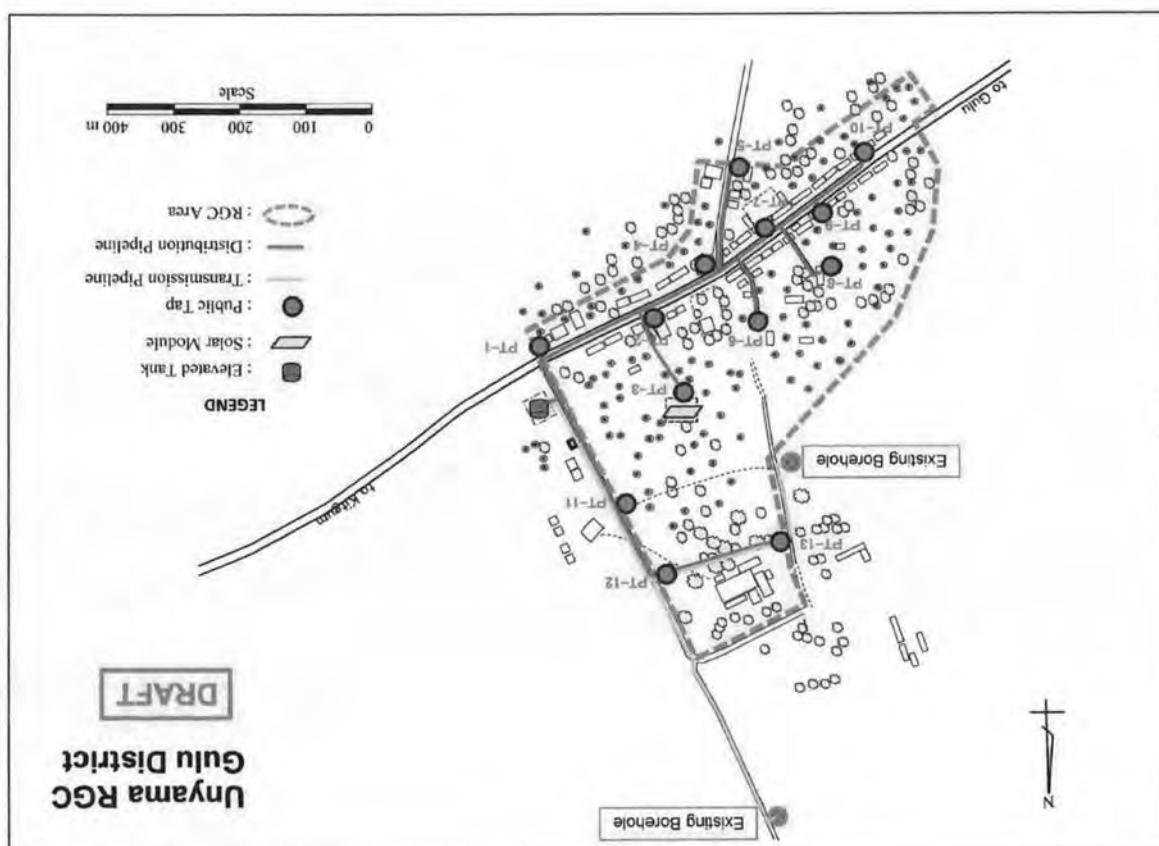
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Natural Environment	Hydrology	Reduction of groundwater table	Conservation of groundwater should be achieved by keeping discharge volume under safety yields of each borehole.

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A2 - 25

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



Annex 3 Project Brief for EIA application



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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 District), 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.

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2.2 Objectives of the Project

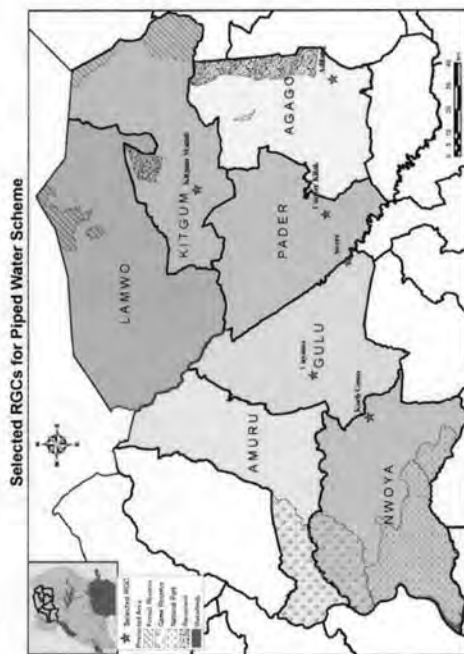
In line with the national development program of Uganda (2010 – 2014/15) the objectives of this project can be stated as follow:

- 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

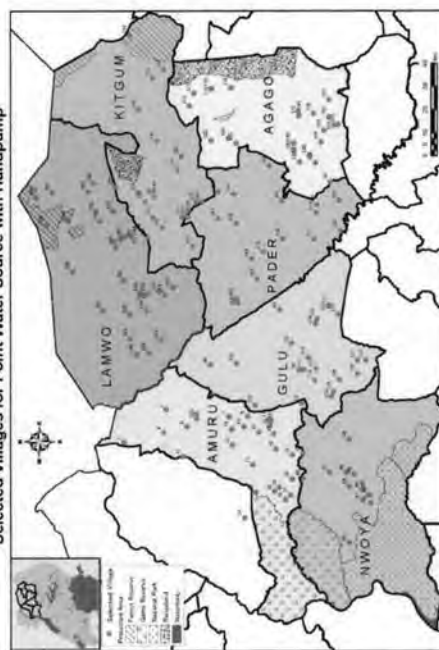
A3 - 2

2.3 Location of the Project Sites

Locations of the project sites are described in below. Figures



Selected Villages for Point Water Source with Handpump



Location of the Project Sites

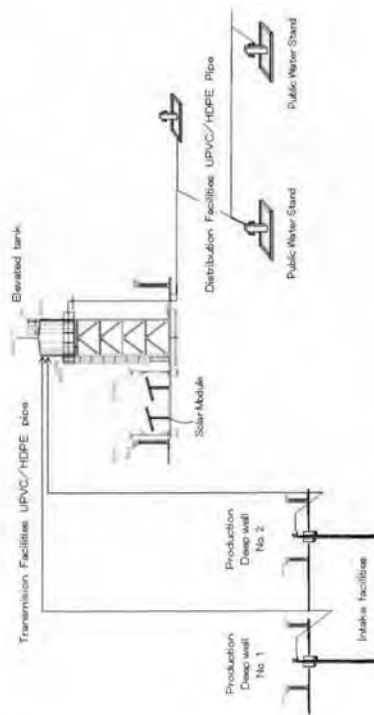
3. Project Activities

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 planned 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 planned 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) Planned 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	Adiang	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
Nwoya	Koch Goma	30	600	-	-
Gulu	Unyama	30	-	400	600
Gulu	Awere	30	-	400	375
Agago	Adiang	60	900	-	-
Kitgum	Kitgum Matidi	30	900	-	-
Pader	Corner Kilak	45	625	-	-
Total		225	3,025	800	975
				848	5,873

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b. Required Pipe Length to be installed

District	RGC	Pipe Length (m)		Qty of Public Stand
		Transmission	Distribution ³⁾	
Nwoya	Koch Goma	712	1,290	3
Gulu	Unyama	1,686	1,990	13
Gulu	Awere	368	1,110	6
Agago	Adiang	2,440	2,380	12
Kitgum	Kitgum Matidi	1,615	2,510	12
Pader	Corner Kilak	1,253	1,390	7
Total		8,074	10,670	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 planned 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)

A3 - 6

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 planned 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 Planned Hand Pump Water Supply System for Villages

The typical scale of the planned 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 liter/day/capita
3	Expected groundwater extraction	6,000 liter/day
4	Necessary land area for the facility	2m x 8m

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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: Forests, Gleysols, Nitrosols, Regosols and Cihosols. The soils along major rivers in Acholi-land constitute mostly of Regosols and Cihosols 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

A3 - 8

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.

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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.

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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

A3 - 11

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 person

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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 land 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	<ul style="list-style-type: none"> • 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.	<ul style="list-style-type: none"> • Contractor should clear any waste generated during construction and dump 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	<ul style="list-style-type: none"> • 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.	<ul style="list-style-type: none"> • 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.

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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		Without this project Impacts		With this project Impact		Good /Bad
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 scrambling 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		+
13	Topography and	No change		The impacts are unknown		

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	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
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 "Without 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	Agago	Omoro	Odek	Lamola	1,421
PWS-10	Adilang	Agago	Agago	Adilang	Lalal	3,015
PWS-14	Kigum Matidi	Kigum	Chwa	Kigum Matidi	Ihakara	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	Atiak	Bibia	3,080
3	Okidi North	Amuru	Kilak	Atiak	Okidi	1,280
4	Pacilo East	Amuru	Kilak	Atiak	Pacilo	642
5	Palukere East	Amuru	Kilak	Atiak	Palukere	2,301
7	Pukumu	Amuru	Kilak	Atiak	Pawal	1,827
8	Pupwonya East	Amuru	Kilak	Atiak	Popwonya	535
9	Pumuo	Amuru	Kilak	Paboo	Gaya	4,437
10	Kal centre	Amuru	Kilak	Paboo	Paboo Kal	3,897
11	Andara	Amuru	Kilak	Paboo	Labala	3,080
12	Olinga	Amuru	Kilak	Paboo	Labala	11,012
13	Kati Kati A	Amuru	Kilak	Paboo	Palwong	1,660
14	Akera	Amuru	Kilak	Paboo	Pambunga	658
15	Ceri	Amuru	Kilak	Paboo	Pogo	1,460
17	Abyece	Amuru	Kilak	Lamogi	Agwaryugi	9,800
18	Anora	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	Cocrom	Amuru	Kilak	Lamogi	Pugoro	1,550
23	Oblur	Amuru	Kilak	Lamogi	Coke	8,515
25	Teddi	Amuru	Kilak	Amuru	Acwera	3,766
27	Amoyokuma	Amuru	Kilak	Amuru	Pagak	8,500
28	Laborgo	Amuru	Kilak	Amuru	Pagak	2,464
29	Lajoro	Amuru	Kilak	Amuru	Palyee	2,455
30	Mitema	Amuru	Kilak	Amuru	Palyee	8,490
31	Ogelli	Amuru	Kilak	Amuru	Pamika	9,750
32	Recklocke	Amuru	Kilak	Amuru	Palyee	9,170
33	Lamolo Coke	Amuru	Kilak	Lamogi	Coke	1,700
34	Aras	Amuru	Kilak	Paboo	Labala	1,160
35	Palukere West	Amuru	Kilak	Atiak	Palukere	1,512
2. Nwoya District (12 villages)						
37	Bwobonam B	Nwoya	Nwoya	Alero	Bwobonam	3,900
40	Lanekodong	Nwoya	Nwoya	Alero	Pacokrac	9,820
46	Alago	Nwoya	Nwoya	Anaka	Pabali	2,500
48	Kal	Nwoya	Nwoya	Anaka	Pudony	8,100
54	Agonga H	Nwoya	Nwoya	Koch Goma	Agonga	4,170
62	Paminolango	Nwoya	Nwoya	Puronga	Latoro	2,600
64	Lodi	Nwoya	Nwoya	Puronga	Puronga	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	Acuamer	Gulu	Achwa	Paicho	Kal Umu	1,764
90	Onel	Gulu	Achwa	Paicho	Onel	3,244
95	Gulu PTC	Gulu	Achwa	Paicho	Unyama	5,000
96	Agoro I	Gulu	Achwa	Palaro	Labworomor	1,268
101	Kiery Central	Gulu	Achwa	Palaro	Owalo	1,182
105	Adak	Gulu	Achwa	Patiko	Pugwenyi	2,000
106	Labworomor	Gulu	Omoro	Bobo	Pudungo	1,939
107	Along	Gulu	Omoro	Bobo	Pudwe	8,635

No.	Village	District	County	Sub-county	Parish	Population (2011)
108	Ibar	Gulu	Omoro	Bobi	Padergat	8,300
110	Adak	Gulu	Omoro	Bobi	Padergat	9,025
111	Atiya	Gulu	Omoro	Koro	Arayo	3,000
114	Atede	Gulu	Omoro	Koro	Lapinuat East	2,018
115	Obwolla	Gulu	Omoro	Koro	Lapinuat West	1,500
116	Kal A and B	Gulu	Omoro	Koro	Pagaya	2,506
123	Olal	Gulu	Omoro	Laligi	Gem	2,067
124	Abwii	Gulu	Omoro	Laligi	Idobo	1,700
125	Lalinyer	Gulu	Omoro	Laligi	Idobo	1,360
126	Aparowiya I	Gulu	Omoro	Laligi	Jaka	1,974
127	Aparowiya II	Gulu	Omoro	Laligi	Jaka	1,550
136	Osak	Gulu	Omoro	Ongako	Abwoch	4,000
138	Lamin Lawino	Gulu	Omoro	Ongako	Ongako Kal	3,690

4. Agago District (23 villages)						
141	Lunage	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	Lapwen	Agago	Agago	Lira Palwo	Lunvirinyi	470
150	Kotomor east	Agago	Agago	Kotomor	Apobo	1,800
151	Amin Ogwal	Agago	Agago	Kotomor	Olek	800
152	Otingo Ongom	Agago	Agago	Kotomor	Oyelowidyl	515
153	Te Vvao	Agago	Agago	Kotomor	Oyong	500
154	Opvel Central	Agago	Agago	Putango	Kal	478
156	Opul Oryoneko	Agago	Agago	Putango	obongkwinyo	490
158	Owilo	Agago	Agago	Putango	Iukwangole	550
159	Atanga	Agago	Agago	Wol	Kalungum	456
163	Abelukwang	Agago	Agago	Wol	Gulu	370
166	Aleh Tong	Agago	Agago	Arum	Kazikazi	350
167	Wit Aup	Agago	Agago	Arum	Kazikazi	400
170	Laming Onen	Agago	Agago	Omuya Piewat	Layin	500
171	Lakwa A	Agago	Agago	Omuya Piewat	Lakwa	400
172	Acum Romu	Agago	Agago	Lokole	Ludere	370
173	Lela Kabala	Agago	Agago	Wol	atut	372
176	Tong Wiri South	Agago	Agago	Paimol	Picabul	289
178	Lalukungny	Agago	Agago	Paimol	Ngora	420
179	Te Okiro	Agago	Agago	Paimol	Ngora	420

5. Lamwo District (29 villages)						
180	Apveta Central	Lamwo	Lamwo	Palabek Ogili	Apveta	400
181	Padwat Central (Padwat P/S)	Lamwo	Lamwo	Palabek Ogili	Padwat	780
182	Padwat West (Talluru Oyika)	Lamwo	Lamwo	Palabek Ogili	Padwat	397
184	Lio-Tee okworo	Lamwo	Lamwo	Padibe East	Alua	373
185	Dech East	Lamwo	Lamwo	Padibe East	Katum	590
186	Dge Lokutu East	Lamwo	Lamwo	Padibe East	Kuliyee	499
187	Tadi South	Lamwo	Lamwo	Padibe East	Wangit	419
188	Gem (Gem)	Lamwo	Lamwo	Madit-opei	Kal	406
190	Pobutu	Lamwo	Lamwo	Madit-opei	Pobutu	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	Nguino	610
197	Loromibenge B	Lamwo	Lamwo	Agoro	Pobar	431
199	Morota East	Lamwo	Lamwo	Agoro	Pawach	473
200	Lumwaka A	Lamwo	Lamwo	Agoro	Pawach	507
201	Lobiluku (obokolol)	Lamwo	Lamwo	Paloga	Bungu	606
202	Lamwale (Kese)	Lamwo	Lamwo	Paloga	Bungu	618
203	Biber (Ithiba)	Lamwo	Lamwo	Paloga	Bungu	486
206	Guria North	Lamwo	Lamwo	Lokung	Parapono	340
207	Liri Central	Lamwo	Lamwo	Palabek Kal	Ayuu Alili	412

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No.	Village	District	County	Sub-county	Parish	Population (2011)
208	Lanywany E-walagiri	Lamwo	Lamwo	Palabek Kal	Lahigirwang	767
209	Ayuso-lipud Barara	Lamwo	Lamwo	Palabek Gem	Anaka	962
210	Alia opala (Alere)	Lamwo	Lamwo	Palabek Gem	Anaka	611
212	Pawena central (Tee Kasia)	Lamwo	Lamwo	Palabek Gem	Cibu	850
214	Amina (Nino mil)	Lamwo	Lamwo	Palabek Gem	Gem	730
215	Dyangbhi (Near Itara's home)	Lamwo	Lamwo	Palabek Gem	Pitanga	850
216	Kafata (Mbayi Parent sch.)	Lamwo	Lamwo	Palabek Gem	Pitanga	820
217	Arusha (Alayi)	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	Langji	Kitgum	Chua	Kitgum Mudi	Oryang	717
228	Rucurici	Kitgum	Chua	Lagoro	Lakwor	415
229	Alino (Dem kulu kwach)	Kitgum	Chua	Lagoro	Lalano	679
230	Gulu gwen Orua B.	Kitgum	Chua	Lagoro	Pawidi	657
231	Oetokkee Trading centre	Kitgum	Chua	Layano	Oetokkee	952
232	Pagen Central (Corner Padibe)	Kitgum	Chua	Layano	Pagen	1,058
233	Pamola central	Kitgum	Chua	Layano	Pamola	1,037
234	Puyum 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	Winyvane-Pawiny	Kitgum	Chua	Namokora	Kalabong	454
243	Lakokok	Kitgum	Chua	Namokora	Pagwok	386
246	Labworomor	Kitgum	Chua	Omuya Anyina	Melung	465
249	Lobale	Kitgum	Chua	Orom	Akurumo	360
252	Orobol (security site)	Kitgum	Chua	Orom	Lolla	645
253	Agora	Kitgum	Chua	Orom	Lolwa	471

7. Pader District (19 villages)						
258	Alili	Pader	Arui	Lapul	Koyo	600
259	Nek-Nono	Pader	Arui	Lapul	Ato	289
260	Te-okuto	Pader	Arui	Puranga	Parwech	569
261	Tee tworo	Pader	Arui	Puranga	Aringa	371
263	Apwor kla	Pader	Arui	Puranga	Laminjiko	344
264	Aria	Pader	Arui	Atanga	Kal	550
266	Lapoyakwee	Pader	Arui	Atanga	Lawiyadul	247
268	Aringo yon	Pader	Arui	Angagura	Burlobo	360
269	Libi	Pader	Arui	Angagura	Burlobo	559
270	Atup	Pader	Arui	Awere	Ruckoko	978
271	Parwech Lukce east	Pader	Arui	Awere	Lagile	602
278	Lali	Pader	Arui	Lagile	Paluyo	155
282	Bungalela	Pader	Arui	Pajule	Oryang	329
285	Lela awoki	Pader	Arui	Latanya	Golo	280
286	Dure north	Pader	Arui	Latanya	Dure	340
287	Obalo	Pader	Arui	Latanya	Ladgi	540
289	Dagolwato	Pader	Arui	Latanya	Nyekidi	439
290	Pagor	Pader	Arui	Ogom	Kalligore	555
292	Lapeny	Pader	Arui	Ogom	Olong	180

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