16.4.4 Water Demand

(1) **Population Frame**

The future population is worked out in SIP until 2035 based on the census data of UBOS. The rural population under the rural water supply controlled by DWD is calculated applying these SIP population data. The population of RGCs and village other than RGCs in each sub-county is calculated as shown in Figure 16-77 for the target years of 2015, 2020 and 2035, and the population of the whole district is summarized below.

District	2010	2015	2020	2035
Iganga	597,855	706,957	835,968	1,382,230
Pallisa	450,719	536,127	635,069	1,062,167
Soroti	485,116	590,218	718,090	1,293,240

Table 16-34	Rural Population of Priority Districts
-------------	---

The population of RGCs occupy 15 %, 10 % and 7 % of the whole population of the Iganga, the Pallisa and the Soroti districts, respectively. The population of these RGCs will increase as they grow by population concentration, and some of them will be transferred to urban water supply as the township in the future. In the other hand, new RGCs may be born by the population concentration to any new trading centers, etc. However, it is difficult to predict such future transformation of the rural population. Therefore, in this master plan, any new birth of RGC is not considered, and instead it is assumed that the present RGCs grow as they are even after the population thereof becoming over 5,000.

(2) Water Demand

1) Consumption per Capita

Since the objective to the master plan is to improve the access to safe water in the rural areas, the water consumption of drinking water is considered in estimating water demand and other demand for rural industries, etc is not considered. The consumption per capita for the rural water supply is set as follows considering those applied in SIP.

Target Years	<u>2010</u>	2015	<u>2020</u>	2035
Consumption:	15 liter/day/capita	20 liter/day/capita	25 liter/day/capita	30 liter/day/capita

2) Future Water Demand

Based on the above consumption per capita and the projected future population, the water future water demand is calculated as shown in Table 16-35 for each sub-county, and those for the priority districts are summarized below.

(3/1)

 Table 16-35
 Future Rural Water Demands of Priority Districts

				(m ³ /day)
Priority District	2010	2015	2020	2035
(Consumption)	(15 lit./d./capita)	(20 lit./d./capita)	(25 lit./d./capita)	(30 lit./d./capita)
Iganga District	8,968	14,139	20,899	41,467
Pallisa District	6,761	10,723	15,877	31,865
Soroti District	7,277	11,804	17,952	38,797

Old 27 Pailsa Detrict 2. Pails Detrict <th2. detrict<="" pails="" th=""> <th2. detrict<="" pails="" th=""></th2.></th2.>	And the second sec		1
3 3	District	10,000	
29/05 44.47 73.41 80.201 44.47 73.41 80.201 44.47 73.41 80.201 40.60 20.601 50.701 50.601 50.701	DR 27,743	26,453	32,184 57,962
3703 3102 3121 3021 3021 <th< td=""><td></td><td>32,434</td><td></td></th<>		32,434	
2 23.03 23.17 73.44 73.44 73.		40,4/0	101,622
6 33.27 33.67 55.17 33.67 55.17 33.67 55.17 33.67 55.17 32.66 36.66 56.66 36.		42,043	
6 312.50 514.4 60.56 70.00 51.44 60.56 20.60 50.56 50		21,473	
27.216 56.65 4.373 72.306 50.600 30.466 52.475 50.600 30.466 52.475 50.600 30.456 52.475 50.600 30.575 52.575 42.560 30.557 42.560 30.575 52.575 42.560 45.575 52.510 21.500 10.02 10.02 10.02 10.50 10.50 10.50 10.50 10.575		58,559	71,246 128,310
67 001 53 126 54 153 56 36 05 54 46 10 20 701 35 126 41,539 56 36 05 44 561 30 473 35 126 41,539 56 36 05 44 561 30 473 36 127 50 32 54 36 75 30 42 567 30 473 37 159 37 159 37 32 25 437 36 459 30 473 57 100 57 100 57 100 57 100 57 100 30 47 37 159 37 159 37 139 37 139 37 139 22 3156 37 136 37 136 37 130 37 130 37 130 22 3156 37 136 37 136 37 37 30 37 130 37 130 22 3156 37 35 56 37 36 17 37 36 17 37 36 37 30 37 30 27 052 31 561 37 36 17 37 36 17 37 36 17 36 37 30 27 050 12 52 30 1016 1010 32 36 30 36 37 30 37 30 37 30 27 050 12 50 30 36 160 32 36 30		45,395	
6 0.010 4512 5611 64.100 ISLALE 56.005 57.302 56.005 57.302		24,961	
E 36/17 36/16 4/16		38,835	47,249 85,093
E 36,414 4,3 (6) 6,4 (8) 6,40 (NG) 17,700 77,234 6,52 (3) 72,234 6,52 (3) 72,234 6,52 (3) 72,234 6,52 (3) 72,234 6,52 (3) 72,234 6,52 (3) 72,234 6,52 (3) 72,234 6,52 (3) 72,233 72,234 6,52 (3) 72,234 6,52 (3) 72,234 52 (3) 72,234 52 (3) 72,234 52 (4) 73 (2) 72 (3) 73 (3) 73 (3) 73 (3) 73 (3) 73 (3) 73 (3) 73 (3) 73 (3) 73 (3) 73 (3) 73 (3) 73 (3) 73 (3) <th73 (3)<="" th=""> <th73 (3)<="" th=""></th73></th73>		57,145	
33,420 39,520 66,741 77,264 (650)/WGASI 19,320 22,943 27,234 66,569 22,903 23,002 104,256 FETE 31,820 37,837 44,967 55,139 35,003 23,003 104,256 FETE 31,820 37,837 44,967 55,139 35,003 74,007 114,907 K114AA 16,766 34,566 4565 24,005 36,017 54,500 14,507 16,765 21,657 35,159 156,517 35,518 27,022 31,664 37,756 16,676 31,827 26,917 35,516 156,526 166,516 37,517 56,517 35,516 156,516 1	l	64 129	
45.003 53.322 63.05 104.354 FETETE 22.369 56.434 31.371 52.475 10.250 22.103 23.047 45.003 35.322 65.064 35.332 55.365 35.357 55.365 35.375 55.365 35.375 55.365 35.375 55.365 35.375 55.365 35.375 55.365 35.375 55.365 35.375 55.365 35.375 55.365 35.375 55.365 35.375 55.365 35.375 55.365 35.375 55.366 106.2167 25.366 106.2167 25.366 106.2167 25.366 106.2167 25.366 106.2167 25.366 106.2167 25.366 106.2167 25.366 106.2167 25.366 106.2167 25.366 106.2167 25.366 106.2167 25.366 106.2167 25.366 106.2167 25.366 106.2167 26.1666 106.2167 26.1666 106.2167 26.1666 106.2167 26.1666 106.2167 26.1666 106.2167 26.1666 106.2167		41 398	L
22 819 27,002 20,017 54,007 150,010 55,139 15,220 23,630 44,964 76,221 35 827 23,057 35,926 37,367 36,190 36,537 36,190 36,537 36,190 36,537 36,103 36,537 36,190 36,537 36,107 36,537 36,107 36,537 36,107 36,537 36,517 36,517 36,517 36,517 36,537 36,517 36,517 36,517 36,517 36,517 36,517 36,517 36,516 4,507 36,516 4,507 36,516 16,516 4,507 36,516 16,516 37,555 56,517 56,516 16,516 37,555 56,517 56,516 16,516 37,555 56,517 56,516 16,516 57,517 56,516 16,516 57,516 16,516 16,516 16,516 16,516 16,516 16,516 16,516 16,516 16,516 16,516 16,516 16,516 16,516 16,516 16,516 16,516 16,516		21.437	
19.200 22.763 26.917 44.001 117.700 21.010 36.139 38.677 34.365 23.437 56.001 25.801 117.700 21.001 36.139 38.677 34.365 23.435 56.001 36.137 44.001 56.001 36.130 36.517 31.964 37.785 57.15 31.964 37.785 57.15 36.975 36.601 36.957 36.601 36.775 36.601 36.775 36.601 36.775 36.601 36.775 36.601 36.776 57.766 1.002 37.785 57.165 1.002 37.785 57.165 1.002 37.785 57.165 1.002 37.765 1.002 37.765 1.002 37.765 1.002 37.765 1.002 37.765 1.002 37.765 1.002 37.765 1.002 37.765 1.002 37.765 1.002 37.765 1.002 37.765 1.002 37.765 1.002 37.765 1.002 37.765 1.002 37.765 1.002		60.496	T
35 827 42.365 55.00 114.597 115.200 11062.107 115.506 11062.107 115.506 11062.107 115.506 11062.107 11062.107 1102.]	not no	
40.507 56.073 56.075 55.075 55.075 57.77 56.006 44.557 27.022 31.954 37.785 52.477 26.006 44.557 57.77 26.006 44.557 27.022 31.955 57.785 52.477 26.006 44.557 57.73 26.006 44.557 27.022 31.955 705.957 835.906 1.382.230 Whole District 27.002 27.492 56.006 44.556 27.025 705.957 835.906 1.382.230 Whole District 450.719 27.400 27.			
27022 31954 37785 1730 3778 6773 408 6763 5373 <			
2/102 3/103 0.1/03 0.22/103 0.2	-		
S97,855 706,857 335,968 1.382,200 Microsoft 2.2,814 27,060 22,814 55,7153			
597/165 706/057 355/30 814.663 25.540 307/32 51.500 1062/167 MANUUTU 814.4M61 450/719 553,127 955.066 1062/167 BUVANGA 814.4M61 1,200,000 1,200,000 1,200,000 800.400 BUVANGA 814.4M61 1,200,000 1,200,000 1,200,000 800.400 BUVANGA 814.4M61 1,200,000 1,200,000 1,200,000 800.400 BUVANGA 814.4M61 1,200,000 1,200,000 1,200,000 1,200,000 BUVANGA 814.4M61 1,200,000 1,200,000 1,200,000 1,200,000 MANUNGALIAMA 100,000 1,000,000 1,000,000 1,000,000 1,000,000 MANUNGALIAMA 100,000 1,000,000 1,000,000 1,000,000 1,000,000 MANUNGALIAMA 100,000 1,000,000 1,000,000 1,000,000 1,000,000 MANUNGALIAMA 1,000,000 1,000,000 1,000,000 1,000,000 1,000,000 1,000,000 1,000,000			
597.855 706.057 635.968 1.362.230 Winde District 450.719 536.127 635.060 1.062.167 1	-		
имоцтти ецилмки ецили ец	le District 485,116	590,216	710,090 1.293,240
••••••••••••••••••••••••••••••••••••	00:00		T
•IBULANGU •IBULANGU •BULANGA •BULANGA •BULANGA •NAALENSA •NAALENSA •NAALENSA •NAALENSA •NAALENSA •NAALENSA •NAAUSO •NAALENSA •NAAUSO •NAAUSO •NAAUSO •NAAUSO •NAAUSO •NAAUSO •NAAUSO •NAAUSO •NAAUSO •NAAUSO •NAAUSO •NAAUSA •NAAUSA •NAAUSA •NAAUSA •NAAUSA •NAAUSA •NAAUSA •NAAUSA •NAAUSA •NAAUSA •NAAUSA •NAAUSA •NAAUSA •NAANAA •NAAUSA •NAANAA •NAANAA •NAANAA •			
BUVMGA BUVMGA BUVMGA NAMLENSA NAMLENSA NAMLENSA NAMELE NAMELE NAMELE ROODO NAMAMEN ROODO		1	1000
Imanualization Imanualitation Imanualization Imanual	vi rou		BINGIRE
имицтими имицтими в ULANICAL VIC в ULANICAL VIC в ULANICAL VIC и и и и и и и и и и и и и и и и и и и	inni'nn		KADUNGULU
INANIGO INANIGO <t< td=""><td></td><td></td><td></td></t<>			
EULAMIGI EULAMIGI EULAMIGI EULAMIGI EULAMIGI EULAMIGI EULAMIGI EULAMIGI EULAMIGI ENLINGALUNE MAAULUKIA ENLINGALUNE MAAULUKIA ENLINGALUNE MAAULUKIA ENLINGALUNE MAAULUKIA ENLINGALUNE MAAULUKIA			BUGONDO
• МАКИ-ИАКИ КОО ООО • МАКИ-ИАКИ КОО ООО • МАКИ-ИСКИ. • ПЕКИ. • ПЕ	000'00		WATETA
INVALIANX INVALIANX INVALIANX INVALIANX INVALIANX INVALIANX INVALIA INVALIANX INVALIANX INVALIANX INVALIANX INVALIANX INDUNINA INDUNINA INDUNINA			
INAMUNGALIVE INAMUNGALIVE<			WKYERE
Indextended Indextend	00'00		- China
In the second seco			
FOOD FOOD <th< td=""><td></td><td></td><td>*ATIIRA</td></th<>			*ATIIRA
 NAMANDALA NAMANDALA NAMANDALA WABUGA WABUGA WABUGA WABUGA WABUGA WANAMPIT NAWAMPIT NAWAMPIT	00,000	ļ	# ACIDET
IU/WIGA 400.000 IN/WIGA 400.000 IN/WIGA 400.000 IN/WIGA IN/WIGA IN/WIGA IN/WIGA IN/WIGA IN/WIGA IN/WIGA IN/WIGA IN/WIGA IN/WIEA I	1		- GWERI
	10,000		· SOROTI
Included			
200,000 200,000 200,000 200,000 200,000 200,000 200,000 200,000 200,000 200,000 200,000 200,000 200,000 200,000			- KAMUDA
	00.00		= ARAPAI
# BUKOGMA			= VATINE
CONTRACT OF A CONTRACT OF			
			= TUBUR
2010 2012 2020 2010 2010 2010 2010 2010	2010 2015	2020 2035	
1. Iganga District 2. Pailisa District	5	Soroti District	

16 - 62

Sub-county Test Pott of L ageage Diritor Out of Rock Pott of Rock	_	-	2010	resent		2015			2020			2035	
J. Janga Diarici J. Jong J. J. Jong J. J. Mark J. Mark <thj. mark<="" th=""></thj.>				Out of						Out of			Out of
hambos0.90%1.2782.84,093.51,963.50,83.10,101.78339.306.84,316.84,397.82,41Bhorgon2.95,324.91,02.40,153.84,14.94,214.94,510.712.21,115.84,100.82,371.94,318.82,77.82,41Invagon11.3635.84,102.93,114.94,254.94,214.94,274.94,103.94,304.94,374.94,103.94,304.94,324.94,424.94,44			RGC	RGC	Total	RGC	RGC	Total	RGC	RGC	Total	RGC	RGC
Bakoom 97,202 37,84 33,84 44,92 47,97 52,91 72,92 86,909 87,279 11,367 55,917 Ibnago 21,363 30,12 19,951 22,161 53,16 21,974 42,204 53,10 19,104 40,227 11,367 55,117 90,404 40,227 Waibaga 31,237 25,93 35,135 14,47 45,045 33,367 45,04 10,404 17,007 33,42 Waibaga 31,277 47,47 30,803 56,64 36,423 41,727 60,861 64,837 64,847 64,847 64,847 64,847 64,847 64,847 64,847 64,847 64,847			-		1			1			1		
Blange 19.372 4.940 2.4,07 5.947 5.947 5.947 5.947 5.947 5.947 5.947 6.9441 5.939 5.917 9.9444 5.939 5.917 9.9444 5.939 5.917 9.9444 8.927 6.9454 6.9431 7.941 8.927 6.9431 7.941 8.927 6.9413 7.941 8.942 6.9413 7.941 6.8437 7.9414 8.943 7.942 6.9413 7.941 6.8437 7.9414 8.942 6.9413 7.9414 8.943 8.9423 6.9413 7.943 8.940 4.9413 8.943 8.9423 6.9413 7.945 8.940 4.9433 8.9414 8.943 8.9433 8.944 9.940 9.943 8.943 8.943 8.943 8.9444	-							-	1			1	1
Inengen 13,764 3.841 27.90 17,562 4.560 32.97 4.417 5.399 19,118 73,41 6.222 6.412 Bukanga 43,330 7.395 36,135 51,474 8.745 42.72 66,367 10.340 55,170 9,044 64,212 Bukanga 13,276 4.735 3,428 5,170 2,492 16,611 12,374 5,178 9,100 7,130 4,178 3,136 6,883 6,823 6,823 13,88 13,88 12,88 12,895 13,910 4,174 2,395 13,910 4,174 2,395 13,910 4,174 2,395 13,910 4,174 2,395 13,910 4,174 2,395 13,910 4,174 2,395 13,910 4,124 13,910 4,124 14,124 2,345 14,240 14,155 13,910 4,144 14,353 14,130 14,130 14,130 14,145 13,910 4,144 14,314 14,130 14,130 14,130 14,130 <td>Bukooma</td> <td>37,626</td> <td>3,784</td> <td>33,841</td> <td>44,492</td> <td></td> <td>40,017</td> <td></td> <td>5,291</td> <td>47,320</td> <td>86,990</td> <td>8,749</td> <td>-</td>	Bukooma	37,626	3,784	33,841	44,492		40,017		5,291	47,320	86,990	8,749	-
Navagni 23.863 9.912 9.914 64.207 53.367 65.470 27.877 65.176 10.340 55.27 10.05.40 10.340 55.27 10.05.40 10.340 55.27 10.05.40 10.340 55.27 10.05.40 10.340 55.37 10.340 55.37 10.340 55.37 10.340 55.37 10.340 55.37 10.340 55.38 50.40 37.131 35.48 6.272 6.373 77.37 70.64 8.193 6.273 55.383 Nahamagalw 30.573 15.481 24.174 4.395 14.474 25.835 50.161 10.115 33.801 8.4187 8.295 55.383 50.40 10.4254 10.4254 10.4254 10.4254 10.4254 10.4254 10.4254 10.4254 10.4254 10.4254 10.4564 10.4564 10.4674 13.504 12.451 56.03 11.457 3.264 54.41 3.445 3.455 56.01 11.457 3.264 54.41 54.45 3.445	Bulongo	29,532	4,916	24,615	34,921	5,814	29,107	41,294		34,419	68,277	11,367	1
Bakang 43,530 7,395 6,739 5,739 1,749 8,749 4,729 60,867 10,340 50,27 10,40 7,799 17,217 Nawnadala 29,707 2,933 2,674 35,128 3,402 31,637 41,539 4,109 37,410 66,683 6,827 61,836 Nambane 40,707 15,99 2,712 35,125 4,191 31,916 42,749 4,950 37,907 70,684 6,152 6,418 Nammagina 56,414 1,249 2,748 35,625 6,016 32,623 46,714 1,845 38,76 7,284 1,36,91 6,36,82 1,71,15 33,801 6,16,82 1,71,15 33,801 6,16,82 1,71,15 33,801 6,16,92 1,74,90 1,74,97 7,84 1,36,94 1,4103 1,41,97 1,41,93 1,41,97 1,41,93 1,41,97 1,41,93 1,41,97 1,41,93 1,41,94 1,41,94 1,41,94 1,41,94 1,41,94 1,41,94 1,41,94	Irongo	31,765	3,861	27,904	37,562	4,566	32,997	44,417	5,399	39,018	73,441	8,927	64,514
Waibage 13.276 474 0.000 36.073 4.503 4.572 6.63 4.507 7.295 7.205 <t< td=""><td>Nawampiti</td><td>23,863</td><td>3,912</td><td>19,951</td><td>28,217</td><td>4,626</td><td>23,592</td><td>33,367</td><td>5,470</td><td>27,897</td><td>55,170</td><td>9,044</td><td>46,126</td></t<>	Nawampiti	23,863	3,912	19,951	28,217	4,626	23,592	33,367	5,470	27,897	55,170	9,044	46,126
Navandali 29707 2.933 26.743 91.637 41.539 41.539 47.539 97.543 95.543 65.27 55.454 Nambahe 30.713 5.743 7.724 15.507 7.724 15.507 7.724 15.507 7.724 15.507 7.724 15.507 7.724 15.507 7.724 15.507 7.724 15.507 7.724 15.507 7.724 15.507 7.724 15.507 7.724 15.507 7.724 15.507 7.724 15.507 7.744 7.503 7.747 7.745 7.745 7.745 7.745 7.745 7.745 7.745 7.745 7.745 7.745 7.745 7.745 7.745 7.747 7.745 7.747 7.745 7.747 7.745 <	Bukanga	43,530	7,395	36,135	51,474	8,745	42,729	60,867	10,340	50,527	100,640	17,097	83,543
Nambale 40,701 9,590 21,020 24,812 23,170 24,922 56,911 27,085 36,787 35,481 27,028 36,152 4,191 31,961 42,749 4,956 77,987 77,684 81,987 62,338 Nakalama 33,424 2,540 0,5322 63,023 46,741 82,607 10,250 10,01 10,378 10,01 10,378 Nakalama 34,287 5,840 10,250 0,01 0,250 10,01 14,507 10,01 14,507 0,445,00 10,440 10,440,07 Nakaun 2,9217 3,850 12,615 4,640 12,610 32,743 12,617 2,743 12,415 4,346 11,757 2,743 12,417 13,500 32,747 33,807 14,857 12,836 4,944 14,930 12,815 64,941 52,949 14,947 12,851 4,944 14,930 12,815 14,947 12,857 14,947 12,857 12,947 13,940 12,947 12,949<	Waibuga	31,276	474	30,802	36,983	560	36,423	43,732	663	43,070	72,309	1,096	71,213
Nahimangalwa 3,34.5 2,70.8 3,61.52 4,191 31,961 42,749 42,865 50,916 17,115 33,801 64,887 62,885 Namangalwa 3,428 5,480 0,9528 6,005 32,223 63,022 64,741 8,165 38,757 77,284 10,301 63,732 Nanalama 10,290 3,301 0,000 3,332 6,005 32,621 62,621 62,683 10,4254 Namalama 10,250 0 10,257 33,31 50,006 3,837 46,600 82,830 62,838 63,737 64,609 82,830 63,738 64,609 82,830 73,738 64,840 Nahoz 9,9022 3,806 53,836 64,737 8,988 12,421 11,107 13,823 20,858 8,353 53,354 54,343 Makutu 29,022 3,036 50,878 12,421 11,070 13,823 54,345 Makutu 29,022 3,036 50,887 12,426	Nawandala	29,707	2,953	26,754	35,128	3,492	31,637	41,539	4,129	37,410	68,683	6,827	61,856
Nam.galve 3 4 12.240 24.174 43.09 14.474 28.88 50.916 17.115 33.801 81.81 28.299 55.888 Nakalama 3.3,428 5,440 27.588 39.522 60.053 20.621 60.502 104.254 00 104.254 Nakage 22.919 3.880 10.909 27.102 4.809 22.763 22.071 60.2017 44.500 0.44.500 Buyanga 35.827 2.563 32.014 42.565 3.033 39.31 50.066 3.287 42.017 42.060 7.785 5.042 3.2.47 4.2.475 4.2.475 42.476 3.785 5.042 3.2.44 6.4.04 5.9.91 3.2.44 6.4.04 5.9.92 2.9.778 3.8.87 3.5.44 5.3.53 5.8.98 3.9.41 6.5.9.9 5.9.04 3.2.44 6.4.04 5.9.2 5.9.04 5.9.44 3.3.44 6.5.40 5.9.9 5.9.64 3.1.48 5.9.44 5.2.5.5 5.9.04 2.4.44	Nambale	40,701	19,599	21,102	48,128	23,176	24,952	56,911	27,405	29,506	94,100	45,313	48,787
Nakalam 33,428 5,440 27,58 9,528 6,905 33,222 6,305 6,167 8,165 9,87,97 10,249 13,001 63,725 Nankaja 2,219 3,380 10,909 27,102 4,280 22,131 22,047 5,420 6,609 12,289 8,701 44,001 Namalema 19,250 0 3,261 2,263 3,031 5,000 3,837 4,630 8,280 8,791 44,000 Nankama 9,722 3,660 3,214 4,264 2,7690 3,785 5,042 2,107 1,82,30 26,458 1,87,97 8,356 1,21,31 1,770 1,82,30 26,458 1,770 1,82,30 26,458 1,770 1,82,30 26,458 1,770 1,82,30 20,458 1,770 1,82,30 20,458 1,770 1,82,30 20,458 4,740 Male 2,750 3,254 2,750 3,354 3,457 3,463 3,441 0,5592 2,754 3,754	Nabitende	30,573	3,545	27,028	36,152	4,191	31,961	42,749	4,956	37,793	70,684	8,195	62,489
Balamagi 45 090 0.0 53.322 0.0 53.032 0.0 63.052 10.250 10.250 10.050 10.250 10.050 10.250	Namungalwe	36,414	12,240	24,174	43,059	14,474	28,585	50,916	17,115	33,801	84,187	28,299	55,889
Nakiga 22.919 3.8.80 19.939 27.102 4.5.80 22.763 20.474 5.426 26.917 5.2989 8.971 44.017 Namalemhu 49.667 9.022 43.264 3.033 50.096 3.587 4.560 82.83 5.911 76.901 Budanku 49.667 9.022 40.454 58.612 10.668 47.044 69.088 12.615 56.691 82.830 53.354 54.313 Wahcmu 27.945 88.867 50.898 70.957 105.04 60.173 83.508 12.420 71.170 1.382.230 25.488 47.494 Cogonyo 2.540 2.487 2.581 2.324 31.900 3.502 2.8.38 53.54 6.5.44 6.0.44 6.0.43 47.404 Agulo 7.571 2.508 3.7.64 3.4.284 6.3.648 6.172 5.4.44 6.3.444 6.0.43 6.0.434 6.0 6.3.444 Agulo 2.7.51 3.2.60 1.3.83 <td< td=""><td>Nakalama</td><td>33,428</td><td>5,840</td><td>27,588</td><td>39,528</td><td>6,905</td><td>32,623</td><td>46,741</td><td>8,165</td><td>38,576</td><td>77,284</td><td>13,501</td><td>63,783</td></td<>	Nakalama	33,428	5,840	27,588	39,528	6,905	32,623	46,741	8,165	38,576	77,284	13,501	63,783
Namelemba 19,20 2,276 30,30 30,31 50,006 35,87 46,509 44,507 50,31 76,000 Bunanga 35,827 2,565 33,261 42,566 30,33 30,31 50,006 3,587 46,509 114,597 28,88 50,313 50,101 50,608 12,6157 56,603 11,82,230 20,858 51,137 Mucha Diaria 58,886 20,898 10,097 10,5084 60,708 35,508 12,421 71,107 138,230 20,548 1,717,72 2,Palisa Distrit 2,799 2,717 2,582 3,7260 2,88 2,737 3,858 3,546 53,341 65,469 5,921 5,9108 Kamede 2,6971 2,588 3,7361 3,768 10,3768 13,878 6,464 10,0 6,4541 Apopong 2,539 1,248 3,626 1,3578 1,415 3,416 3,578 6,418 10,0 6,4541 Pali-Yuri 1,164 1,585	Bulamagi	45,093	0	45,093	53,322	0	53,322	63,052	0	63,052	104,254	0	104,254
Bnyanga 55.87 2.965 33.261 42.965 3.033 39.31 50.096 1.2,615 56.091 14.2,075 59.31 76.008 Makunu 20.722 3.066 23.417 31.964 4.264 72.090 37.785 54.135 54.135 Whole District 597.855 88.867 508.988 706.957 105.084 601.873 835.968 124.261 71.170 1,382.203 20.5458 1,767.72 2. Palitas District Gogonyo 2.640 2.486 20.154 26.874 2.990 23.924 31.900 3.502 28.398 53.344 56.346 61.27 57.344 Aguio 2.7590 2.3740 2.988 29.773 38.887 5.466 3.428 63.648 61.27 57.344 Apopong 23.509 1.488 2.7515 3.266 1.438 29.446 3.469 3.434 5.548 4.641 0 64.341 60 3.243 Puliba 1.3.609 0	Nakigo	22,919	3,880	19,039	27,102	4,589	22,513	32,047	5,426	26,621	52,989	8,971	44,017
bulanku 49,567 9,022 40,545 58,642 10,668 47,944 69,308 12,615 56,693 11,457 20,858 56,337 Makund 27,022 3,066 23,417 31,954 4,264 27,070 37,785 5,062 12,426 171,707 1,382,230 20,508 171,707 1,382,230 20,508 1,716,772 2. pulisa Distric 7 2,590 2,417 2,508 2,716 2,928 29,737 3,8887 3,544 5,540 5,540 5,540 5,540 5,540 5,540 5,540 5,520 2,641 5,550 2,641 5,550 2,641 5,569 2,643 3,646 3,646 3,646 3,646 3,648 10 3,876 3,876 3,848 5,569 2,551 5,669 1,532 19,973 2,623 3,114 2,309 2,448 4,343 Kasodo 27,573 5,669 1,233 10,973 2,623 3,114 2,309 5,665 6,0,14 </td <td>Namalemba</td> <td>19,250</td> <td>0</td> <td>19,250</td> <td>22,763</td> <td>0</td> <td>22,763</td> <td>26,917</td> <td>0</td> <td>26,917</td> <td>44,507</td> <td>0</td> <td>44,507</td>	Namalemba	19,250	0	19,250	22,763	0	22,763	26,917	0	26,917	44,507	0	44,507
Makaunu 27,022 3,060 23,17 31,954 4,264 27,690 37,85 5,042 31,243 62,475 8,336 54,313 Whole District 577,856 8,867 508,988 706,957 105,064 61,873 835,068 124,261 11,107 1,352,02 25,058 1,747 5,73,44 Agule 27,599 2,486 20,154 26,802 1,481 26,520 33,293 1,758 31,468 61,471 64,444 67,573,44 Apopong 23,590 1,248 22,342 28,002 1,414 26,520 33,293 1,758 31,468 61,471 64,441 64,441 Pulisa 13,809 01 13,302 16,352 04,453 30,423 3,3453 3,414 3,346 3,353 3,416 3,349 4,345 5,414 4,447 Kasod 27,515 32,660 1,532 0,4153 3,442 3,353 3,418 3,436 3,414 3,508 3,114 <t< td=""><td>Buyanga</td><td>35,827</td><td>2,565</td><td>33,261</td><td>42,365</td><td>3,033</td><td>39,331</td><td>50,096</td><td>3,587</td><td>46,509</td><td>82,830</td><td>5,931</td><td>76,900</td></t<>	Buyanga	35,827	2,565	33,261	42,365	3,033	39,331	50,096	3,587	46,509	82,830	5,931	76,900
Whole District 597,855 88,867 508,988 706,957 105,084 601,873 835,968 124,261 711,707 1,382,230 20,5458 1,176,772 2. Pallias Distriet Gogonyo 22,401 2,486 20,154 26,874 2,950 23,924 31,900 35,502 28,398 53,354 5,858 47,906 Agule 27,579 2,517 25,082 32,700 1,282 0,2890 37,947 3,663 34,244 63,408 6,127 57,344 Aguod 21,542 23,540 1,484 23,520 1,444 23,520 1,444 23,520 1,444 23,520 1,444 23,550 1,444 0 64,841 0 64,844 Palishan 13,809 0 13,809 16,322 19,975 26,823 3,144 23,908 25,050 12,44 43,469 44,847 23,908 36,119 66,055 5,656 16,44 14,909 3,636 61,112 32,947 57,500 <td< td=""><td>Ibulanku</td><td>49,567</td><td>9,022</td><td>40,545</td><td>58,612</td><td>10,668</td><td>47,944</td><td>69,308</td><td>12,615</td><td>56,693</td><td>114,597</td><td>20,858</td><td>93,738</td></td<>	Ibulanku	49,567	9,022	40,545	58,612	10,668	47,944	69,308	12,615	56,693	114,597	20,858	93,738
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	Makuutu	27,022	3,606	23,417	31,954	4,264	27,690	37,785	5,042	32,743	62,475	8,336	54,139
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	Whole District	597,855	88,867	508,988	706,957	105,084	601,873	835,968	124,261	711,707	1,382,230	205,458	1,176,772
Gogonyo 22,640 2,486 20,154 26,874 2,950 23,924 31,900 3,502 28,398 53,354 5,858 47,496 Agule 27,599 2,517 25,082 33,044 3,194 29,800 37,447 3,663 34,284 65,404 5,592 2,911 55,592 2,941 55,559 2,640 43,428 463,448 55,592 2,941 55,559 2,241 55,651 32,640 32,866 38,768 64,841 0 64,841 Pallisa 13,809 0 16,392 0 16,392 19,457 0 19,457 32,443 0 44,841 0 64,841 Pallisa 12,624 1,056 22,569 1,253 24,416 30,468 31,412 32,904 44,861 5,085 66,1040 Buebo 24,527 1,144 23,333 30,113 153 27,75 34,558 16,12 32,447 43,636 36,119 60,355 6,551 60,41			•							•			
Agule 27,599 2,517 25,082 32,760 2,988 29,773 38,887 3,546 35,341 65,040 5,932 59,102 Kameko 26,952 2,600 24,332 33,084 3,194 29,800 37,947 3,663 34,284 65,552 2,941 55,552 Kasodo 27,515 32,660 1,812 26,560 38,768 10 38,768 64,841 0.0 64,841 Puli-Puri 21,624 1,056 2,569 1,253 24,414 3,469 1,877 2,543 0 43,872 Kimale 28,021 2,387 2,533 30,414 3,498 3,33 36,114 5,026 6,64,84 Kibale 28,021 2,387 2,563 30,428 3,942 3,33 36,114 5,029 6,454 Kibale 24,527 1,14 1,3383 27,154 5,024 5,446 5,546 42,66 Kibale 1,9,328 2,9,14 4,444	Gogonyo	22,640	2,486	20,154	26,874	2,950	23,924	31,900	3,502	28,398	53,354	5,858	47,496
Kameke26,9922,60024,33233,0843,19429,89037,9473,66334,28463,4686,12757,340Apopong23,5901,24822,34222,8021,48126,52033,2391,78831,48055,5922,94152,651Kasado27,5150015,30016,392016,59219,457019,45732,543024,543Puti-Puti21,6241,05620,5692,6691,25324,41630,4691,44728,98250,9602,48848,477Kamuge19,0362,21016,82622,63730,42839,4283,3333,11166,0355,62560,416Butebo24,5271,14423,38329,1141,3582,77534,5581,61232,94757,8002,6965,510Kakoro17,936017,93621,911021,99131,3775,27526,10252,4798,82343,650Kabwangais19,322029,4917,2341027,27345,549044,54544,54Peter22,2693,74418,52526,4344,44421,99031,3775,27526,10252,4798,82343,650Buseta31,926019,9252,6511021,61133,14135,70153,53554,5345,526Kakaro21,92116,76016,78619,925019,92523,6510 <td></td> <td></td> <td></td> <td></td> <td></td> <td>-</td> <td></td> <td></td> <td></td> <td>1</td> <td></td> <td>1</td> <td>59,108</td>						-				1		1	59,108
Apopong 23,590 1,248 22,342 28,002 1,481 26,520 33,239 1,758 31,480 55,592 2,941 55,610 Kasodo 27,515 0 27,515 32,660 16,392 10,457 10 19,457 32,543 10,624 32,654 Palisa 13,809 16,320 22,569 1,235 24,416 30,469 1,487 28,982 50,960 2,488 48,472 Kamuge 19,036 2,210 16,820 22,597 2,623 3,942 3,361 36,119 66,035 5,625 66,414 Kabar 24,527 1,44 23,383 2,114 1,358 2,756 4,558 1,612 32,947 57,800 2,669 55,104 Kabrangais 19,328 0 19,228 2,243 0 2,2,773 40,037 5,275 4,558 1,42,49 1,8,83 3,501 15,33 14,85 5,5,66 Kabrangais 19,228 2,643 1	-	-									-	-	
Kasodo 27,515 0 27,515 32,660 0 32,660 38,768 0 38,768 64,841 0 64,841 Pallisa 13,809 0 13,809 16,922 0 16,322 19,457 0 19,457 32,543 0 32,543 Nuit-Puti 21,624 10,656 25,669 25,669 1,253 2,4416 30,469 1,487 28,982 50,960 2,488 48,472 Kamage 19,036 2,217 1,68,26 22,597 2,623 19,973 6,6823 3,114 23,709 44,864 5,068 5,510 Kakoro 17,936 0 17,393 21,911 0 21,912 5,273 14,289 0 45,549 Kakoro 19,328 0 19,328 2,2943 0 22,943 1,07 2,7756 31,375 2,610 25,479 8,823 44,564 Kakoro 11,938 3,717 9,756 2,434 44,944													1
Pallisa 13,809 0 13,809 16,392 0 16,392 19,457 0 19,457 32,543 0 32,543 Puil-Puit 21,624 1,056 20,569 25,669 1,253 2,416 30,469 1,147 28,928 50,960 2,488 48,477 Kamuge 19,036 2,210 16,826 22,597 2,623 39,042 3,636 36,119 66,015 5,525 66,041 Butebo 24,527 1,144 23,383 29,114 1,358 27,756 34,558 1,612 32,947 57,800 2,696 5,5104 Kabwongasi 19,328 2,943 0 25,734 0 2,7244 0 2,7244 0 2,6102 5,636 4,545 Buseta 31,926 8,008 2,918 3,897 9,506 2,8,91 4,494 1,128 3,3701 5,257 18,872 5,636 Kibuku 14,911 0 14,700 0 17,700<													
Puti-Puti 21,624 1,056 20,669 22,669 1,253 24,416 30,469 1,487 28,982 50,960 2,488 48,472 Kamuge 19,06 2,210 16,826 22,597 2,623 19,973 26,823 3,141 23,709 44,861 5,208 39,653 Kibale 28,021 1,44 23,383 20,114 1,338 30,428 30,428 3,643 36,119 66,035 5,625 60,410 Kakoro 17,936 0 17,936 21,291 0 22,731 0 25,273 42,269 0 42,268 Kakoro 31,926 8,008 23,918 37,897 9,506 28,911 44,984 11,283 33,701 75,237 18,872 65,636 Busta 11,921 17,700 0 17,00 21,010 0 21,010 35,135 16,315 93,557 16,354 43,635 1,114 43,837 Kinku 14,911 17,708				1				-					
Kamuge 19,036 2,210 16,826 22,597 2,623 19,973 26,823 3,114 23,709 44,861 5,028 39,653 Kibale 28,021 2,387 25,634 33,262 2,833 30,428 33,63 36,119 66,035 5,625 60,410 Butebo 24,527 1,144 23,883 29,114 1,58 27,756 34,558 1,612 32,947 57,800 2,696 55,104 Kakoro 17,936 0 17,935 21,114 23,897 0 22,273 00 27,234 45,549 0 42,665 Buseta 31,926 8,008 23,918 37,897 9,506 28,391 44,984 11,283 37,01 75,237 18,872 56,363 Kibaku 14,811 0 14,911 17,700 0 17,925 23,651 39,557 0 33,557 0 35,557 44,835 41,11 43,362 56,363 Kirika 18,885		-									-		
Kibale 28,021 2,387 25,634 33,262 2,833 30,428 39,482 3,363 36,119 66,035 5,625 60,410 Butebo 24,527 1,144 23,383 29,114 1,358 27,756 34,558 1,612 32,947 57,800 2,696 55,104 Kabwangasi 19,328 0 19,328 22,943 0 22,923 0 27,234 0 27,234 44,549 0 44,549 Petete 22,269 3,744 18,525 26,434 4,444 21,909 31,377 5,275 26,102 52,479 8,823 43,656 Buseta 31,926 8,008 23,918 37,897 9,506 28,391 44,984 11,283 33,701 75,237 18,872 56,363 Kirka 18,885 1,747 17,138 22,417 2,074 20,343 26,609 2,462 2,4148 44,505 4,103 37,663 5,526 48,237 Bulang													
Butebo 24,527 1,144 23,383 29,114 1,358 27,756 34,558 1,612 32,947 57,800 2,696 55,104 Kakoro 17,936 0 17,936 21,291 0 21,291 25,273 00 22,233 42,569 00 42,266 Kaboragai 17,936 37,44 15,252 26,444 41,40 0 27,234 00 27,234 62,2479 8,823 43,565 Buseta 31,926 8,048 23,918 37,897 9,506 28,391 44,984 11,283 33,701 75,237 18,872 56,665 Kibaku 14,911 0 14,911 17,700 0 17,700 21,010 0 21,010 33,511 67,675 38,585 44,104 33,787 9,506 28,691 21,117 36,765 34,554 44,058 44,145 19,038 40,463 17,152 23,311 67,675 28,687 38,985 Kadama 28,717 42,	-								1				
Kakoro 17,936 0 17,936 21,291 25,273 0 25,273 42,269 0 42,269 Kabwangasi 19,328 0 19,328 20 19,328 22,943 0 22,943 27,234 0 27,234 45,549 0 45,549 Petere 22,269 3,744 18,525 26,434 4,444 21,090 31,377 5,275 26,102 52,479 8,823 43,656 Buseta 31,926 8,008 23,918 37,897 9,506 28,911 44,984 11,283 33,701 75,275 26,610 35,135 35,357 35,357 Tirinyi 16,786 0 16,786 19,925 0 19,925 23,651 0 23,651 39,557 0 39,557 Kirka 18,885 1,747 17,138 22,417 2,074 23,437 30,702 2,341 53,735 35,856 Ragumu 22,841 23,745 2,669 23,471				1									1
Kabwangasi19,328019,32822,943022,94327,234027,23445,549045,549Petete22,2693,74418,52526,4344,44421,99031,3775,27526,10252,4798,82343,656Buseta31,9268,00823,91837,8979,50628,39144,98411,28333,70175,23718,87256,365Kibuku14,911014,91117,700017,70021,010021,01035,139035,139Tirinyi16,786016,78619,925019,9252,651023,651023,65139,557039,557Kirka18,8851,74717,13822,4172,07420,2432,6602,46224,14844,5054,11740,387Kadama28,71712,17316,54434,08814,45019,63840,46317,15223,31167,67528,66738,988Kagumu22,8142,34520,46927,0802,78424,29732,1453,30428,84153,7635,52648,237Bulagira21,8532,08019,77325,9402,46923,4713,0792,93127,66110,62,167107,80196,458Muhe District45,658026,65832,434032,14439,460039,46071,066071,066Soroti District21,7433,700 <td></td>													
Petete 22,269 3,744 18,525 26,434 4,444 21,990 31,377 5,275 26,102 52,479 8,823 43,656 Buseta 31,926 8,008 23,918 37,897 9,506 28,391 44,984 11,283 33,701 75,237 18,872 56,363 Kibuku 14,911 0 14,911 17,700 0 17,700 21,010 0 21,010 35,139 0 35,135 Tirinyi 16,786 0 16,786 19,925 0 19,925 23,651 0 23,651 39,557 0 39,557 14,943 44,843 24,417 40,388 Kadama 28,717 12,173 16,544 34,088 14,450 14,963 17,152 23,11 67,675 28,687 38,988 Kadama 22,814 2,453 2,469 23,471 3,792 2,931 27,861 51,500 44,92 44,337 Bulangira 21,853 2,040 19,773 <td></td>													
Buseta 31,926 8,008 23,918 37,897 9,506 28,391 44,984 11,283 33,701 75,237 18,872 56,365 Kibuku 14,911 0 14,911 17,700 0 17,700 21,010 0 21,010 35,139 0 35,139 Tirinyi 16,786 19,925 0 19,925 23,651 0 23,651 39,557 0 39,557 Kirka 18,885 1,747 17,138 22,417 2,074 20,343 26,609 2,462 24,148 44,505 41,17 40,387 Kadama 22,814 2,345 20,469 27,080 2,784 24,297 3,2145 3,304 28,841 51,500 48,207 Bulangira 21,853 2,080 19,737 25,940 2,469 23,417 3,070 27,861 51,500 48,237 Bulangira 21,743 3,700 18,042 26,453 45,407 48,170 63,2,434 30,70	-										-		
Kibuku14,911014,91117,700017,70021,010021,01035,139035,139Tirinyi16,786016,78619,925019,92523,651023,65139,557039,557Kirika18,8851,74717,13822,4172,07420,34326,6092,46224,14844,5054,11740,387Kadama28,71712,17316,54434,08814,45019,63840,46317,15223,31167,67528,68738,988Kagumu22,8142,34520,46927,9802,78424,29732,14533,0428,84153,7635,52648,237Bulangira21,8532,08019,77325,9402,46923,47130,7922,93127,86110,02,16710,801954,3653. Soroti District45,71945,71440,497556,12756,12754,40748,172065,5380.039,46071,0660071,066Arapai38,195038,15544,070032,43439,460039,46071,0660071,066Goreir17,649018,04226,65832,4340032,43439,460039,46071,0660071,066Matura38,155034,556024,55454,572026,572102,11330,402101,8220092,120Soroti17,6490 <td></td>													
Trinyi16,786016,78619,925019,92523,651023,65139,557039,557Kirika18,8851,74717,13822,4172,07420,34326,6092,46224,14844,5054,11740,387Kadama28,71712,17316,54434,08814,45019,63840,46317,15223,31167,67528,68738,988Kagumu22,8142,34520,46927,0802,78424,29732,1453,30428,84153,7635,52648,237Bulangira21,8532,08019,77325,9402,46923,47130,7922,93127,86151,50049,0246,598Whole District450,71945,74440,97553,612754,407481,720635,06964,45450,6141,062,167107,801954,3653. Soroti District721,7433,70018,04226,4534,50221,95132,1845,47726,70757,9629,86548,096Arapai38,195038,19546,470046,47056,538056,538101,8220101,822Soroti17,649017,64921,473021,47326,125026,12547,050047,050Gweri48,1311,82046,31158,5592,21456,34571,2462,69468,552128,3104,852123,458Asuret37,310 <td></td> <td>-</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>-</td> <td></td> <td></td> <td></td> <td></td> <td></td>		-						-					
Kirika18,8851,74717,13822,4172,07420,34326,6092,46224,14844,5054,11740,387Kadama28,71712,17316,54434,08814,45019,63840,46317,15223,31167,67528,68738,988Kagumu22,8142,34520,46927,0802,78424,29732,1453,30428,84153,7635,52648,237Bulangira21,8532,08019,77325,9402,46923,47130,7922,93127,86151,5004,90246,598Whole District450,71945,744404,975536,12754,407481,720635,06964,454570,6141,062,167107,801954,3633. Soroti District71,0433,70018,04226,4534,50221,95132,1845,47726,70757,9629,86548,098Katine26,658026,65832,434032,43439,460039,46071,066071,066Arapai38,195038,19546,470046,47056,538056,538101,8220101,822Kamuda34,556034,55642,043021,47326,125026,12547,050047,050Soroti17,649071,64921,473021,47326,125026,12547,050047,055Gweri48,1311,82046,311<			1										
Kadama28,71712,17316,54434,08814,45019,63840,46317,15223,31167,67528,68738,988Kagumu22,8142,34520,46927,0802,78424,29732,1453,30428,84153,7635,52648,237Bulangira21,8532,08019,77325,9402,46923,47130,7922,93127,86151,5004,90246,598Whole District450,71945,744404,975536,12754,407481,720635,06964,454570,6141,062,167107,801954,3653. Soroti District71,433,70018,04226,65848,05221,95132,1845,47726,07757,9629,86548,098Katine26,658026,65832,434032,43439,460039,46071,066071,066Arapai38,195038,19546,470046,47056,538056,538101,8220101,822Kamuda34,556034,55642,043021,47326,125026,12547,050047,056Soroti17,649017,64921,473021,47326,125026,522128,3104,852123,458Asuret37,310037,31045,393045,39355,2279,46130,369030,36954,69298,6931,33383,766Kitea <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>													
Kagumu22,8142,34520,46927,0802,78424,29732,1453,30428,84153,7635,52648,237Bulangira21,8532,08019,77325,9402,46923,47130,7922,93127,86151,5004,90246,598Whole District450,71945,744404,975536,12754,407481,720635,06964,454570,6141,062,167107,801954,3653. Soroti District21,7433,70018,04226,4534,50221,95132,1845,47726,70757,9629,86548,098Katine26,658026,65832,434032,43439,460039,46071,066071,066Arapai38,195038,19546,470046,47056,538056,538101,8220101,822Kamuda34,556034,55642,043021,47326,125026,12547,050047,050Gweri48,1311,82046,31158,5592,21456,34571,2462,69468,552128,3104,852123,458Asuret37,310037,31045,393045,39355,227055,22799,461099,461Atiira20,516020,51624,961024,96130,369030,36954,692054,692Olio31,92050031,42038,835 <td< td=""><td></td><td>-</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>1</td></td<>		-											1
Bulangira 21,853 2,080 19,773 25,940 2,469 23,471 30,792 2,931 27,861 51,500 4,902 46,598 Whole District 450,719 45,744 404,975 536,127 54,407 481,720 635,069 64,454 570,614 1,062,167 107,801 954,365 3. Soroti District 7 57,962 9,865 48,098 48,098 48,1720 635,049 0 39,460 71,066 0 71,066 0 71,066 0 71,066 0 71,066 0 71,066 0 71,066 0 92,120 0 92,120 0 92,120 0 92,120 0 92,120 0 92,120 0 92,120 0 92,120 0 94,61 34,556 42,043 0 42,043 51,51 0 51,51 92,120 0 92,120 0 92,120 0 94,61 34,556 42,043 0 42,043 51,515 0										1			
Whole District450,71945,744404,975536,12754,407481,720635,06964,454570,6141,062,167107,801954,3653. Soroti DistrictTubur21,7433,70018,04226,4534,50221,95132,1845,47726,70757,9629,86548,098Katine26,658026,65832,434032,43439,460039,46071,066071,066Arapai38,195038,19546,470046,47056,538056,538101,8220101,822Kamuda34,556034,55642,043021,47326,125026,12547,050047,050Soroti17,649017,64921,473021,47326,125026,12547,050047,050Gweri48,1311,82046,31158,5592,21456,34571,2462,69468,552128,3104,852123,458Asuret37,310037,31045,393045,39355,227055,22799,461099,461Atiira20,516020,51624,961024,96130,369030,36954,692054,692Olio31,92050031,42038,83560838,22747,24974046,50985,0931,33383,760Kyere46,9696,00040,96957,145	-												
3. Soroti District 21,743 3,700 18,042 26,653 4,502 21,951 32,184 5,477 26,707 57,962 9,865 48,098 Katine 26,658 0 26,658 32,434 0 32,434 39,460 0 39,460 71,066 0 71,050 0 71,050 0 71,050 0 71,050 0 71,050 0 47,050 0 47,050 0 47,050 0 45,393 55,227 0	0												
Tubur $21,743$ $3,700$ $18,042$ $26,653$ $4,502$ $21,951$ $32,184$ $5,477$ $26,707$ $57,962$ $9,865$ $48,098$ Katine $26,658$ 0 $26,658$ $32,434$ 0 $32,434$ $39,460$ 0 $39,460$ $71,066$ 0 $71,066$ Arapai $38,195$ 0 $38,195$ $46,470$ 0 $46,470$ $56,538$ 0 $56,538$ $101,822$ 0 $101,822$ Kamuda $34,556$ 0 $34,556$ $42,043$ 0 $42,043$ $51,151$ 0 $51,151$ $92,120$ 0 $92,120$ Soroti $17,649$ 0 $17,649$ $21,473$ 0 $21,473$ $26,125$ 0 $26,125$ $47,050$ 0 $47,050$ Gweri $48,131$ $1,820$ $46,311$ $58,559$ $2,214$ $56,345$ $71,246$ $2,694$ $68,552$ $128,310$ $4,852$ $123,458$ Asuret $37,310$ 0 $37,310$ $45,393$ 0 $45,393$ $55,227$ 0 $55,227$ $99,461$ 0 $99,461$ Atiira $20,516$ 0 $20,516$ $24,961$ 0 $24,961$ $30,369$ 0 $30,369$ $54,692$ 0 $54,692$ Olio $31,920$ 500 $31,420$ $38,835$ 608 $38,227$ $47,249$ 740 $46,509$ $85,093$ $1,333$ $83,760$ Kyere $46,969$ $6,000$ $40,969$ $57,145$ $7,300$ $49,845$		450,719	+5,744	404,975	550,127	54,407	401,720	055,009	04,454	570,014	1,002,107	107,801	954,505
Katine26,658026,65832,434032,43439,460039,46071,066071,066Arapai38,195038,19546,470046,47056,538056,538101,8220101,822Kamuda34,556034,55642,043042,04351,151051,15192,120092,120Soroti17,649017,64921,473021,47326,125026,12547,050047,050Gweri48,1311,82046,31158,5592,21456,34571,2462,69468,552128,3104,852123,458Asuret37,310037,31045,393045,39355,227055,22799,461099,461Atiira20,516020,51624,961024,96130,369030,36954,692054,692Olio31,92050031,42038,83560838,22747,24974046,50985,0931,33383,760Kyere46,9696,00040,96957,1457,30049,84569,5268,88160,645125,21315,995109,218Kateta52,7093,11849,59164,1293,79460,33578,0224,61573,407140,5148,312132,202Bugondo34,0263,15630,87041,3983,84037,55850,3674,672 <td></td> <td>21 742</td> <td>3 700</td> <td>18 042</td> <td>26 452</td> <td>4 502</td> <td>21.051</td> <td>32 194</td> <td>5 177</td> <td>26 707</td> <td>57.062</td> <td>0 965</td> <td>10 000</td>		21 742	3 700	18 042	26 452	4 502	21.051	32 194	5 177	26 707	57.062	0 965	10 000
Arapai38,195038,19546,470046,47056,538056,538101,8220101,822Kamuda34,556034,55642,043042,04351,151051,15192,120092,120Soroti17,649017,64921,473021,47326,125026,12547,050047,050Gweri48,1311,82046,31158,5592,21456,34571,2462,69468,552128,3104,852123,458Asuret37,310037,31045,393045,39355,227055,22799,461099,461Atiira20,516020,51624,961024,96130,369030,36954,692054,692Olio31,92050031,42038,83560838,22747,24974046,50985,0931,33383,760Kyere46,9696,00040,96957,1457,30049,84569,5268,88160,645125,21315,995109,218Kateta52,7093,11849,59164,1293,79460,33578,0224,61573,407140,5148,312132,202Bugondo34,0263,15630,87041,3983,84037,55850,3674,67245,69690,7098,41382,295Kadungulu25,8394,50821,33131,4375,48525,95238,2		· ·								í í	-		
Kamuda34,556034,55642,043042,04351,151051,15192,120092,120Soroti17,649017,64921,473021,47326,125026,12547,050047,050Gweri48,1311,82046,31158,5592,21456,34571,2462,69468,552128,3104,852123,458Asuret37,310037,31045,393045,39355,227055,22799,461099,461Atiira20,516020,51624,961024,96130,369030,36954,692054,692Olio31,92050031,42038,83560838,22747,24974046,50985,0931,33383,760Kyere46,9696,00040,96957,1457,30049,84569,5268,88160,645125,21315,995109,218Kateta52,7093,11849,59164,1293,79460,33578,0224,61573,407140,5148,312132,202Bugondo34,0263,15630,87041,3983,84037,55850,3674,67245,69690,7098,41382,295Kadungulu25,8394,50821,33131,4375,48525,95238,2486,67431,57568,88312,01956,865Pingire48,8959,20939,68559,48811,20448													
Soroti17,649017,64921,473021,47326,125026,12547,050047,050Gweri48,1311,82046,31158,5592,21456,34571,2462,69468,552128,3104,852123,458Asuret37,310037,31045,393045,39355,227055,22799,461099,461Atiira20,516020,51624,961024,96130,369030,36954,692054,692Olio31,92050031,42038,83560838,22747,24974046,50985,0931,33383,760Kyere46,9696,00040,96957,1457,30049,84569,5268,88160,645125,21315,995109,218Kateta52,7093,11849,59164,1293,79460,33578,0224,61573,407140,5148,312132,202Bugondo34,0263,15630,87041,3983,84037,55850,3674,67245,69690,7098,41382,295Kadungulu25,8394,50821,33131,4375,48525,95238,2486,67431,57568,88312,01956,865Pingire48,8959,20939,68559,48811,20448,28372,37613,63258,744130,34524,550105,795		-									· · ·		
Gweri 48,131 1,820 46,311 58,559 2,214 56,345 71,246 2,694 68,552 128,310 4,852 123,458 Asuret 37,310 0 37,310 45,393 0 45,393 55,227 0 55,227 99,461 0 99,461 Atiira 20,516 0 20,516 24,961 0 24,961 30,369 0 30,369 54,692 0 59,645 128,131 13,33 83,760 45,696 66,645<													
Asuret37,310037,31045,393045,39355,227055,22799,461099,461Atiira20,516020,51624,961024,96130,369030,36954,692054,692Olio31,92050031,42038,83560838,22747,24974046,50985,0931,33383,760Kyere46,9696,00040,96957,1457,30049,84569,5268,88160,645125,21315,995109,218Kateta52,7093,11849,59164,1293,79460,33578,0224,61573,407140,5148,312132,202Bugondo34,0263,15630,87041,3983,84037,55850,3674,67245,69690,7098,41382,295Kadungulu25,8394,50821,33131,4375,48525,95238,2486,67431,57568,88312,01956,865Pingire48,8959,20939,68559,48811,20448,28372,37613,63258,744130,34524,550105,795		-									-		
Atiira20,516020,51624,961024,96130,369030,36954,692054,692Olio31,92050031,42038,83560838,22747,24974046,50985,0931,33383,760Kyere46,9696,00040,96957,1457,30049,84569,5268,88160,645125,21315,995109,218Kateta52,7093,11849,59164,1293,79460,33578,0224,61573,407140,5148,312132,202Bugondo34,0263,15630,87041,3983,84037,55850,3674,67245,69690,7098,41382,295Kadungulu25,8394,50821,33131,4375,48525,95238,2486,67431,57568,88312,01956,865Pingire48,8959,20939,68559,48811,20448,28372,37613,63258,744130,34524,550105,795				•									
Olio31,92050031,42038,83560838,22747,24974046,50985,0931,33383,760Kyere46,9696,00040,96957,1457,30049,84569,5268,88160,645125,21315,995109,218Kateta52,7093,11849,59164,1293,79460,33578,0224,61573,407140,5148,312132,202Bugondo34,0263,15630,87041,3983,84037,55850,3674,67245,69690,7098,41382,295Kadungulu25,8394,50821,33131,4375,48525,95238,2486,67431,57568,88312,01956,865Pingire48,8959,20939,68559,48811,20448,28372,37613,63258,744130,34524,550105,795				E									1
Kyere46,9696,00040,96957,1457,30049,84569,5268,88160,645125,21315,995109,218Kateta52,7093,11849,59164,1293,79460,33578,0224,61573,407140,5148,312132,202Bugondo34,0263,15630,87041,3983,84037,55850,3674,67245,69690,7098,41382,295Kadungulu25,8394,50821,33131,4375,48525,95238,2486,67431,57568,88312,01956,865Pingire48,8959,20939,68559,48811,20448,28372,37613,63258,744130,34524,550105,755											· · ·		E
Kateta52,7093,11849,59164,1293,79460,33578,0224,61573,407140,5148,312132,202Bugondo34,0263,15630,87041,3983,84037,55850,3674,67245,69690,7098,41382,295Kadungulu25,8394,50821,33131,4375,48525,95238,2486,67431,57568,88312,01956,865Pingire48,8959,20939,68559,48811,20448,28372,37613,63258,744130,34524,550105,795		-		=							-	E	
Bugondo 34,026 3,156 30,870 41,398 3,840 37,558 50,367 4,672 45,696 90,709 8,413 82,295 Kadungulu 25,839 4,508 21,331 31,437 5,485 25,952 38,248 6,674 31,575 68,883 12,019 56,865 Pingire 48,895 9,209 39,685 59,488 11,204 48,283 72,376 13,632 58,744 130,345 24,550 105,795	-		1										
Kadungulu 25,839 4,508 21,331 31,437 5,485 25,952 38,248 6,674 31,575 68,883 12,019 56,865 Pingire 48,895 9,209 39,685 59,488 11,204 48,283 72,376 13,632 58,744 130,345 24,550 105,795													132,202
Pingire 48,895 9,209 39,685 59,488 11,204 48,283 72,376 13,632 58,744 130,345 24,550 105,795	-										-		
	-	-									-		
Whole District 485,116 32,012 453,104 590,218 38,947 551,270 718,090 47,386 670,705 1,293,240 85,339 1,207,901	Pingire				-								105,795
	Whole District	485,116	32,012	453,104	590,218	38,947	551,270	718,090	47,386	670,705	1,293,240	85,339	1,207,901

Table 16-36 Present and Future Population of Rural Areas in Priority Districts

	20		20	15	20	20	20	
		Water		Water		Water		Water
Sub county	Population	Demand (m ³ /day)	Population	Demand (m ³ /day)	Population	Demand (m ³ /day)	Population	Demand (m ³ /day)
Sub-county (Consumption)	(15 liter/d		(20 liter/d		(25 liter/d		(30 liter/d	
1. Iganga District		uj/oupiu)	(20 mer, a	uj/oupitu)	(20 mm) a	ay, eapita)	(50 mer) a	aj, eupita)
Ikumbya	29,764	446	35,196	704	41,619	1,040	68,815	2,064
Bukooma	37,626	564	44,492	890	52,611	1,315	86,990	2,610
Bulongo	29,532	443	34,921	698	41,294	1,032	68,277	2,048
Irongo	31,765	476	37,562	751	44,417	1,110	73,441	2,203
Nawampiti	23,863	358	28,217	564	33,367	834	55,170	1,655
Bukanga	43,530	653	51,474	1,029	60,867	1,522	100,640	3,019
Waibuga	31,276	469	36,983	740	43,732	1,093	72,309	2,169
Nawandala	29,707	446	35,128	703	41,539	1,038	68,683	2,060
Nambale	40,701	611	48,128	963	56,911	1,423	94,100	2,823
Nabitende	30,573	459	36,152	723	42,749	1,069	70,684	2,121
Namungalwe	36,414	546	43,059	861	50,916	1,273	84,187	2,526
Nakalama	33,428	501	39,528	791	46,741	1,169	77,284	2,319
Bulamagi	45,093	676	53,322	1,066	63,052	1,576	104,254	3,128
Nakigo	22,919	344	27,102	542	32,047	801	52,989	1,590
Namalemba	19,250	289	22,763	455	26,917	673	44,507	1,335
Buyanga	35,827	537	42,365	847	50,096	1,252	82,830	2,485
Ibulanku	49,567	743	58,612	1,172	69,308	1,733	114,597	3,438
Makuutu	27,022	405	31,954	639	37,785	945	62,475	1,874
Whole District	597,855	8,968	706,957	14,139	835,968	20,899	1,382,230	41,467
2. Pallisa District	<u>t</u>							
Gogonyo	22,640	340	26,874	537	31,900	798	53,354	1,601
Agule	27,599	414	32,760	655	38,887	972	65,040	1,951
Kameke	26,932	404	33,084	662	37,947	949	63,468	1,904
Apopong	23,590	354	28,002	560	33,239	831	55,592	1,668
Kasodo	27,515	413	32,660	653	38,768	969	64,841	1,945
Pallisa	13,809	207	16,392	328	19,457	486	32,543	976
Puti-Puti	21,624	324	25,669	513	30,469	762	50,960	1,529
Kamuge	19,036	286	22,597	452	26,823	671	44,861	1,346
Kibale	28,021	420	33,262	665	39,482	987	66,035	1,981
Butebo	24,527	368	29,114	582	34,558	864	57,800	1,734
Kakoro	17,936	269	21,291	426	25,273	632	42,269	1,268
Kabwangasi	19,328	290	22,943	459	27,234	681	45,549	1,366
Petete	22,269	334	26,434	529	31,377	784	52,479	1,574
Buseta	31,926	479	37,897	758	44,984	1,125	75,237	2,257
Kibuku	14,911	224	17,700		21,010	525	35,139	
Tirinyi	16,786	252	19,925	398	23,651	591	39,557	1,187
Kirika	18,885	283	22,417	448	26,609	665	44,505	1,335
Kadama	28,717	431	34,088	682	40,463	1,012	67,675	2,030
Kagumu	22,814	342	27,080	542	32,145	804	53,763	1,613
Bulangira	21,853	328	25,940	519	30,792	770	51,500	1,545
Whole District	450,719	6,761	536,127	10,723	635,069	15,877	1,062,167	31,865
3. <u>Soroti District</u>		200	26.452	50 0	22.104	005	57.000	1 720
Tubur Katina	21,743	326	26,453	529	32,184	805	57,962	1,739
Katine	26,658	400	32,434	649 020	39,460	987 1 412	71,066	2,132
Arapai Kanna da	38,195	573	46,470	929 841	56,538	1,413	101,822	3,055
Kamuda	34,556	518	42,043	841	51,151	1,279	92,120	2,764
Soroti	17,649	265 722	21,473	429	26,125	653 1 781	47,050	1,411
Gweri	48,131	722	58,559 45,202	1,171 908	71,246	1,781	128,310	3,849
Asuret	37,310	560 208	45,393		55,227 20,260	1,381	99,461 54,602	2,984
Atiira	20,516	308 470	24,961	499 777	30,369	759	54,692 85.003	1,641
Olio Kuara	31,920	479 705	38,835	777	47,249	1,181	85,093	2,553
Kyere Katata	46,969	705	57,145	1,143	69,526 78,022	1,738	125,213	3,756
Kateta	52,709 34,026	791 510	64,129 41 208	1,283	78,022	1,951	140,514	4,215
Bugondo	34,026	510	41,398	828 620	50,367	1,259	90,709	2,721
Kadungulu Pingire	25,839 48,895	388 733	31,437 59,488	629 1 190	38,248 72 376	956 1 809	68,883 130 345	2,066
Pingire Whole District	48,895	733	59,488	1,190	72,376	1,809	130,345	3,910
Whole District	485,116	7,277	590,218	11,804	718,090	17,952	1,293,240	38,797

Table 16-37 Future Water Demand of Rural Areas in Priority Districts

16.4.5 Water Supply Plan

The water supply plan for the master plan consists of i) the provision of new water supply facilities to improve the access to safe water, ii) the repairing of existing water supply facilities to recover the access to safe water, and iii) the replacement of water supply facilities to keep the access to safe water properly.

The water supply facilities required for each term are planned for each sub-county considering the followings.

Since the coverage of RGCs is found to be low comparing with the village areas other than RGCs, the water supply facilities are provided for RGCs with higher priority than the other areas and complete substantially in the short and the middle term plans. However, the RGCs having existing piped water supply facilities are put lower priority and their implementations are planned for the middle and the long term plans.

Second priority is given to the village areas of which coverage values are lower, and much gains of coverage is considered. The population covered by one (1) borehole is set at 300 as applied in SIP in the calculation of coverage by boreholes with hand pump.

The provision of water supply facilities are so determined that the coverage of the whole district achieves the target coverage set for each term.

The repair of the non-functional facilities is planned to be conducted in the short and the middle terms.

The replacement of the existing water supply facilities is planned considering the life period of 25 years in accordance with the setting in SIP; actually four (4) % of the existing boreholes have to be replaced every year.

(1) Construction of New Water Supply Facilities

1) Water Supply Facilities for RGC Areas

It is necessary to improve the coverage values in the RGCs urgently. RGCs are divided into three (3) groups in terms of the present coverage as shown in Figure 16-23; RGCs of good, medium and poor coverage have low, medium and high priorities in implementation of required schemes. The schemes for furnishing required water supply systems are proposed to be implemented for those of high, medium and low priorities in the short, the medium and the log term plans, respectively.

The implementation term of water supply facilities for RGCs is tabulated in Table 16-38, and the locations and the implementation terms of such RGC facilities are illustrated in Figure 16-28. There are 57 RGCs in the priority districts excluding those having the existing facilities, and the water supply facilities of 39 RGCs which are given higher priorities due to lower coverage in each district are planned be provided in the short term (2015). The 39 RGCs for the short term plan consist of 21 RGCs for the Iganga district, 11 RGCs for the Pallisa district and 7 RGCs for the Soroti district. Since in some RGCs 100 % of coverage has been achieved by the existing facilities, 100 % of coverage is

substantially achieved for RGCs by the end of middle term plan. Then, the extension word of such RGC facilities and the construction of deep boreholes with hand pump are considered to be main work in the middle term plan.

Short Term Plan (2015)	Middle Term Plan (2020)	Long Term Plan (2035)	Short Term Plan (2015)	Middle Term Plan (2020)	Long Term Plan (2035)
1. Iganga District		(2000)	2. Pallisa District		(2000)
Ikumbya Bukooma Naigobya Nakabugu Kyanvuma Lambala Nawampiti Buwologoma Bumanya Busiiro Busalamu	Ikonia Nawandala Nakigo Kabira Ibulanku T/C	Waibuga Bugono Wailama	Kapala Agule Kameke Kibale Pallisa Butebo Boliso ITC Kasassira Buseta Nabisuwa Kabweri Kadama	Gogonyo Kabole Kamuge Petete Kigumu Bulangira	
Namusisi			11 sites	6 sites	-
Nambale Nabitende B.			3. Soroti District ((11 sites)	
Nabitende B. Nabitende K. Namungalwe Kiwanyi Nakalama Busesa Nakivumbi Nondwe			Acuna Tubur Kagwara Port Kidetok Pingire Etem Mulondo Mugarema	Gweri Iningo Pingire Corner	Kasilo
21 sites	5 sites	3 sites	7 sites	3 sites	1 site
			39 sites	14 sites	4 sites

 Table 16-38
 RGCs and Implementation Term

The constructed piped water supply facilities are extended as the population of the respective RGC grows up. The number of water kiosks and the distance of distribution pipelines are required to be increased as the population and the water supply areas are increased and expanded, and the necessary extension of water supply facilities are also considered in the master plan.

2) Water Supply Facilities for Rural Areas Other than RGCs

The water supply facilities are also provided to the villages in the rural areas other than RGCs. The boreholes with hand pump are considered for these areas. The hand pump wells are considered to serve 300 people in the village areas as set in SIP, and the coverage of water supply facilities is calculated based on this value in Uganda.

The average of coverage values are 69.1 %, 64.2 % and 71.9 % for the Iganga, the Pallisa and the Soroti districts, respectively, and these values are considered rather better than the national average value of 63 %, which are rather better than the national average of 63 %. To achieve the targets of 77 %, 83 % and 100 % for the district average in the short, the middle and the long term plans, numbers of boreholes are required to be constructed in these areas.

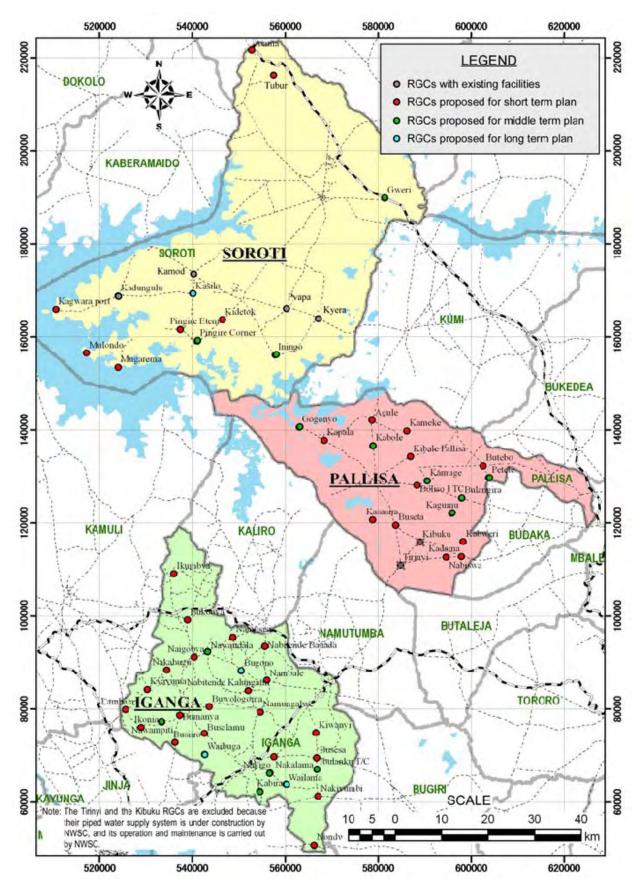


Figure 16-28 Location and Implementation Term of RGC

As shown in Figure 16-24, sub-counties in the priority districts are divided into three (3) groups in terms of their coverage values; sub-counties of good, medium and poor coverage have low, medium and high priorities in implementation of required schemes. High gain of coverage values is proposed for the sub-counties of high priority, while low gain of coverage values is for those of low priority. The number of deep boreholes to be constructed for each sub-county in each implementation term is tablated in Table 16-41.

(2) Repair of Non-functional Water Supply Facilities

As summarized in Table 16-42, the about 10 to 15 % of the existing water supply facilities are not functioning, and it is urgently necessary to repair such non-functional facilities. Total number of the facilities required to be repaired reaches about 400. It is proposed to repair such non-functional facilities by 2020 considering its urgency as tabulated below.

 Table 16-39
 Number of Non-functional Water Supply Facilities to be Repaired

District	2015	2020	Total
Iganga	70	69	139
Pallisa	47	47	94
Soroti	84	84	168

(3) Replacement of Water Supply Facilities

Replacement of the constructed facilities is also considered important in order to keep the water supply situation in rural areas. The life of borehole facilities is set at 25 years in SIP, which is considered that four (4) % of the existing boreholes have to be replaced every year. Number of boreholes to be constructed for replacement of the existing ones is tabulated for each sub-county in Table 16-41, and summarized for each priority district as follows:

 Table 16-40
 Number of Boreholes to be Replaced in Priority Districts

District	2015 2020		2035	Total
Iganga	180	252	1,491	1,923
Pallisa	160	233	1,297	1,698
Soroti	169	244	1,532	1,945

(4) Water Supply Facilities Proposed to be Furnished

The achievement of improving coverage of each priority district is set to fulfill the target of each term. The present coverage of the Iganga, the Pallisa and the Soroti districts are 63.0 %, 56.5 % and 70.4 %, respectively, and the master plan is so prepared that these coverage values of each district are set to reach 77 %, 83 % and 100 % in 2015 for the short term, 2020 for the middle term and 2035 for the long term, respectively.

The Development Study on Water Resources Development and Management for Lake Kyoga Basin										
Final Report -Supporting- Chapter 16 Master Plan of Rural Water Supply										
Table 16-41Number of Water Supply Facilities to be Constructed and Replaced in PriorityDistricts										

Sub-county	Existing Facilities in 2010	Facilities to be Constructed in Short Term Plan (2015)	Total Facilities in 2015	Facilities to be Replaced in Short Term Plan (2015)	Facilities to be Constructed in Middle Term P(2020)	Total Facilities in 2020	Facilities to be Replaced in Middle Term Plan (2020)	Repaired Non-functional Facilities	Facilities to be Constructed in Long Term Plan (2035)	Total Facilities in 2035	Facilities to be Replaced in Long Term Plan (2035)
1. Iganga District											
Ikumbya	50	15	65	12	27	92	16	4	120	216	93
Bukooma	51	16	67	12	31	98	17	13	148	259	108
Bulongo	37	13	50	9	15	65	12	2	93	160	68
Irongo	31	14 11	45	8	27 15	72	12	4	114 79	<u> 190</u> 123	79 50
Nawampiti Bukanga	39	11	<u>26</u> 56	10	33	41 89	7 15	1	158	248	102
Waibuga	25	17	40	7	18	58	10	5	138	184	73
Nawandala	34	24	58	10	25	83	15	5	112	200	85
Nambale	49	12	61	12	17	78	14	5	79	162	73
Nabitende	41	24	65	11	25	90	16	2	113	205	89
Namalemba	41	12	53	10	14	67	13	2	60	129	59
Namungalwe	47	12	59	11	14	73	14	1	93	167	73
Buyanga	37	30	67	11	31	98	17	4	139	241	102
Nakalama	39	16	55	10	23	78	14	3	102	183	79
Bulamagi	48	22	70	12	26	96	17	7	176	279	113
Nakigo	32	10	42	8	12	54	10	7	68	129	55
Ibulanku	58	22 21	80	<u>14</u> 8	31	111 71	20 13	4	163 97	278	117
Makuutu Whole District	28 702	306	1,008	180	406	1,414	252	4 76	2,035	3,525	73 1,491
2. Pallisa District	702	300	1,008	180	400	1,414	232	70	2,035	5,525	1,491
Gogonyo	18	22	40	6	21	61	11	1	86	148	63
Agule	26	26	52	8	26	78	14	6	110	194	82
Kameke	19	28	47	7	23	70	12	3	102	175	74
Kibale	24	28	52	8	27	79	14	4	108	191	82
Butebo	30	15	45	8	19	64	11	7	93	164	69
Kakoro	18	10	28	5	13	41	7	0	84	125	50
Kabwangasi	30	12	42	8	14	56	10	2	62	120	53
Apopong	26	27	53	8	23	76	13	0	97	173	75
Kasodo Pallisa	42	36 11	78	13	31 10	109 40	19 8	1	102 61	212	97
Puti-Puti	32	11	48	9	10	64	12	0	86	102	43 65
Kamuge	23	10	37	7	10	47	9	5	66	118	50
Petete	23	10	38	7	10	50	9	4	71	125	53
Buseta	34	32	66	11	27	93	16	2	87	182	83
Kibuku	17	18	35	6	16	51	9	0	63	114	50
Tirinyi	33	15	48	9	11	59	11	5	62	126	56
Kirika	34	14	48	9	14	62	12	0	70	132	59
Kadama	39	14	53	10	10	63	12	4	64	131	59
Kagumu	26	26	52	8	22	74	13	1	82	157	70
Bulangira	30	16	46	8	16	62	11	5	82	149	64
Whole District	548	390	938	160	361	1,299	233	51	1,638	2,988	1,297
3. Soroti District Tubur	35	0	35	8	13	48	9	14	85	147	59
Katine	47	24	71	12	25	96	17	4	126	226	<u> </u>
Arapai	49	24	74	12	43	117	20		120	311	129
Kamuda	52	23	76	13	32	108	19	5	160	282	1129
Soroti	29	0	29	6	15	44	8	5	74	123	51
Gweri	52	33	85	14	45	130	22	6	266	402	160
Asuret	48	27	75	13	36	111	19	6	174	291	121
Atiira	41	15	56	10	19	75	14	0	97	172	75
Olio	73	20	93	17	25	118	22	3	141	262	115
Kyere	47	33	80	13	44	124	21	1	212	337	139
Kateta	51	39	90	15	52	142	24	10	259	411	166
Bugondo	44	22	66	12	36	102	17	0	140	242	104
Kadungulu	30	14	44	8	19	63	11	4	106	173	71
Pingire	60	27	87	15	33	120	21	14	167	301	127

 Tab le 16-42
 Functional and Non-functional Water Supply Facilities in Priority Districts

The Development Study on Water Resources Development and Management for Lake Kyoga Basin Final Report -Supporting- Chapter 16 Master Plan of Rural Water Supply

Deep Bochole Sublev Well Protect Spring Total u			Doon	Dorohol	0		Shalla	w Wal		-	- Drotoot	od Cari	20		т.	otol	
I. Jagnap District			Deep I	sorenoi	e		Snanc	w wei	1	1	Protecti	l Sprii	ıg			otai	
Jumbya 50 4 54 42 5 0 5 1000 0 0 - 55 45 59 93 Buksoma 31 2 39 44 97 22 24 500 0 0 0 - 55 45 68 77 Bukanga 31 44 58 12 21 48 57 18 0 22 100 61 6 67 79 Bukanga 39 11 40 97.5 20 2 24 20 22 0 22 100 81 100 81 100 81 100 81 100 81 100 81 100 81 100 14 14 44 14 14 14 14 14 14 14 14 14 14 14 14 15 15 15 16 44 15 16			Non-functional	Total	Functionality (%)	Functionalo	Non-functional	Total	Functionality (%)	Functionalo	Non-functional	Total	Functionality (%)	Functionalo	Non-functional	Total	Functionality (%)
Bukonom S1 13 64 79.7 2 2 4 50.0 0 0 0 - 53 68 77.948 Inungo 31 4 35 88.6 12 2 14 85.7 18 0 18 10.0 65 16 67 91.0 Bukangit 35 3 88.5 12 2 14 80 18 10.0 51 16 67 91.0 Mawandia 25 5 98 87.2 5 100.0 5 2 7 7.1 44 7 65.0 88.2 Namadia 40 2 43 93.3 16 3 19 84.2 11 12 2 50.0 84 92.0 Namadia 41 2 43 93.3 16 3 18 83.7 11 4 4 4 50 13 76 68 <th< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></th<>																	
Bulange 37 2 39 49 1 20 95.0 17 1 18 94.4 77 94.8 77 94.8 77 94.8 77 94.8 77 94.8 77 94.8 77 94.8 77 94.8 77 94.8 77 94.8 77 94.8 77 94.8 77 94.8 77 94.8 77 94.8 77 94.8 77 77 77.8 0 0 0 7 75 9 77 77 9 77 77.8 77 77.8 77 78.7 70 0 1 24 75.7 75.8 70 70.8 70 70.8 70 70.8 70 70.8 70 70.8 70 70.8 70 70.8 70 70.8 70 70.8 70 70.8 70 70.8 70.0 70 70.8 70.0 70 70.8 70.0 70.8		-											-				
irongo 31 4 53 88.0 12 2 14 852 18 00 18 100. 61 6 67 91.0 Brwampit 39 1 40 97.5 20 2 22 00.0 21 100.0 50 11 66 67 91.0 Nawandiu 25 5 30 83.1 25 4 29 82.0 41 0 41 44 7 14 44 7 14 85.3 16 1 7 85.7 3 1 4 75.5 5 4 92.6 Namungitwe 41 2 43 95.3 16 3 19 84.2 1 1 2 50.0 75 6 6 90.0 19 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10		-										••••••	- 04.4				
Navampifi 15 3 18 833 14 8 22 636 21 0 21 100. 50 11 64 84 64 Wahuga 25 5 30 833 25 42 20 862 41 0 41 100. 91 9 100 91.0 Namaled 34 5 39 872 5 100.0 5 2 7 7.1.4 44 7.5 55 4 58.8 Namienha 44 2 43 95.3 6 1 7.8 0 0 0 0 1 1 2.5 4 59.9 37.8 4 90.0 18 1 1 2.5 4 4 4 90.2 18 2.2 100.0 10 100.0 10 100.0 10 100.0 10 100.0 10 100.0 10 10.0 10.0 10.0																	
pukanga 39 1 40 975 20 22 22 00 22 100 81 3 84 96.4 Nanbada 34 5 30 833 25 5 00 5 20 7 7.4 44 7 51 863 Nanbade 40 2 53 93 87 6 1 7 80 0 0 1 4 7 64 7 63 883 Nantned 41 2 43 953 16 3 19 842 1 1 2 500 75 6 6 6 90.0 Nanalama 38 3 4 49 92 13 7 7 80 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 <																	
Wainbage 25 5 30 83.3 25 4 20 86.2 41 00.0 41 00.0 9 9 00.0 Navanadale 49 5 54 90.7 7 2 9 77.8 0<		-										2					
Nambale 49 5 54 90.7 7 2 9 77.8 0 0 0 - 56 7 63 88.9 Namalemba 41 2 43 95.3 16 3 19 84.2 1 1 2 50.0 58 66 490.6 Namalemba 37 4 1 92.2 24 91.7 6 0 0 0 0 55 47 59 32.7 39 82.1 20 90.0 19 10 19 100.0 109 20 29.8 85.3 Nakago 32 7 39 82.1 20 3 23 87.0 7 1 8 87.5 59 11 7 89.10 14 43 90.10 11 14 43 90.10 15 115 85.0 33 84.8 200 121 144.8 14 16 14		25		30	83.3	25	4	29	86.2	41	0	41	100.0	91	9	100	91.0
Nahiende 41 2 43 953 6 1 7 85.7 3 1 4 750 50 4 592.6 Namaneghoa 47 14 84 97.9 22 2 24 91.7 6 0 6 100.0 75 3 78 962.1 Buyanga 37 4 41 90.2 18 2 20 90.0 19 10 00.0 10 - 55 4 592.0 76 76 862 92.7 Bulanagi 48 7 55 87.3 32 87.0 7 18 87.5 59 11 78.9 100.0 15 115 87.0 Makautu 28 4 32 77 7 34 79.4 15 4 10 17 78.9 10.2 18.44 10 10.0 10 11 211 214 89.0 18 1	Nawandala	34	5	39	87.2	5	0	5	100.0	5	2	7	71.4	44	7	51	86.3
Namalemba 41 2 43 95.3 16 3 19 94.2 1 1 2 500 58 6 64 90.6 Namungalve 47 1 48 97.9 22 2 24 91.7 6 0 1 0 </td <td>Nambale</td> <td>49</td> <td>5</td> <td>54</td> <td></td> <td>7</td> <td>2</td> <td></td> <td></td> <td>0</td> <td>0</td> <td>0</td> <td></td> <td>56</td> <td>7</td> <td>63</td> <td></td>	Nambale	49	5	54		7	2			0	0	0		56	7	63	
Namugalve 47 1 48 97.9 22 2 24 91.7 6 0 6 100.0 75 3 78 96.22 Buyanga 37 4 41 90.2 18 2 20 90.0 19 1 20 95.0 76 6 82 9.7 Bulanagi 48 7 55 87.3 42 120 33 28 7.0 7 1 4 87.5 59 11 70 76 778 90.2 283 52 33 84.4 200 11 91.8 4 14 71.4 0 0 0 0 1 83 93.9 84 93.9 14 85.5 Cogonyo 18 1 91 74 10 4 14 71.4 0 4 100.0 34 7 41 82.9 Cogonyo 18 10 21 <												· · · · · · · · ·			-		
Bryangn 37 4 41 90.2 18 0 18 100.0 0 0 - - 55 4 59 93.2 Nakalama 39 3 42 92.9 18 2 20 90.0 19 1 20 95.0 76 6 82 92.7 Nakigo 32 7 39 82.1 20 3 23 87.0 7 1 8 87.5 59 11 70 84.3 Mukutu 28 4 32 87.5 5 0 5 100.0 6 0 6 100.0 34 4 43 97.7 11 4.1 71.4 0 0 - - 28 5 33 84.8 100.0 24 4 4 7 4 10 0 - - 28 5 33 84.8 6 47 87.2 11																	
Nakalama 39 3 42 92.9 18 2 20 90.0 19 10.0 109 20 75 6 87.3 42 13 55 76.4 19 0 19 100.0 109 20 12.9 84.5 Ibulanku 58 4 62 93.5 27 7 34 79.4 15 4 19 78.9 10.0 15 115 87.0 Wakutu 28 4 32 87.5 5 0 5 100.0 6 0 6 100.0 34 43 90.7 Wakutu 28 6 32 81.3 4 1 5 80.0 4 0 4 100.0 34 7 41 82.9 Cogonyo 18 1 1 1 2 50.0 19 9 28 67.7 75 4 79.4 83.0 Kakoro		-															
Bulanagi 48 7 55 87.3 42 13 55 76.4 19 0 19 100.0 109 20 129 84.5 Nakigo 32 7 39 82.1 20 3 23 87.0 7 1 8 87.5 59 11 70 84.3 Makuutu 28 4 32 87.5 5 0 5 100.0 6 0 6 100.0 39 4 43 90.7 Whole District 702 76 77.8 90.2 283 5 335 84.5 200 11 211 94.8 1,182 193 1,324 89.5 Z. Palisa Distric 7 3 81.1 1 1 5 80.0 4 100.0 4 100.0 4 100.0 7 74 83.4 7 74.6 74.6 74.6 74.7 74.6 74.7 84.7		-															
Nakigo 32 7 39 82.1 20 3 23 87.0 7 1 8 87.5 59 11 70 84.3 Dulanku 38 4 62 93.5 27 7 34 79.4 15 4 19 78.9 100 15 115 87.0 Whole District 702 76 77.8 90.2 283.5 52 335 84.5 200 11 211 94.8 1,85 139 1,324 89.5 2. Palisa District 70 71.8 94.7 10 4 14 71.4 0 0 0 - 28 5 33 84.8 Agule 26 6 32 81.3 4 1 5 80.0 4 0 4 80.0 15 11 16 93.8 41 6 47.2 Butebo 30 7 37 81.1 1		-															
Ibulanku 58 4 62 93.5 27 7 34 79.4 15 4 19 78.9 100 15 115 87.0 Makulua 28 4 32 87.5 5 0 5 100.0 6 0 6 100 39 4 43 90.7 Zeallisa District 7 778 90.2 283 52 335 84.5 200 11 10.0 34 7 41 88.5 Zeallisa District 6 32 81.3 4 1 5 80.0 4 0 4 100.0 34 7 41 82.9 Kameke 19 3 22 86.7 2 11 1 12 50.0 15 1 16 93.8 44 67.7 75 4 79 94.9 Kibale 0 18 100.0 2 0 2 100.0 <																	
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$																	
				-	-				-								
Agale2663281.341580.0404100.03474182.9Kameke1932286.443757.11621888.93984783.0Kibale2442885.721366.71511693.84164787.2Butebo3073781.111250.01992867.950176774.6Kakoro18018100.0202100.04224042104.7Appong26026100.0606100.000-32032194.9Appong2602100.021366.7606100.022993.1Palisa1912095.021366.7606100.022993.9Kamuge2352882.1505100.01321586.74724995.9Kamuge2352882.1505100.01912095.04765388.7Petcle2843287.542 <td>2. Pallisa District</td> <td>t</td> <td></td>	2. Pallisa District	t															
Kameke 19 3 22 86.4 4 3 7 57.1 16 2 18 88.9 39 8 47 83.0 Kihale 24 4 28 85.7 2 1 3 66.7 15 1 16 93.8 41 6 47 87.2 Butebo 30 7 37 81.1 1 1 2 50.0 19 928 67.9 50 17 67 74.6 Kakoro 18 0 18 100.0 2 100.0 42 100.0 42 100.0 32 100.0 32 100.0 33 100.0 10 0 - 46 13 47 97.9 94.9 50 33 100.0 13 2 15 86.7 47 2 49 95.9 Kamuge 23 5 28 82.1 5 0 5 100.0 11	Gogonyo	18	1	19	94.7	10	4	14	71.4	0	0	0	-	28	5	33	84.8
Kibale 24 4 28 85.7 2 1 3 66.7 15 1 16 93.8 41 6 47 87.2 Butebo 30 7 37 81.1 1 1 2 50.0 19 9 28 67.9 50 17 67 74.6 Kakoro 18 0 0 2 100.0 22 0 0 2 0 4 0 4 2 46 95.7 75 4 79 94.9 Apopong 26 0 26 100.0 6 0 6 100.0 0 0 - 40 14 79 94.9 Asodo 42 1 40 95.0 2 13 66.7 32 15 87 88.7 10 0 - 42 3 45 93.3 Buteba 34 2 36 94.4 <td< td=""><td></td><td></td><td>6</td><td></td><td>81.3</td><td>4</td><td>1</td><td></td><td></td><td></td><td>0</td><td>4</td><td></td><td>34</td><td></td><td></td><td>82.9</td></td<>			6		81.3	4	1				0	4		34			82.9
Butebo 30 7 37 81.1 1 1 2 50.0 19 9 28 67.9 50 17 67 74.6 Kakoro 18 0 18 100.0 2 0 2 100.0 42 0 42 100.0 Kabwangasi 30 2 32 93.8 1 0 1 100.0 44 2 104 77 5 4 79 94.9 Apopong 26 0 26 100.0 1 366.7 6 0 6 100.0 2 2 2 93.1 Pati-Puti 32 0 32 100.0 2 0 2 100.0 13 2 15 86.7 4 2 4 95.9 Kamuge 23 5 28 82.1 5 0 5 100.0 10 0 0 2 20 0 20 <td></td> <td>-</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>2</td> <td>18</td> <td></td> <td></td> <td></td> <td></td> <td></td>		-									2	18					
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$		-															
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$		-															
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$		-															
Kasodo 42 1 43 97.7 4 0 4 100.0 0 0 0 - 46 1 47 97.9 Pulisa 19 1 20 95.0 2 1 3 66.7 6 0 6 100.0 27 2 29 93.1 Puti-Puti 32 0 32 100.0 2 0 2 100.0 19 1 20 95.0 47 6 53 88.7 Kamuge 23 5 28 82.1 5 100.0 10 0 0 0 - 42 3 45 93.3 Buscia 34 2 36 94.4 8 1 9 88.9 0 0 0 - 42 3 45 93.3 Kibuku 17 0 17 100.0 4 100.0 0 0 - 38 <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>																	
$\begin{array}{c c c c c c c c c c c c c c c c c c c $																	
$\begin{array}{c c c c c c c c c c c c c c c c c c c $		-											100.0				
Petete2843287.542666.73253786.564117585.3Buseta3423694.481988.9000-4234593.3Kibuku17017100.0303100.0000-4234593.3Kibuku17017100.0303100.0000-3864486.4Kirika34034100.0404100.0000-3864486.4Kadama3944390.7101100.0000-4044490.9Kagumu2612796.331475.072977.83644090.0Bulangira3053585.722450.01511693.84785585.5Whole District5485159991.573189180.22122523789.58339492789.93. Soroti District7445192.262875.0404100.05766390.5 <t< td=""><td>Puti-Puti</td><td>32</td><td></td><td>32</td><td></td><td></td><td>0</td><td>2</td><td>100.0</td><td>13</td><td>2</td><td>15</td><td></td><td>47</td><td></td><td>49</td><td></td></t<>	Puti-Puti	32		32			0	2	100.0	13	2	15		47		49	
Buseta3423694.481988.90000-4234593.3Kibuku17017100.0303100.0000-20020100.0Tirinyi3353886.851683.3000-3864486.4Kirika34034100.0404100.000-38038100.0Kadama3944390.7101100.0000-4044490.9Kagumu2612796.331475.072977.836440090.0Bulangira3053585.722450.01511693.84785585.5Whole District5485159991.573189180.22122523789.58339492789.93. Soroti DistrictTubur35144971.4404100.01081855.649227169.0Katine4745192.262875.0404100.0576	Kamuge	23	5	28	82.1	5	0	5	100.0	19	1	20	95.0	47	6	53	88.7
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$	Petete	28	4	32	87.5	4	2	6	66.7	32	5	37	86.5	64	11	75	85.3
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$					ē								-				
Kirika34034100.0404100.00000-38038100.0Kadama3944390.7101100.0000-4044490.9Kagumu2612796.331475.072977.83644090.0Bulangira3053585.7222450.01511693.84785585.5Whole District5485159991.573189180.22122523789.58339492.789.93. Soroti DistrictTubur35144971.4404100.01081855.649227169.0Katine4745192.262875.0404100.05766390.5Arapai4985786.01071758.81531883.374189280.4Kamuda5255791.21292157.152771.469168581.2Soroti2953485.31181957.920222<		-											-				· · · · ·
Kadama3944390.7101100.0000-4044490.9Kagumu2612796.331475.072977.83644090.0Bulangira3053585.7222450.01511693.84785585.5Whole District5485159991.573189180.22122523789.58339492789.93. Soroti DistrictTubur35144971.4404100.01081855.649227169.0Katine4745192.262875.0404100.05766390.5Arapai4985786.01071758.81531883.374189280.4Kamuda5255791.21292157.152771.469168581.2Soroti2953485.31181957.92022290.960157580.0Gweri5265889.71031376.912333.3 </td <td></td> <td>-</td> <td></td> <td>-</td> <td></td> <td></td> <td></td> <td></td>		-											-				
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$		-															
Bulangira3053585.7222450.01511693.84785585.5Whole District5485159991.573189180.22122523789.58339492789.93. Soroti DistrictTubur35144971.4404100.01081855.649227169.0Katine4745192.262875.0404100.05766390.5Arapai4985786.01071758.81531883.374189280.4Kamuda5255791.21292157.152771.469168581.2Soroti2953485.31181957.92022290.960157580.0Gweri5265889.71031376.912333.363117485.1Asuret4865488.92933290.614014100.091910091.0Atira41041100.0911090.0101		-															
Whole District 548 51 599 91.5 73 18 91 80.2 212 25 237 89.5 833 94 927 89.9 3. Soroti District Tubur 35 14 49 71.4 4 0 4 100.0 10 8 18 55.6 49 22 71 69.0 Katine 47 4 51 92.2 6 2 8 75.0 4 0 4 100.0 57 6 63 90.5 Arapai 49 8 57 86.0 10 7 17 58.8 15 3 18 83.3 74 18 92 80.4 Kamuda 52 5 57 91.2 12 9 21 57.9 20 2 22 90.9 60 15 75 80.0 Gweri 52 6 58 89.7 10 3																	
3. Soroti District Tubur 35 14 49 71.4 4 0 4 100.0 10 8 18 55.6 49 22 71 69.0 Katine 47 4 51 92.2 6 2 8 75.0 4 0 4 100.0 57 6 63 90.5 Arapai 49 8 57 86.0 10 7 17 58.8 15 3 18 83.3 74 18 92 80.4 Kamuda 52 5 57 91.2 12 9 21 57.1 5 2 7 71.4 69 16 85 81.2 Soroti 29 5 34 85.3 11 8 19 57.9 20 2 22 90.9 60 15 75 80.0 Go Gweri 52 6 58 89.7 10 3 13 76.9 1 2 3 33.3 63 11 74 85.1 <td></td> <td>-</td> <td></td> <td></td> <td></td> <td></td> <td></td>												-					
Katine4745192.262875.0404100.05766390.5Arapai4985786.01071758.81531883.374189280.4Kamuda5255791.21292157.152771.469168581.2Soroti2953485.31181957.92022290.960157580.0Gweri5265889.71031376.912333.363117485.1Asuret4865488.92933290.614014100.091910091.0Atiira41041100.0911090.0101100.05115298.1Olio7337696.11511693.8202100.09049495.7Kyere4714897.91441877.81221485.77378091.3Kateta51106183.62283073.311250.074199379.6<																	
Arapai4985786.01071758.81531883.374189280.4Kamuda5255791.21292157.152771.469168581.2Soroti2953485.31181957.92022290.960157580.0Gweri5265889.71031376.912333.363117485.1Asuret4865488.92933290.614014100.091910091.0Atiira41041100.0911090.0101100.05115298.1Olio7337696.11511693.8202100.09049495.7Kyere4714897.91441877.81221485.77378091.3Kateta51106183.62283073.311250.074199379.6Bugondo44044100.02753284.4202100.07357893.6<	Tubur	35	14	49	71.4	4	0	4	100.0	10	8	18	55.6	49	22	71	69.0
Kamuda5255791.21292157.152771.469168581.2Soroti2953485.31181957.92022290.960157580.0Gweri5265889.71031376.912333.363117485.1Asuret4865488.92933290.614014100.091910091.0Atiira41041100.0911090.0101100.05115298.1Olio7337696.11511693.8202100.09049495.7Kyere4714897.91441877.81221485.77378091.3Kateta51106183.62283073.311250.074199379.6Bugondo44044100.02753284.4202100.07357893.6Kadungulu3043488.2891747.1000-38135174.5	Katine	47	4	51	92.2	6	2	8	75.0	4	0	4	100.0	57	6	63	90.5
Soroti2953485.31181957.92022290.960157580.0Gweri5265889.71031376.912333.363117485.1Asuret4865488.92933290.614014100.091910091.0Atiira41041100.0911090.0101100.05115298.1Olio7337696.11511693.8202100.09049495.7Kyere4714897.91441877.81221485.77378091.3Kateta51106183.62283073.311250.074199379.6Bugondo44044100.02753284.4202100.07357893.6Kadungulu3043488.2891747.1000-38135174.5Pingire60147481.15075787.731475.01132213583.7 <td></td> <td></td> <td></td> <td></td> <td>86.0</td> <td>10</td> <td>7</td> <td></td> <td></td> <td>15</td> <td></td> <td></td> <td>83.3</td> <td>74</td> <td></td> <td>92</td> <td>80.4</td>					86.0	10	7			15			83.3	74		92	80.4
Gweri 52 6 58 89.7 10 3 13 76.9 1 2 3 33.3 63 11 74 85.1 Asuret 48 6 54 88.9 29 3 32 90.6 14 0 14 100.0 91 9 100 91.0 Atiira 41 0 41 100.0 9 1 10 90.0 1 0 14 100.0 91 9 100 91.0 Atiira 41 0 41 100.0 9 1 10 90.0 1 0 1 100.0 51 1 52 98.1 Olio 73 3 76 96.1 15 1 16 93.8 2 0 2 100.0 90 4 94 95.7 Kyere 47 1 48 97.9 14 4 18 77.8 12 <td></td>																	
Asuret4865488.92933290.614014100.091910091.0Atiira41041100.0911090.0101100.05115298.1Olio7337696.11511693.8202100.09049495.7Kyere4714897.91441877.81221485.77378091.3Kateta51106183.62283073.311250.074199379.6Bugondo44044100.02753284.4202100.07357893.6Kadungulu3043488.2891747.1000-38135174.5Pingire60147481.15075787.731475.01132213583.7		-															
Atiira41041100.0911090.0101100.05115298.1Olio7337696.11511693.8202100.09049495.7Kyere4714897.91441877.81221485.77378091.3Kateta51106183.62283073.311250.074199379.6Bugondo44044100.02753284.4202100.07357893.6Kadungulu3043488.2891747.1000-38135174.5Pingire60147481.15075787.731475.01132213583.7		-															
Olio 73 3 76 96.1 15 1 16 93.8 2 0 2 100.0 90 4 94 95.7 Kyere 47 1 48 97.9 14 4 18 77.8 12 2 14 85.7 73 7 80 91.3 Kateta 51 10 61 83.6 22 8 30 73.3 1 1 2 50.0 74 19 93 79.6 Bugondo 44 0 44 100.0 27 5 32 84.4 2 0 2 100.0 73 5 78 93.6 Kadungulu 30 4 34 88.2 8 9 17 47.1 0 0 0 - 38 13 51 74.5 Pingire 60 14 74 81.1 50 7 57 87.7 3 <td></td> <td>-</td> <td></td> <td>-</td> <td></td> <td></td> <td></td> <td></td>		-											-				
Kyere4714897.91441877.81221485.77378091.3Kateta51106183.62283073.311250.074199379.6Bugondo44044100.02753284.4202100.07357893.6Kadungulu3043488.2891747.1000-38135174.5Pingire60147481.15075787.731475.01132213583.7		-											-				
Kateta 51 10 61 83.6 22 8 30 73.3 1 1 2 50.0 74 19 93 79.6 Bugondo 44 0 44 100.0 27 5 32 84.4 2 0 2 100.0 73 5 78 93.6 Kadungulu 30 4 34 88.2 8 9 17 47.1 0 0 - 38 13 51 74.5 Pingire 60 14 74 81.1 50 7 57 87.7 3 1 4 75.0 113 22 135 83.7																	
Bugondo 44 0 44 100.0 27 5 32 84.4 2 0 2 100.0 73 5 78 93.6 Kadungulu 30 4 34 88.2 8 9 17 47.1 0 0 0 - 38 13 51 74.5 Pingire 60 14 74 81.1 50 7 57 87.7 3 1 4 75.0 113 22 135 83.7	· · · · · · · · · · · · · · · · · · ·																
Kadungulu 30 4 34 88.2 8 9 17 47.1 0 0 0 - 38 13 51 74.5 Pingire 60 14 74 81.1 50 7 57 87.7 3 1 4 75.0 113 22 135 83.7		-															
		-											-				
Whole District 658 80 738 89.2 227 67 294 77.2 90 21 111 81.1 975 168 1,143 85.3	Pingire	60	14			50			-	3	1			113			83.7
	Whole District	658	80	738	89.2	227	67	294	77.2	90	21	111	81.1	975	168	1,143	85.3

The numbers of water supply facilities and the coverage values calculated for each term are summarized in Table 16-43, and the improvement of coverage in each sub-county is illustrated in Figure 16-29.

	Descriptions	2010 (Present)	2015 (Short Term Plan)	2020 (Middle Term Plan)	2035 (Long Term Plan)	Total
1. Igang	ga District		(0)			
DCC		27.1.0/	(Coverage)	100.0.0/	100.0.0/	
RGC Out of I		27.1 % 69.1 %	95.6 % 73.8 %	100.0 % 79.6 %	100.0 %	-
Whole I		63.0 %	77.1 %	82.6 %	100.0 %	
WHOLE	District		quired Water Supp		100.0 /0	-
s s	Construction	-	21 RGCs	5 RGCs	3 RGCs	29 RGCs
RGCs Areas	Extension	-	-	21 RGCs	26 RGCs	-
	Boreholes	-	306 nos.	406 nos.	2,035 nos.	2,747 nos.
Area	Repair	-	70 nos.	69 nos	-	139 nos.
Other Areas	Replace	-	180 nos.	252 nos.	1,491 nos.	1,923 nos.
	sa District					
			(Coverage)		
RGC		36.5 %	91.8 %	100.0 %	100.0 %	_
Out of I		58.7 %	75.2 %	81.1 %	100.0 %	-
						-
Whole I	District	56.5 %	76.9 %	83.1 %	100.0 %	-
		(Re	quired Water Supp	ly Facilities)		r
RGCs Areas	Construction	-	11 RGCs	6 RGCs	-	17 RGCs
RC Ar	Extension	-	-	11 RGCs	17 RGCs	-
eas	Boreholes	-	390 nos.	361 nos	1,638 nos.	2,389 nos.
Other Areas	Repair	-	47 nos.	47 nos.	-	94 nos.
Oth	Replace	-	160 nos.	233 nos.	1,297 nos.	1,690 nos.
3. Sorot	ti District					
			(Coverage			
RGC		60.1 %	97.2 %	100.0 %	100.0 %	-
Out of I	RGC	71.2 %	75.6 %	81.7 %	100.0 %	-
Whole I	District	70.4 %	77.0 %	82.9 %	100.0 %	-
		(Re	quired Water Supp	ly Facilities)	L	I
jCs eas	Construction	-	7 RGCs	3 RGCs	1 RGC	11 RGCs
RGC Area	Extension	-	-4 RGCs	11 RGCs	14 RGCs	-
as	Boreholes	-	303 nos.	437 nos.	2,202 nos.	2,947 nos.
Other Areas	Repair	-	84 nos.	84 nos.	-	168 nos.
Othe	Replace	-	169 nos.	244 nos.	1,532 nos.	1,945 nos.

 Table 16-43
 Summary of Water Supply Facilities Proposed for Master Plan

The sub-county-wise details such as population, population served, coverages, etc. are sukmmarized in Table 16-44, Table 16-45 and Table 16-46 for the Iganga, the Pallisa and the Soroti districts, respectively.

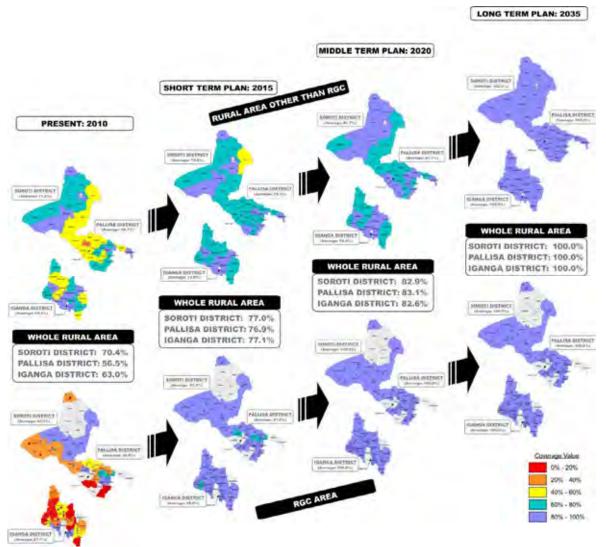


Figure 16-29 Improvement of Sub-county-wise Coverage in Priority Districts

District
r Iganga
Term for
in Each
Provided in Each
Facilities to be
Supply]
Water
Table 16-44

																		Ì	Fir	ıal	R	ер	ort	f	-S	up	ppo	rti	ng	-	С	ha	pt	er	16	М	as	ter	Pl	an	of	Rı	ıra	l W	ate	er i	Sı	ıpp	oly		
	Coverage	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	0.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	Pon	2.948	65,867	68,815	8,749	78,241	066,00	56.910	68,277	8,927	64,514	73,441	9,044	46,126	0/1/cc	17,097	83,543	100,640	71 713	72.309	6,827	61,856	68,683	45,313	48,787	94,100	8,195	62,489	/0,084	44.507	44,507	28,299	55,889	84,18/ 5 021	76.900	82,830	13,501	63,783	0	104,254	0.071	8,9/1	52.989	20,858	93,738	114,597	8,336	54,139	02,458	1.176.772	1,382,230
erm Plan)	Pon	2.948	65,867	68,815	8,749	78,241	066,00	56.910	68,277	8,927	64,514	73,441	9,044	46,126	0/1/00	17,097	83,543	100,640	71 213	72.309	6,827	61,856	68,683	45,313	48,787	94,100	8,195	62,489	/0,084	44.507	44,507	28,299	55,889	5 021	76,900	82,830	13,501	63,783	0	104,254	104,234	8,9/1	52.989	20,858	93,738	114,597	8,336	54,139	62,475 205,458		1,382,230
2035 (Long Term Plan)	29	3	120 nos.		xtension)	148 nos.		93 nos.		(xtension)	114 nos.		ension)	79 nos.	(on)	158 nos.		aon 101	121 105.	Extension)	112 nos.	abala	noarc	79 nos.		ungami	113 nos.		60 nos.			93 nos.		139 nos.			102 nos.		176 nos.	ion),		08 nos.	Extension),	163 nos.			97 nos.		2,035 nos.	
	Water Sunnly Facilities	Ikumbva (Extension)	Borehole		Bukooma (Extension), Naigobya (Extension)	Borehole	Maladuran (Entendian)	Borehole		Kyanvuma (Extension), Lambala (Extension)	Borehole		Ikonia (Extension), Nawampiti (Extension)	Borehole		buwotogoma (Extension), bumanya (Extension), Busiiro (Extension), Busalamu (Extension)	Borehole		Waibuga Borehola		Namusisi (Extension), Nawandala (Extension)	Borehole	Mahitanda Danada (Estancion) Man	(Extension)	Borehole		Bugono (Extension), Nabitende Kalungami (Extension)	Borehole		Borehole		Namungalwe (Extension)	Borehole		RIWANYI (EXTENSION) Borehole		Nakalama (Extension)	Borehole		Borehole	Nakigo (Extension), Kabira (Extens	Wailama	Borehole	Busesa (Extension), Ibulanku T/C (Extension) Nakivumbi (Extension)	Borehole		Nondwe (Extension)	Borehole	RGC	Borehole	
	Coverage	100.0	75.2	76.2	100.0	71.5	100.0	84.1	86.7	100.0	77.6	80.3	100.0	80.2	4.00	100.0	71.4	76.3	100.0	82.0	100.0	75.3	7.77	100.0	84.8	92.1	100.0	75.8	0.6/	9.80	98.8	100.0	82.8	88.0	75.7	77.4	100.0	86.4	0.0	81.7	00.7	0.99	88.8 90.7	100.0	79.1	82.9	100.0	76.3	0.001	79.6	82.6
	Served	1.783	29,949	31,732	5,291	33,837	29,129 6 074	28.944	35,819	5,399	30,275	35,674	5,470	22,367	100,17	10,340	36,089	46,429	34.057	35.857	4,129	28,157	32,286	27,405	25,021	52,426	5,137	28,655	55,792 0	26.601	26,601	17,115	27,991	45,106	35.185	38,772	8,165	33,314	0	51,507	100,10	0,400	29.054	12,615	44,831	57,446	5,042	24,990	50,052	566.318	690,559
e Term Plan)	Pon	1.783	39,836	41,619	5,291	47,320	110,20	34.419	41,294	5,399	39,018	44,417	5,470	27,897	100,00	10,340	50,527	60,867	000	43.732	4,129	37,410	41,539	27,405	29,506	56,911	4,956	37,793	47,749	26.917	26,917	17,115	33,801	016,00	46.509	50,096	8,165	38,576	0	63,052	701,00	07420	32.047	12,615	56,693	69,308	5,042	32,743	1967/1	711.707	835,968
2020 (Middle Term Plan	Water Sumly Facilities	Ikumbva (Extension)	Borehole 27 nos.		(Extension), Naigobya (Exte	Borehole 31 nos.	Molahum (Entracion)	Borehole (Extension) 15 nos.		Kyanvuma (Extension), Lambala	Borehole 27 nos.		awampiti (Extension)	Borehole 15 nos.	u wologoma (Extension), Bumanya	(Extension), Busiiro (Extension), Busalamu (Extension)	Borehole 33 nos.		Bovehole - 18 nos		Namusisi (Extension), Nawandala	Borehole 25 nos.	khitanda Banada (Estancion). Nambala	(Extension)	Borehole 17 nos.		Nabitende Kalungami (Extension)	Borehole 25 nos.		Borehole - 14 nos.		Namungalwe (Extension)	Borehole 14 nos.		KIWAINYI (EXTENSION) Borehole 31 nos.		a (Extension)	Borehole 23 nos.	,	Borehole 26 nos.		sabira	Borehole 12 nos.	Busesa (Extension), Ibulanku T/C, Nakivumbi (Extension)	Borehole 31 nos.		(Extension)	Borehole 22 nos.	BGC	Borehole 406 nos.	
	Coverage	100.0 1	+	2	-	61.5 B	-	+	-	100.0 K	-	71.5		_	_	100.0	-	68.0	e 1 2 1	+	-	\vdash	_	_		89.5	100.0	\vdash	/1.0	0.0 98.8	+		-	-	65.7 B	-	\rightarrow	81.4 B	0.0	- 1	_		86.0 86.0		74.1 B			66.3 B	_	73.8 B	
	Served Co	1.508	21,958	23,466	4,475	24,614	5 014	24.478	30,291	4,566	22,303	26,869	3,485	17,736	21,220	8,745	26,247	34,991	006	30.462	2,860	20,648	23,508	23,176	19,912	43,088	4,622	21,037	60,02	22.495	22,495	14,474	23,671	58,145	25.822	28,856	6,905	26,542	0	43,558	40,000	000.0	23.298	9,075	35,515	44,590	4,264	18,365	22,628	44,460	544,889
2015 (Short Term Plan)	Pon	1.508		35,196		40,017				4,566		37,562				8,745	_		26 472							48,128	4,191		20,122 0		22,763	14,474		45,02		42,365		32,623		53,322		4,500	27.102		47,944			27,690		601.873 4	
2015 (Shoi	Water Sumuly Facilities	Rumbva	Borehole 15 nos.		1, Naigobya	Borehole 16 nos.	Molochrone	Borehole 13 nos.		Kyanvuma, Lambala	Borehole 14 nos.		iii	Borehole 11 nos.	alama Dumania Dusiina	buworogoma, bumanya, busino, Busalamu	Borehole 17 nos.		Bowhola 15 nos		Namusisi	Borehole 24 nos.		Nabitende Banada, Nambale	Borehole 12 nos.		Nabitende Kalungami	Borehole 24 nos.		Borehole - 12 nos.		Namungalwe	Borehole 12 nos.		KIWanyi Borehole 30 nos.			Borehole 16 nos.		Borehole 22 nos.			Borenole IU nos.	Busesa, Nakivumbi	Borehole 22 nos.			Borehole 21 nos.		ole 306 nos.	
		3.5 Ik	-	59.6		_	_	84.1 Bon	+	7.8 Kya	+	57.7		72.2 Bor	_		-	52.9	+	82.8	-	\vdash	_	_		46.5		\vdash	8.1C	98.8 Bor	+	22.9 Nan	_	_	50.7 Bor	-	\rightarrow	78.4 Bor 67.7	0.0		01./	-	88.2 Bor		71.1 Bor			51.3 Bor	45.6 27.1 RGC	69.1 Bor	-
sent)	ed Coverage	0	430	730	600	800	00+	20.700	300	300	024	18,324	1,800	14,400	007	1,900	112	012	000 35	006	1,200	13,448	14,648	2,700	16,206	906	2,100	13,736	058,01	19.024	024	2,800	018	,818	848	17,748	1,000	518	0	36,836	000	5,500	20.212	3,800	28,818	518	300	018	518	948	448
2010 (1	Pon Pon	75		29,764 17,730			07 07					31,765 18,3		19,951 14,4 22,862 162			36,135 21,112	23	30 807 75 (26,754 13,4	_			_			5,CI <u>6,C,U5</u> 0		ļ	12,240 2,8		77	33.261 16.8			27,588 21,618 33,478 77,618					22.919 20.2 22.919 20.2		40,545 28,8			23,417 12,018		-	597,855 376,448
	Po	RGC 1.	-			+			-	RGC 3,	-			_	7		-	43	-	+			_			4	RGC 3,		101al 50,				_	Lotal 56,	+	-		+			1		_		-			_	1 otal 2/, RGC 88	+	\vdash
	Sub-county		Out of RGC			Out of RGC		Out of RGC			Out of RGC			Out of RGC			Out of RGC		Out of DGC	TOINO		Out of RGC			Out of RGC			Out of RGC		Out of RGC			Out of RGC		Out of RGC			Out of RGC Total		Out of RGC			Cutt of RGC Total		Out of RGC			Out of RGC		Out of	.L
	Sub-	010	Ikumbya			Bukooma		Bulongo			Irongo			Nawampiti		Bukanga	Dubanga		Waihing	waluuga		Nawandala			Nambale			Nabitende		Namalemba			Namungalwe		Buvanga	0		Nakalama		Bulamagi		Nakioo	0		Ibulanku			Makuutu		Whole District	

					Table	CL-DI	17 au	viater puppin	TIANTIT									
Sub-county	ntv	Pon.	2010 (Present) Served Pon C	Coverage(%)	201 Water Supply Facilities	12015 (SI	2015 (Short Term Plan) tries Pon. Ser	an) Served Pon Co	verage(%)	Water Supply Faci	2020 (Middle Term Plan) lities Pon.	_	Served Pon Cov	verage(%)	2035 (Long Term Plan) Water Supply Facilities Pon.	I erm Plan)	Served Pon	overage(%)
	RGC	2,486		36.2	Kapala		2,950	2,574	87.2	Gogonyo, Kapala (Exter	$\left \right $		3,502	100.0	(Extension), Kapa	5,858	5,858	100.0
Gogonyo	Out of RGC	20,154	9,000	44.7	Borehole	22 nos.	23,924	15,468	64.7	Borehole	21 nos. 2		21,768	76.7	Borehole 86 nos.	47,496	47,496	100.0
	I otal	22,640	9,900	43.7	A and a		26,8/4	18,042	1.00.0	A coulor		31,900	25,271	100.0	A suits (Estrension)	50,354	5 027	100.0
Amla	Out of RGC	75 087	10 542	0.00	Borehole	26 noe	2,700	18 468	62.0	Ague (Extension) Rorehole	26 nos	-	26.163	74.0	Ague (Extension) Borehole 110 nos	50105	50108	100.0
	Total	27,599	11.942	43.3	NORMO	70 1103	32.760	21.456	65.5		-		29.709	76.4		65.040	65.040	100.0
	RGC	2,600	1,200	46.2	Kameke		3,194	3,194	100.0	Kameke (Extension)			3,663	100.0	Kameke (Extension)	6,127	6,127	100.0
Kameke	Out of RGC	24,332	11,106	45.6	Borehole	28 nos.	29,890	19,621	65.6		23 nos. 3		26,619	77.6	Borehole 102 nos.	57,340	57,340	100.0
	Total	26,932	12,306	45.7			33,084	22,815	69.0				30,283	79.8		63,468	63,468	100.0
l	RGC	2,387	906	37.7	Kibale Pallisa		2,833	2,833	100.0	allisa (Extension)	_		3,363	100.0	Illisa (Extension)	5,625	5,625	100.0
Kibale	Out of RGC	25,634	11,630	45.4	Borehole	28 nos.	30,428	19,891	65.4	Borehole 27	27 nos. 3	-	27,945	77.4	Borehole 108 nos.	60,410	60,410	100.0
	Total	28,021	12,530	44.7			33,262	22,724	68.3				31,308	79.3		66,035	66,035	100.0
	Ruc Pares	27,287	300	7.07	Butebo		1,308 12770	1,558	100.0	extension)	+	1,012	1,612	100.0	(xtension)	2,090	2,090	100.0
Butebo	Out of KGC	25,585	17,000	70.0	Borehole	.son cl	00//7	21,045	/8.0	Borehole	19 nos.		21,341	85.0	Borehole 95 nos.	20,104	50,104	100.0
	1 Otal DGC	24,52/	005,11	0.0			29,114	25,005 0	0.6/				0	83.8		008,10	0/8//0	100.0
Kakoro	Out of RGC	17.936	10.400	58.0	Borehole -	10 nos.	21.291	13.410	63.0	Borehole - 13	13 nos. 2	-	17.181	0.0	Borehole - 84 nos.	42.269	42.269	100.0
	Total	17.936	10.400	58.0			21.291	13.410	63.0		-	25.273	17.181	68.0		42.269	42.269	100.0
	RGC	0	0	0.0			0	0	0.0				0	0.0		0	0	0.0
Kabwangashi	Out of RGC	19,328	19,118	98.9	Borehole	12 nos.	22,943	22,693	98.9	Borehole 14	14 nos. 2		26,937	98.9	Borehole 62 nos.	45,549	45,549	100.0
۰۰۰۰۰۰ ۵	Total	19,328	19,118	98.9			22,943	22,693	98.9		-	27,234	26,937	98.9		45,549	45,549	100.0
	RGC	1,248	1,100	88.1			1,481	1,100	74.3				1,758	100.0	Sxtension)	2,941	2,941	1.1
Apopong	Out of RGC	22,342	8,506	38.1	Borehole	27 nos.	26,520	16,727	63.1	Borehole 23	23 nos. 3		23,633	75.1	Borehole 97 nos.	52,651	52,651	
	Total	23,590	9,606	40.7			28,002	17,827	63.7				25,391	76.4		55,592	55,592	i
l- - ;	RGC	0	0	0.0	•	:	0	0	0.0		+		0	0.0		0	0	1
Kasodo	Out of RGC	215/2	14,112	51.5	Borehole	36 nos.	32,660	24,916	76.3	Borehole 31	31 nos. 3	38,/68	34,228	5.88	Borehole 102 nos.	64,841	64,841	0.001
16	DCC	0 0	14,112	0.0	,		000,25	24,910	0.0				0.14	0.00		04,041	04,041	I
Dallies	Out of RGC	13 809	8 100	58.7	Borehole	11 nos	16 392	11 254	68.7	Borehole 10	10 nos	19 457	14 332	73.7	Borehole 61 nos	32 543	32 543	100.0
	Total	13.809	8.100	58.7			16.392	11.254	68.7		-		14.332	73.7		32.543	32.543	1
	RGC	1,056	300	28.4	Boliso ITC		1,253	1,253	100.0	Boliso ITC (Extension)			1,487	100.0	Boliso ITC (Extension)	2,488	2,488	1
Puti-Puti	Out of RGC	20,569	12,924	62.8	Borehole	16 nos.	24,416	17,783	72.8	Borehole 16	16 nos. 2		22,557	77.8	Borehole 86 nos.	48,472	48,472	
	Total	21,624	13,224	61.2			25,669	19,036	74.2				24,045	78.9		50,960	50,960	I
L.	RGC	2,210	1,500	67.9	•	:	2,623	1,500	57.2		-		3,114	100.0	(Extension)	5,208	5,208	100.0
Kamuge	UUI OI KUC	10.026	12,412	72.1	Borehole	14 nos.	70 507	16//31	83.8	Borehole	- C	25,/09	77 072	85.8	Borehole 00 nos.	20,62	50,65 148.61	100.0
	BGC	3 744	217,01	2 11	Detete		4 444	2 900	653	Detete			5775	100.0	Detete (Extension)	8 873	8 873	ı.
Petete	Out of RGC	18.525	15.924	86.0	Borehole	10 nos.	21.990	18.902	86.0	ole	12 nos. 2		22.437	86.0	Borehole 71 nos.	43.656	43.656	I.
	Total	22,269	18,824	84.5			26,434	21,802	82.5		-	ļ	27,712	88.3		52,479	52,479	100.0
	RGC	8,008	006	11.2	Kasassira, Buseta		9,506	9,506	100.0	Kasassira (Extension), Buseta (Extension)			11,283	100.0	Kasassira (Extension), Buseta (Extension)	18,872	18,872	Î
Buseta	Out of RGC	23,918	12,600	52.7	Borehole	32 nos.	28,391	22,054	T.TT	Borehole 27		33,701	30,223	89.7	Borehole 87 nos.	56,365	56,365	100.0
	Total	31,926	13,500	42.3			37,897	31,560	83.3		4		41,506	92.3		75,237	75,237	1
	RGC	0	0	0.0			0	0	0.0		-		0	0.0		0	0	0.0
NIDUKU	Cut of KUC	14,911	6,000	40.2	aloualog	10 1105.	17 700	11 547	2.00	aloualog	- C - C - C - C - C - C - C - C - C - C	21,010	16 228	7.11 7.11	borenoie 03 nos.	35 130	35 130	100.0
	RGC	0	0	0.0			0	0	0.0				0	0.0		0	0	0.0
Tirinyi	Out of RGC	16,786	13,224	78.8	Borehole	15 nos.	19,925	17,690	88.8	Borehole 11	11 nos. 2		20,998	88.8	Borehole 62 nos.	39,557	39,557	100.0
	Total	16,786	13,224	78.8			19,925	17,690	88.8		. 4		20,998	88.8		39,557	39,557	100.0
	RGC	1,747	300	17.2	Nabisuwa		2,074	2,074	100.0	a (Extension)	+	2,462	2,462	100.0	a (Extension)	4,117	4,117	100.0
NIIKa	Out of KUC	18 885	11 418	60.5	Borenole	14 nos.	20,545 27,417	17,306	C LL 2	Borenoie	14 nos.	-	21 749	81.7	Borehote //0 nos.	40,287	40,587	100.0
	RGC	12.173	900	7.4	Kabweri, Kadama		14.450	14.450	100.0	Kadama (Extension), Kabweri (Extension)	-		17.152	100.0	Kadama (Extension), Kabweri (Extension)	28.687	28.687	i.
Kadama	Out of RGC	16,544	12,312	74.4	Borehole	14 nos.	19,638	16,578	84.4	Borehole 10			19,679	84.4	Borehole 64 nos.	38,988	38,988	100.0
	Total	28,717	13,212	46.0			34,088	31,028	91.0		4		36,831	91.0		67,675	67,675	ı
	RGC	2,345	2,000	85.3			2,784	2,000	71.9		-		3,304	100.0	Extension)	5,526	5,526	100.0
Kagumu	Out of RGC	20,469	9,106	44.5	Borehole	26 nos.	24,297	16,883	69.5	Borehole 22	22 nos. 2	28,841	23,502	81.5	Borehole 82 nos.	48,237	48,237	100.0
	DGC	22,814	11,100	100.0	,		7 460	18,885	09./ 00 1	Bulancina			20,800	100.0	Bulancino (Estancion)	07,00 000 h	1 000	100.0
Bulaneira	Out of RGC	19.773	12.700	64.2	Borehole	16 nos.	23.471	17.422	74.2		16 nos. 2		22.074	79.2	Borehole 82 nos.	46.598	46.598	100.0
	Total	21,853	14,900	68.2			25,940	19,622	75.6		-	30,792	25,004	81.2		51,500	51,500	100.0
	RGC	45,744	16,680	36.5	RGC		54,407	49,929	91.8				64,454	100.0		107,801	107,801	100.0
Whole District	Out of RGC	404,975	237,900	58.7	Borehole	390 nos.	481,720	362,328	75.2	Borehole 361	nos.		62,991	81.1	Borehole 1,638 nos.	954,365	954,365	100.0
	I otal	420,/19	204,/UU	C.0C			000,12/	412,227	/0.7		'n	o 600,000	521,440	1.08		1,062,167	1,062,16/	100.0

Table 16-45 Water Supply Facilities to be Provided in Each Term for Pallisa District

Term for Soroti District
μT
vided in Each
lin
led
0
Pr
be
to
cilities
aci
ΥF
ilddn
erS
Water
e 16-46
Table

																						ŀ	in	al	ĸ	ep	01	rt		Su	pp	or	tu	ng	-	(Ch	lap	tei	r I	6 M	asi	tei	·P	'la	n
	Coverage (%)	100.0	100.0	100.0	0.0	100.0	100.0	0.0	100.0	100.0	0.0	100.0	100.0	0.0	100.0	100.0	100.0	100.0	100.0	0.0	100.0	100.0	0.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	Served Pop.	9,865	48,098	57,962	0	71,066	71,066	0	101,822	101,822	0	92,120	92,120	0	47,050	47,050	4,852	123,458	128,310	0	99,461	99,461	0	54,692	54,692	1,333	83,760	85,093	15,995	109,218	125,213	8,312	132,202	140,514	8,413	82,295	90,709	12,019	56,865	68,883	24,550	105,795	130,345	85,339	1,207,901	1,293,240
rm Plan)	Pop.	9,865	48,098	57,962	0	71,066	71,066	0	101,822	101,822	0	92,120	92,120	0	47,050	47,050	4,852	123,458	128,310	0	99,461	99,461	0	54,692	54,692	1,333	83,760	85,093	15,995	109,218	125,213	8,312	132,202	140,514	8,413	82,295	90,709	12,019	56,865	68,883	24,550	105,795	130,345	85,339	1,207,901	1,293,240
2035 (Long Term Plan)	Water Supply Facilities	Acuna (Extension), Tubur (Extension)	Borehole 85 nos.		-	Borehole 126 nos.			Borehole 186 nos.		-	Borehole 169 nos.		-	Borehole 74 nos.		Gweri (Extension)	Borehole 266 nos.			Borehole 174 nos.		,	Borehole 97 nos.		Ocapa (Existing, Extension)	Borehole 141 nos.		Kyere (Existing, Extension), Ocapa (Existing, Extension)	Borehole 212 nos.		Iningo (Extension), Ocapa (Existing, Extension)	Borehole 259 nos.		Kasilo, Kamodo (Existing, Extension)	Borehole 140 nos.		Kadungulu (Existing, Extension), Kagwara Port (Extension)	Borehole 106 nos.		Kidetok (Extension), Pingire Etem (Extension), Pingire Comer (Extension), Mulondo (Extension), Mugarema (Extension)	Borehole 167 nos.		RGC	Borehole 2,202 nos.	
	Coverage	100.0	84.9	87.5	0.0	84.5	84.5	0.0	81.6	81.6	0.0	80.9	80.9	0.0	94.6	94.6	100.0	63.8	65.2	0.0	85.8	85.8	0.0	84.6	84.6	100.0	89.1	89.3	100.0	75.2	78.4	100.0	74.0	75.6	100.0	88.3	89.5	100.0	79.5	83.0	100.0	95.1	96.0	100.0	81.7	82.9
	Served Pop.	5,477	22,681	28,158	0	33,348	33,348	0	46,159	46,159	0	41,376	41,376	0	24,727	24,727	2,694	43,736	46,430	0	47,403	47,403	0	25,677	25,677	740	41,456	42,196	8,881	45,609	54,491	4,615	54,352	58,967	4,741	40,357	45,098	6,674	25,090	31,763	13,632	55,841	69,473	47,386	547,811	595,197
e Term Plan)	Pop.	5,477	26,707	32,184	0	39,460	39,460	0	56,538	56,538	0	51,151	51,151	0	26,125	26,125	2,694	68,552	71,246	0	55,227	55,227	0	30,369	30,369	740	46,509	47,249	8,881	60,645	69,526	4,615	73,407	78,022	4,672	45,696	50,367	6,674	31,575	38,248	13,632	58,744	72,376	47,386	670,705	718,090
2020 (Middle Term Plan	Water Supply Facilities	Acuna (Extension), Tubur (Extension)	Borehole 13 nos.		-	Borehole 25 nos.			Borehole 43 nos.			Borehole 32 nos.			Borehole 15 nos.		Gweri	Borehole 45 nos.	-		Borehole 36 nos.			Borehole 19 nos.		Ocapa (Existing, Extension)	Borehole 25 nos.		Kyere (Existing, Extension), Ocapa (Existing, Extension)	Borehole 44 nos.		Iningo, Ocapa (Existing, Extension)	Borehole 52 nos.		Kamodo (Existing, Extension)	Borehole 36 nos.		Kadungulu (Existing, Extension), Kagwara Port (Extension)	Borehole 19 nos.		Kidetok (Extension), Pingire Etem (Extension), Pingire Comer, Mulondo (Extension), Mugarema (Extension)	Borehole 33 nos.		RGC	Borehole 437 nos.	
	Coverage	100.0	84.9	87.5	0.0	79.5	79.5	0.0	71.6	71.6	0.0	75.9	75.9	0.0	94.6	94.6	76.8	53.8	54.7	0.0	80.8	80.8	0.0	79.6	79.6	100.0	89.1	89.3	100.0	65.2	69.7	87.9	64.0	65.5	100.0	78.3	80.6	100.0	74.5	78.9	98.9	95.1	95.8	97.2	75.6	77.0
u)	Served Pop.	4,502	18,642	23,144	0	25,788	25,788	0	33,292	33,292	0	31,906	31,906	0	20,324	20,324	1,700	30,313	32,013	0	36,692	36,692	0	19,857	19,857	608	34,074	34,682	7,300	32,503	39,803	3,333	38,640	41,973	3,950	29,415	33,365	5,485	19,324	24,810	11,086	45,897	56,983	37,854	416,666	454,521
2015 (Short Term Plan)	Pop.	4,502	21,951	26,453	0	32,434	32,434	0	46,470	46,470	0	42,043	42,043	0	21,473	21,473	2,214	56,345	58,559	0	45,393	45,393	0	24,961	24,961	608	38,227	38,835	7,300	49,845	57,145	3,794	60,335	64,129	3,840	37,558	41,398	5,485	25,952	31,437	11,204	48,283	59,488	38,947	551,270	590,218
2015 (S	Water Supply Facilities	Acuna, Tubur	Borehole 0 nos.		-	Borehole 24 nos.			Borehole 25 nos.			Borehole 24 nos.		-	Borehole 0 nos.			Borehole 33 nos.			Borehole 27 nos.			Borehole 15 nos.		Ocapa (Existing)	Borehole 20 nos.		Kyere (Existing), Ocapa (Esxisting)	Borehole 33 nos.		visting)	Borehole 39 nos.		Kamodo (Existing)	Borehole 22 nos.		Kadungulu (Existing), Kagwara Port	Borehole 14 nos.		K idetok, Pingire Etem, Mulondo, Mugarema	Borehole 27 nos.		RGC	Borehole 303 nos.	
	Coverage (%)	24.3	100.0	89.9	0.0	69.5	69.5	0.0	67.6	67.6	0.0	71.9	71.9	0.0	100.0	100.0	93.4	43.8	45.7	0.0	76.8	76.8	0.0	75.6	75.6	100.0	89.1	89.3	100.0	55.2	60.9	93.0	54.0	56.3	100.0	74.3	77.1	37.4	70.5	64.7	26.1	95.1	82.1	60.1	71.2	70.4
2010 (Present)	Served Pop.	006	18,642	19,542	0	18,530	18,530	0	25,836	25,836	0	24,842	24,842	0	20,324	20,324	1,700	20,284	21,984	0	28,666	28,666	0	15,500	15,500	500	28,006	28,506	6,000	22,618	28,618	2,900	26,800	29,700	3,300	22,942	26,242	1,688	15,030	16,718	2,400	37,724	40,124	19,244	322,469	341,713
	Pop.	3,700	18,042	21,743	0	26,658	26,658	0	38,195	38,195	0	34,556	34,556	0	17,649	17,649	1,820	46,311	48,131	0	37,310	37,310	0	20,516	20,516	500	31,420	31,920	6,000	40,969	46,969	3,118	49,591	52,709	3,156	30,870	34,026	4,508	21,331	25,839	9,209	39,685	48,895	32,012	453,104	485,116
	ntv	RGC	Out of RGC	Total	RGC	Out of RGC	Total	RGC	Out of RGC	Total	RGC	Out of RGC	Total	RGC	Out of RGC	Total	RGC	Out of RGC	Total	RGC	Out of RGC	Total	RGC	Out of RGC	Total	RGC	Out of RGC	Total	RGC	Out of RGC	Total	RGC	Out of RGC	Total	RGC	Out of RGC	Total	RGC	Out of RGC	Total	RGC	Out of RGC	Total	RGC	Out of RGC	Total
	Sub-county		Tubur			Katine			Arapai			Kamuda			Soroti			Gweri			Asuret			Atiira			Olio			Kyere			Kateta			Bugondo			Kadungulu		Dingine	211911			Whole District	

16.4.6 Water Supply System

The rural areas consist of the population-dense areas of RGCs and those other than RGCs, and the water supply facilities to be applied are accordingly different each other; the piped water supply systems for RGC areas and the deep boreholes with hand pump for the other rural areas.

(1) Water Supply Facilities for Rural Areas Other than RGCs

The deep boreholes with hand pump are predominantly applied in the rural areas in the priority districts, since the groundwater resources are considered the most promising source for safe water supply in the districts. In the master plan, therefore, the deep boreholes with hand pump as shown in Figure 16-30 are proposed to be applied for the rural areas other than RGCs.

The boreholes of PVC casing and strainer with 5 in. diameter are drilled by the drilling diameters of 12 in. in the top soil, 10 in. in the weathered zone, and 7.5 in. in the fractured hard rock. The depths of drilled boreholes vary depending on the geological conditions. The expected depths of boreholes are estimated and presented together with the yields and success rates for each sub-county in Table 16-47.

The hand pump units are installed on top of the boreholes with a concrete apron and a soak pit. The U2/3 pumps are most predominantly used for the hand pumps for rural water supply in Uganda.

(2) Water Supply Facilities for RGC Areas

1) Categories of RGCs

The RGCs are divided into four (4) categories in terms of population scale as follows:

Category	Population
- Category I:	<1,000
- Category II:	1,000 - 3,000
- Category III:	3,000 - 5,000
- Category IV:	5,000<

RGCs are defined as villages having a population between 500 and 5,000, but those villages of which population is out of this range are often called as RGCs due to their administration and commercial functions.

Preliminary design and cost estimate will be conducted for the RGCs selected for representing each category of RGC, and the construction costs for the other RGCs will be estimated based on the cost per capita calculated for each category of RGC. The selected nine (9) RGCs are listed in Table 16-48.

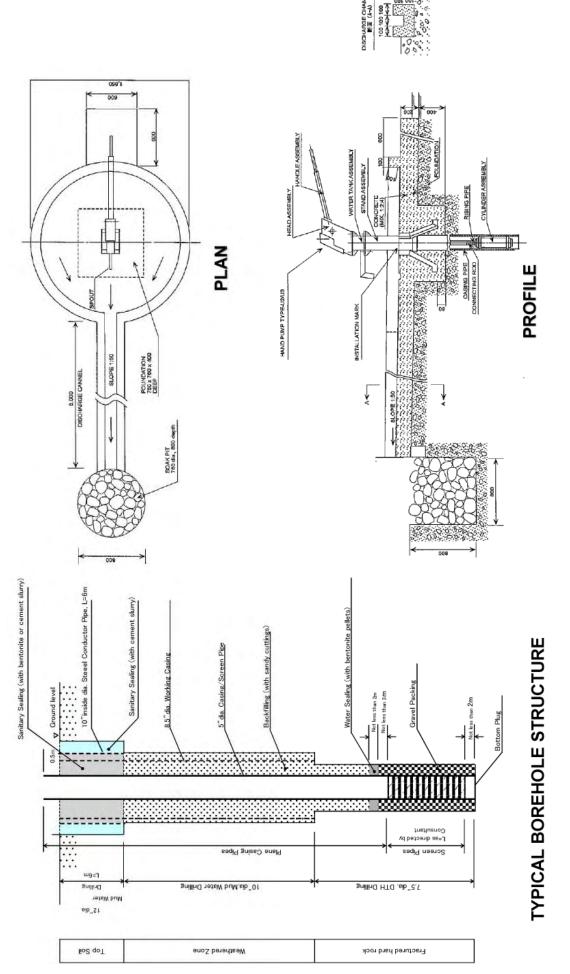


Figure 16-30 Typical Borehole Structure with Hand Pump for Rural Water Supply

16-77

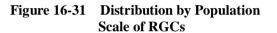
The Development Study on Water Resources Development and Management for Lake Kyoga BasinFinal Report -Supporting- Chapter 16 Master Plan of Rural Water SupplyTab le 16-47 Number of Boreholes to be Constructed in Rural Areas of Priority Districts

	Drilling Depth	Static Water	Average Yield	Success	Number of Bo	oreholes to be (Constructed in	Each Term
Sub-county	(m)	Level (m)	(m3/h)	Rate (%)	2015	2020	2035	Total
1. Iganga Distric		20101(11)	(110,11)	1000 (70)	2010	2020	2000	1000
Buyanga	70.0	11.0	1.27	57.7	30	31	139	200
Ibulanku	67.0	13.0	3.38	72.5	22	31	163	216
Makuutu	63.0	13.0	1.46	59.3	21	22	97	140
Namalemba	62.0	10.0	4.58	75.9	12	14	60	86
Bulamagi	59.0	15.0	2.01	66.1	22	26	176	224
Nabitende	74.0	19.0	3.27	83.7	24	25	113	162
Nakalama	54.0	12.0	2.14	66.5	16	23	102	141
Nakigo	58.0	12.0	2.14	69.2	10	12	68	90
Nambale	63.0	12.0	4.79	80.3	10	17	79	108
Namungalwe	60.0	10.0	2.81	67.3	12	14	93	119
Nawandala	62.0	12.0	1.26	57.5	24	25	112	161
Bukanga	63.0	12.0	1.63	59.3	17	33	112	208
Bukooma	77.0	24.0	1.03	61.3	17	31	138	195
Bulongo	69.0	14.0	1.74	58.9	10	15	93	193
Ikumbya	65.0	14.0	2.33	<u>58.9</u> 68.9	13	27	120	121
Irongo	70.0	18.0	2.53	58.6	13	27	120	155
Nawampiti	70.0	12.0	2.32	68.3	14	15	79	105
Waibuga	65.0	13.0	1.04	51.0	11	13	121	103
<u> </u>		14.0	1.04	51.0	13	18	121	134
2. Pallisa Distric		10.0	1.02	57.2	26	26	110	1(2
Agule	66.0	10.0	1.23	57.2	26 27	26	<u>110</u> 97	162
Apopong	59.0	10.0	2.43	63.2	27			147
Gogonyo	64.0	8.0	2.04	63.8		21	86	129
Kameke	78.0	11.0	2.01	64.9	28	23	102	153
Kamuge	55.0	10.0	1.38	61.4	14	10	66	90
Kasodo	67.0	13.0	2.73	64.2	36	31	102	169
Pallisa	58.0	12.0	1.41	60.1	11	10	61	82
Puti-Puti	64.0	11.0	1.73	67.5	16	16	86	118
Butebo	67.0	9.0	1.23	56.7	15	19	93	127
Kabwangasi	74.0	11.0	1.65	61.0	12	14	62	88
Kakoro	64.0	9.0	3.44	76.1	10	13	84	107
Kibale	71.0	9.0	1.50	64.6	28	27	108	163
Petete	55.0	9.0	1.51	73.1	10	12	71	93
Bulangira	60.0	8.0	1.14	53.3	16	16	82	114
Buseta	60.0	11.0	1.77	64.7	32	27	87	146
Kadama	73.0	10.0	1.49	59.9	14	10	64	88
Kagumu	66.0	11.0	1.34	54.0	26	22	82	130
Kibuku	60.0	11.0	1.52	61.7	18	16	63	97
Kirika	66.0	10.0	1.56	59.1	14	14	70	98
Tirinyi	73.0	7.0	3.50	59.1	15	11	62	88
3. Soroti District		,			······			
Arapai	68.0	8.0	2.12	80.9	25	43	186	254
Asuret	63.0	9.0	2.05	73.5	27	36	174	237
Gweri	68.0	7.0	2.06	59.8	33	45	266	344
Kamuda	75.0	11.0	2.44	69.8	24	32	169	225
Katine	65.0	7.0	1.70	67.0	24	25	126	175
Soroti	69.0	7.0	3.03	69.9	0	15	74	89
Tubur	73.0	8.0	1.21	56.5	0	13	85	98
Bugondo	62.0	9.0	2.67	85.7	22	36	140	198
Kadungulu	82.0	8.0	6.69	87.6	14	19	106	139
Pingire	74.0	12.0	5.84	92.7	27	33	167	227
Atiira	70.0	8.0	1.77	81.5	15	19	97	131
Kateta	65.0	12.0	3.95	73.3	39	52	259	350
Kyere	68.0	9.0	3.67	77.9	33	44	212	289
Olio	66.0	13.0	1.55	56.0	20	25	141	186

	-										_	
					CAT	EGO	RIES					
	[]			l	I			I			IV	
14												
12							_ <u>T</u>		Distric RGCs)	<u> </u>		Igan 1
10												2
8 -												3
												4
6												Pall 5
4												5
												6
2												7
0	_						,					Sor
	0-500	1,000	1,500	2,000	2,500	3,000	3,500	4,000	4,500	5,000	5,000 <	8
	0	500 - 1,000	1,000 - 1,500	1,500 - 2,000	2,000 - 2,500	2,500 - 3,000	3,000 - 3,500	3,500 - 4,000	4,000 - 4,500	4,500 - 5,000	5,1	9
												Not

		Categorie	-	
	District and Sub-county	RGC	Population	Representing Category
[ga	inga District		· ·	
1	Ikumbya	Ikumbya	1,275	II-1
2	Bukooma	Naigobya	1,642	II-1
3	Nambale	Nambale	4,835	III
4	Namungalwe	Namungalwe	12,240	IV
Pal	llisa District			
5	Kameke	Kameke	2,600	II-2
6	Buseta	Buseta	2,392	II-2
7	Kadama	Kadama	10,858	IV
So	roti District			
8	Pingire	Kidetok	1,040	II-1
9	Kadungulu	Kagwara Port	3,120	III
NT.	tay DCC Catagoni	II 1. Demulat	on 1 000 2 (000

Table 16-48 RGCs Selected for Representing



Note: RGC Categories: II-1: Population 1,000 - 2,000 II-2: Population 2,000 - 3,000

III: Population 3.000 - 5.000

IV: Population 5,000 < 5,000 <

Category I is not considered since it is planned to be furnished point water source only for water supply.

Since as shown in Figure 7-15, the number of RGCs categorized into Category II is the most, this category is sub-categorised into two (2) categories; Category II-1 and II-2. As the areas and topography of each RGC is different form RGC to RGC even in the same category, the RGCs representing the category are selected at least two (2) in each category. Considering the number of existing RGCs in each district, four (4), three (3) and two (2) representative RGCs are allocated for the Iganga, the Pallisa and the Soroti districts, respectively. The selection of representative RGCs are conducted so that the population of the selected RGCs lean neither to larger nor to smaller side in the population range of each category. Since the RGCs of Category I is furnished with the point-water-source type of facility as mentioned later and the the project cost of this type of facility is considered almost same, the RGCs representing Category I is not selected.

2) Types and Service Levels of Water Supply Facilities to be Applied

According to "Long-term Strategy fro Investment Planning, Implementation and Operation & Maintenance of Water Supply and Sanitation in Rural Growth Centers (2005)" published by Directorate of Water Development, Ministry of Water, Land and Environment, the point water sources of boreholes are to be applied for the RGCs of Category I of which population is not more than 1,000, and the piped water supply facilities are for the RGCs of Categories II, III and IV of which population is more than 1,000 as shown in Table 16-49.

			Final Report -Supporting- Chapter 16 Maste	er Plan of	Rural Water Suppl
Category IV 5,000 -		Piped Water Supply Facilities Electricity or diesel-generated power if commercial supply is not available. case that NWSC transmission is available near the RGC and its groundwater potential is judged to be poor comparing with the estimated demand, the system may be proposed to be connected such transmission.	Elevated tank School 3-taps 3-taps 3-taps 3-taps 3-taps Bound Bound Health Canter Health Canter Health Canter	18 hr.	Water kiosks and house connections (yard taps) 1 water kiosk covers 450 persons House connections are considered for 10 % of RGC population with 6 persons/connection
Category III 3,000 - 5,000)), 30 (2035)	Piped Water Supply Facilities Electricity or diesel-generated power if commercial supply is not available. case that NWSC transmission is available near the RGC and its groundwater potential is judged to be comparing with the estimated demand, the system may be proposed to be connected such transmission.	WATER SUP	12 hr.	Kiosks ⁄ers 450 persons. ion is considered.
Category II 1,000 - 3,000	20 (2015), 25 (2020), 30 (2035)	Electricity or diesel In case that NWSC transmission is a comparing with the estimated der	Transmision Facilities UPVC/HDPE pipe Transmision Facilities UPVC/HDPE pipe Intake facilities National Electric grid supply or Dissel Restantor supply Pacific grid supply or Dissel Restantor supply Restantor supply Restantor supply Pacific grid supply or Dissel Restantor supply Pacific grid supply Restantor supply Re	12 hr.	Water Kiosks 1 water kiosk covers 450 persons. No house connection is considered
Category I 500 - 1,000		Point Water Source Power Source: Solar power	Ightering rd action tal the formed of the f	12 hr. (Operation hours of solar-powered pump: 6 hr)	On site taps
1. Population	2. Consumption (liter/dav/capita)		3. Type of Facilities	4. Operation Hours	5. Distribution

Table 16-49 Categories of RGCs and Water Supply Facilities to be Applied

This system consists of a borehole, a motorized pumping unit, an on-site overhead storage tank and a water kiosk. The power system of the facilities for RGCs of Category I of which population are less than 1,000 are considered small comparing with those for the other categories, since their demands are also smaller. Though the construction and operation and maintenance costs of the power system is more expensive than the others, its difference is considered negligible even if the solar power system is adopted for the facilities of RGCs of Category I. Further, such small demand of RGCs of Category I is able to be supplied by the facilities of solar power generation even if its operational hour is as short as six (6) hours only. Therefore, the solar power generation system is applied for the power system of the water supply facilities for RGCs of Category I taking into account of advantages in operation and maintenance. Since the size and number of solar power modules are small, it is possible to set the modules on the elevated tank, resulting in advantages in security and light-harvesting. For the safety measures in the operation and maintenance works on the elevated tank a redder will be provided to climbing up and down. The water is sold at the water kiosk constructed beside the borehole. Size of the overhead tank is determined by the population served by this facility.

The piped water supply facilities applied for the RGCs of Categories II, III and IV of which population is more than 1,000 consist of the following components.

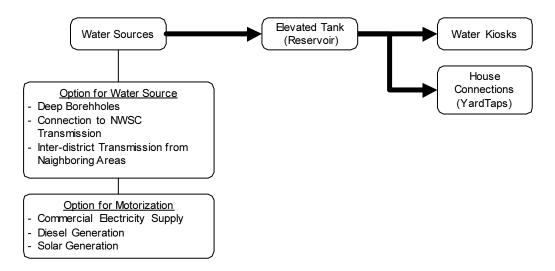


Figure 16-32 Flow Chart of Piped Water Supply System

The deep boreholes with submersible motor pump are mainly applied at the water source, and the water is conveyed by the raw water transmission to the elevated water tank (reservoir). The water is distributed by the distribution pipelines to the water kiosks constructed in the service areas, and sold to the peoples in the area. House connections by yard taps are also considered to a certain extent. In the RGCs of Category IV having the population more than 5,000, 10 % of the served population is proposed to receive the water by the yard taps which covers six (6) persons per tap. The water kiosks are provided to cover 450 persons per kiosk in the RGCs of Categories II, III and IV.

Since the groundwater is used mainly for water supply and any parameter of water quality is not found to be

treated, any treatment facility is not provided. Disinfection facility is not furnished because the water supply facilities are proposed to be disinfected in the course of the operation and maintenance by the operators of the facilities periodically.

a) Alternative Water Sources

Although the groundwater is used for the water supply for RGCs, there are some alternative water sources to be considered; the connection to NWSC transmission and the inter-district transmission from neighboring areas. These options are considered in only case that the groundwater potential is judged to be so limited in and around the RGC areas that it seems to be difficult to explore the required yields of boreholes to meet the water demand.

In the master plan, the water sources of the following RGCs are considered to be changed from groundwater to either NWSC transmission or neighboring areas transmitting the water to the said RGCs (Ref. Figure 16-32).

Iganga District

- Busiiro RGC: Five (5) numbers of deep boreholes are required to satisfy the water demand set for the long term plan for 2035. The potential yield is estimated at 2.2 m³/hr with a success rate of 20 %, and it is considered difficult to explore five (5) numbers of boreholes in the said RGC area. Therefore, it is proposed to take the water of Nawanpiti RGC area where 4.2 m³/hr of potential yield is expected with 2.5 % of success rate. The distance from the Nawanpiti RGC to Busiiro RGC is measured to be about eight (8) km.

Pallisa District

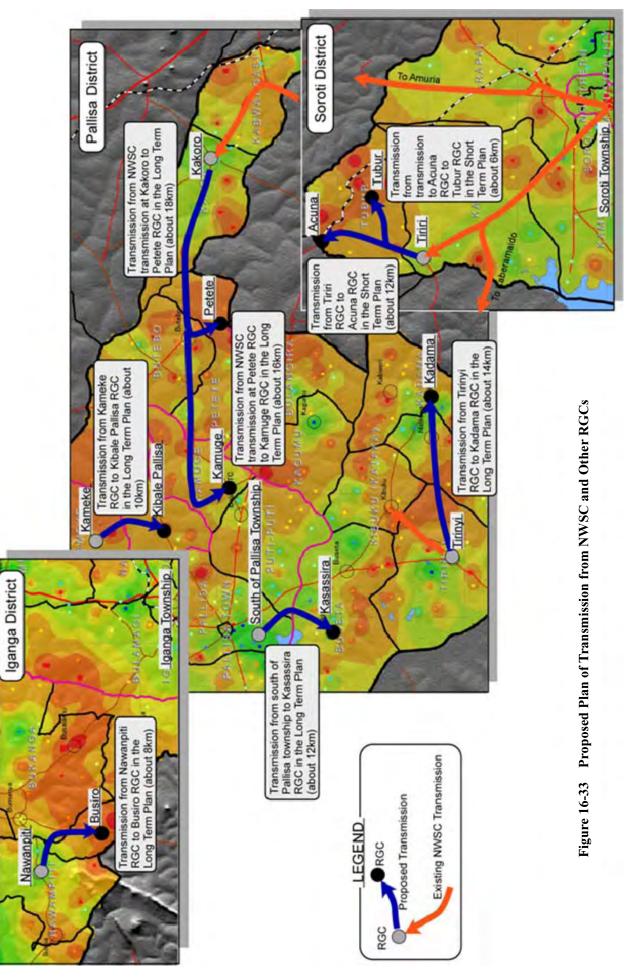
- Kibale Pallisa RGC: Four (4) numbers of deep boreholes are required to satisfy the water demand set for the long term plan for 2035. The potential yield is estimated at only 2.4 m³/hr with a success rate of 26 %, and more exploitation of the groundwater in the said RGC are seems to be quite difficult, and it is proposed to convey the water from the Kameke RGC to Kibale Pallisa RGC to fulfill the increased demand of the said RGC.
- Petete RGC: Six (6) deep boreholes are required to satisfy the water demand estimated for the long term plan for 2035, but 2.5 m³/hr of potential yield with 20 % success rate is expected resulting in the difficulty of more groundwater exploitation in the said RGC area. It is, therefore, proposed to connect the water supply system of this RGC to the NWSC transmission which has reached to the Kakoro town from the Mbale town. The distance from the Kakoro town to the Petete RGC is measured to be about 18 km.
- Kamuge RGC: Four (4) numbers of deep boreholes are required for this RGC in the long term plan for 2035, but potential yield is estimated only at 2.2 m³/hr with 28 % success rate. It is, therefore, proposed to connect the water supply system of this

RGC to the NWSC transmission which is proposed to be extended to Petete RGC. The distance of the pipeline for the connection from this RGC to the Petete RGC is measured to be 16 km.

- Kasassira RGC: Six (6) deep boreholes are required to fulfill the water demand of this RGC in 2035, but the expected yield is estimated to be 3.7 m³/hr with the success rate of 20 %. Therefore, it is proposed to convey the groundwater of the areas expanding south of the Pallisa town area where the yield better than this RGC area is expected. The distance between this RGC to the said area is measured to be about 12 km.
- Kadama RGC: This RGC is one of the largest ones in the Pallisa district, of which population grows over 25,000 in 2035, and requires 11 numbers of deep boreholes in the long term plan though its potential yield is estimated 3.9 m³/hr with 20 % of success rate. Therefore, in the long term plan it is proposed to convey the water from the neighboring Trinyi RGC area, where the potential yield better than this RGC is expectable. The distance from the Trinyi RGC to this RGC is measured about 14 km.

Soroti District

- Acuna RGC: The potential yield of this RGC area is estimated as low as 1.9 m³/hr with the success rate of 20 %, and situated in the so-called "water scares area" in the Soroti district. It is considered quirt difficult to get the successful boreholes even having the yield for hand pump capacity. Two (2) boreholes are required to satisfy the demand for the short term plan for 2015 and six (6) boreholes are requited in the long term plan. It is proposed to connect the water supply system of this RGC to the existing piped water system of the Tiriri RGC located about 12 km away from this RGC in the short term plan.
- Tubur RGC: The area of this RGC is also considered to be situated in the water scares area also, and it is judged to be quite difficult in exploiting the groundwater in this area. Therefore, it is proposed to connect the water supply system of this RGC to that of the Tiriri RGC in the short term plan. The transmission to this RGC is proposed to be branched out from that for the above Acuna RGC at about four (4) km point from the Tiriri RGC. The distance from the branch to this RGC is measured to be about six (6) km.



The Development Study on Water Resources Development and Management for Lake Kyoga Basin Final Report -Supporting- Chapter 16 Master Plan of Rural Water Supply

b) Alternatives for Power Source of Submersible Motor Pump of Boreholes

As for the power source of the submersible motor pumps of boreholes, there are three (3) alternatives such as commercial electricity supply, diesel generation and solar generation are considered. As shown in Table 7-18, where the commercial electricity supply is available, it is proposed to use it as much as possible from view of economic efficiency. However, where such electricity supply is not available, either diesel or solar generation has to be applied. The construction and the replacement costs for the solar power generation are higher than the other power systems. However, the operation and maintenance cost is considered lower than the diesel generation though it is higher than the commercial electricity supply. It does not need the payment for the power source such as electricity fees and fuel charge requiring only the regular inspection and maintenance, and then it is considered attractive to apply. As a result of fair and integrated evaluation in this project taking into account that the construction and the replacement of the water supply facilities are one of the obligation of the government the diesel generation system is seemed to be the most effective for the piped water supply system for RGCs because its construction and replacement costs are lower than that of the diesel power generation. In addition, the operation hours of the solar generation is limited only in day time; the operation of six (6) hours is recommended in design the solar power generation in Uganda, which results in increasing the number of boreholes to be drilled in the areas where the groundwater potential is quite limited. Therefore, it is proposed to apply the diesel generation for the submersible motor pump of deep boreholes of piped water supply system considering the technical and economical view points discussed above. However, it is necessary to examine on the most appropriate power source to be applied before the implementation, since the price down of solar module due to recent rapid engineering innovation, necessity of environmental consideration, and rapid price escalation of fuel.

	Commercial Electricity Supply	Diesel Generation	Solar Generation
Descriptions	The piped water supply system	m serving population of 2,000 a ne comparison. The comparison	and the daily water demand of
Outline of Applied Facility	 Operation hour: 12 hr. Submersible motor pump: 2 Transmission pipelines: 1, Elevated tank: 40 m3, H=12 Life period: 30 years 	nos. 000 m	 Operation hour: 6 hr. Submersible motor pump: 4 nos. Transmission pipelines: 2,000 m Elevated tank: 40 m3, H=12 m Life period: 30 years
1. Construction	Construction cost for intake facility and elevated tank: 606,507,820 UGX	Construction cost for intake facility and elevated tank: 618,442,820 UGX	Construction cost for intake facility and elevated tank: 1,077,018,332 UGX
2. Operation and Maintenance	A Operation and Maintenance cost: 8,556,396 UGX Electricity fee is charged according to electricity consumption. A	Operation and Maintenance cost: 16,373,500 UGX Fuel cost is expensive and spare parts are required for generator.	Operation and Maintenance cost:12,250,600 UGX No energy cost is required. Only regular maintenance is needed. B
3. Replacement	Replacement cost: 57,833,000 UGX No cost for replacement of power supply facility is required except pumping equipment (2 nos.).	Replacement cost: 93,638,000 UGX Diesel generator has to be replaced as well as pumping equipment (2 nos.).	Replacement cost: 226,514,000 UGX Solar modules and pumping equipment have to be replaced. Six (6) units of pumping equipment are

	Commercial Electricity		
	Supply	Diesel Generation	Solar Generation
		m serving population of 2,000 a	
	40 m ³ /day is considered for th	ne comparison. The comparison	is made for the costs relating
Descriptions	to the intake facilities and elev	vated tank.	
			required to be replaced.
	А	В	С
4. Overall Judgement	А	В	С

				0		5
Table 16-50	Comparison of	Power S	Sources	for Pipe	ed Water	Supply Systems

Term-wise Development of Water supply Facilities for RGCs 3)

In the master plan, there are three (3) target years are set; the short term plan for 2015, the middle term plan for 2020 and the long term plan for 2035. The scales and capacities of the water supply facilities are planned so as to meet the demand of each target year. The term to the first target year of 2015 is five (5) years, and that to the second target year of 2020 is five years after the first target year. The period from the second target year to the final target of 2035 is 15 years. The capacity of the elevated tank and the size of main distribution pipelines are considered difficult to expand to meet the demand of second target year after the construction in the short term plan. Therefore, these parts of the facilities are to be planned to meet the demand of the second target year of 2020 when they are constructed in the short term plan. The other parts of facilities such as water source facilities (deep boreholes), transmission pipelines to elevated tanks, water kiosks and yard taps are planned to be provided to meet to the demands of each target year. The sizes and capacities of the elevated tanks and the main distribution pipelines are planned to meet the demand of 2020, even when they are constructed in the short term plan. The project period from the initial year of 2010 to the last year of 2035 is 25 years, and the population gains about twice of the initial year and the consumption per capita is also set 30 liter/day/capita equivalent to 1.5 times of 15 liter/day/capita for the short term plan. Therefore, all the facilities from the water source to the water kiosks are planned additionally to be constructed to meet the demand of the long term plan (2035).

4) **Future Demand and Water Capacity**

The present and the future daily water demands of RGCs are shown in Table 16-51. The following manners and

methods are applied in the preliminary design of the water supply facilities for the selected RGCs.

a) **Deep Boreholes**

The deep boreholes with 5 in. diameter of PVC casings and strainers are constructed the depth of drilled borehole varies depending upon the hhydrogeological conditions of source area. The number of boreholes to be required is determined with dividing the daily demand by the operation hours and potential yield.



Intake Borehole for RGC

						,						I					•							
				Population	u(Cat	Category of RGC	fRGC	Water	Water Demand (m ³ /day)*	³ /day)*		Powe	Power Source	Ope	Operation Hours	ours	Grot	Groundwater	Re	q. No. of	Req. No. of Borehole	(ɯ) u	Remarks
Sub-county	RGC	Term of Imple.	\$107	0707	\$503	\$107	0707	\$503	\$107	0202	\$603	Electricity Availability	\$107	5032	\$107	0707	56035	Potential Yield Suggess	Depth Sate (%)	5102 س)	5020	\$503	oissimenenT	
I. Iganga District	Iloumburo	. CT	1 500	1 702	ć	┥┝	=		102	746	1 00					2			(1 000	
	Bultoma	01 CT	1,200	7 005		-	=	= E	20.02	0.44	140 6	WV V	+	╈		1 2	71	1 c 1 c			- (1 0		
2 BUKOOMA	Bukooma Naigobya	ST	2,242 1,942	2,296	3,797				38.8 38.8	74.9 57.4	113.9	A A	EP	EP EP	12 12	1 1	12	0.0 8.4		2.0	7	n (1	1,650	
3 Bulongo	Nakabugu	ST	5,814	6,874	-	7 IV	IV	IV	116.3	171.9	341.0	Α				18	18	3.8		0 2	3	5		
4 Irongo	Kyanvuma Lambala	ST ST	2,050 2.515	2,425 2,974	4,009	п	п	Ш	41.0 50.3	60.6 74.4	120.3 147.5	A A		EP EP EP EP		12	12 12	5.1 6.2		0.0		7 7	500 2.000	
5 Nawampiti	Ikonia Nawamiti	MT ST	2,141 2,485	2,532		· =	пп	ΞE	- 407	63.3 73.5	125.6	NA				12	12	4.0 4 0		-	2 5	ю «		
6 Bukanoa	Buwologoma	L LS	2 260	2,530	_			Ш	45.7	699	132.6	NA				12	12	1.4					_	
	Bumanya	ST	2,280	2,696	4,457				45.6	67.4	133.7	NA	DG	DG	121	121	16	2.9			101	, w .	3,000	
	Busiiro Busalamu	ST	2,231 1.972	2,639					44.6 39.4	66.0 58.3	130.9	A A				22	12	3.3			_			Transmit from Nawampiti in LT Plan
7 Waibuga	Waibuga	LT	560	663		1	•	п		,	32.9	NA		-	-	,	12	1.5		- 0.		2	2,400	
8 Nawandala	Namusisi Nawandala	ST MT	1,960 1.532	2,318 1.811	0.0	н -	п	ШП	39.2	57.9 45.3	115.0 89.8	V V	EP .	EP EP EP EP	- 12	12	12 16	3.2 1.9	34	70 2 70 -	5 7	ςς τη	3,400 3.000	
9 Nambale	Nambale	ST	5,717	6,760	_	NI 8		N	114.3	169.0	335.3	A	EP		18	18	18	4.7		0 2		4		
10 Mahitanda	Nabitende B.	ST	17,459	20,645			_	≥⊧	349.2	516.1	1,024.1	A <		EP EP		18	18	7.2			4	∞ (
	Dugono Nabitende K.	ST	2,822	3,337	5,518	- 11	- II	12	56.4	- 83.4	165.5	¥	- EP	EP EP	12	- 12	12	3.5		0 2	- 2	4.60	2,000	
11 Namalemba	nil					-	•		0.0	0.0	0.0				_	•	•			•	•			
	Namungalwe	ST	14,474	17,115	(1	-	2	2	289.5	427.9	849.0	A .	_			18	18	8.0		0	ς. Γ	9	_	
	Kiwanyi Mabalama	ST	3,033	3,587	5,931			22	1381	1 100	177.9	A <	EP	EP EP	12	12	23	2.0	31 31	50		4 4	3 240	
15 Bulamaoi	nil	10			-	+	-		1.001	0.0	0.04				ł	•	• •	e.c -		7 -	• •		_	
16 Nakigo	Nakigo	MT	2.412	2.852	-		п	III		71.3	141.5	A				12	12	4.1		- 0,	2	ŝ	_	
	Kabira	TM	1,652	1,954	3,231	-	Π	III		48.8	96.9 20.7	¥ <	-	EP EP		12	12	2.8		-	2	 -		
17 Ihulanku	Rusesa	TS.	4 825	502.5			+	2	96.5	142.6	283.0	<	μ	+	12	18	18	5.2		- O		- 4	-	
	Ibulanku T/C	TM T	3,094	3,658				: 2 2		91.5	181.5	< < <		EP EP		12	18 8	5.2	37	1 - 1 3 9 6	1010	- 61 6	1,000	
18 Makuutu	Nondwe	ST	4.264	5.042	+	-	12	2 2	85.3	126.0	250.1	V				18	18	2.8				n 90		
al						-								-						, ,	,			
1 Gogonyo	Gogonyo	TM ET	222 277	7 055	748	- =	1	I		11.2	22.4	Ā	- 12	SP SP		9	9	3.8	-	- 02	- (1	-	
2 Agule	Agule	sT S	2.988	3.546	_	_		2 2	59.8	88.7	0.001	V V				12	18	3.3				0 m	_	
3 Kameke	Kameke	ST	3,194	3,663		III ,	Ξ	2	63.9	91.6	183.8	Y				12	18	3.9			5	ŝ	2,960	
4 Kibale	Kibale Pallisa	ST	2,833	3,363		_	III	N	56.7	84.1	168.7	Α				12	18	2.4		60 2	3	3+1	7,000	Transmit from Kamekie in LT Plan
5 Butebo 6 Anonong	Butebo Kahole	ST	1,358	1,612	2,696			= =	27.2	40.3 44.0	80.9	A A	EP	EP EP	12	12	12	2.3	20 11	110	0 C	m m	3 860	
	Boliso ITC	ST	1,253	1,487	Н	Π	п	п	25.1	37.2	74.6	A	EP		12	12	12	2.4		70	5	3	1,200	+
8 Kamuge	Kamuge	MT	2,623	3,114	5,208	1	III	N		77.8	156.2	A		EP EP		12	18	2.2	28	- 02	ŝ	3+NW	33,890	
9 Petete	Petete	MT	4,444	5,275	8,823	-	N	N		131.9	264.7	A	-	EP EP		18	18	2.5	20 5	50 -	3	3+NW	18,500	
10 Buseta	Kasassira	ST	6,666	7,913	13,235	N I	N	N	133.3	197.8	397.0	¥,	EP	EP EP		18	22	3.7	20	0	ς, η	5.	3,555	
11 Kirika	Nahisuwa	16 TS	2,839	0/ C, C	+	_		2 8	20.8	61.5 61.5	109.1	A	-	-		1 1	12	3.5			-	0 (_	
12 Kadama	Kabweri	ST	1,562	1,854	-	_	-		31.2	46.3	93.0	V	_	EP EP	12	12	12	2.6		90 2	1 01	n m	_	_
	Kadama	ST	12,888	15,298	25,587		_	N	257.8	382.5	767.6	Α				18	23	3.9				6+2	14,500	Transmit from Trinyi in LT Plan
13 Kagumu	Kigumu	MT	2,784	3,304	-	-		N		82.6	165.8	NA	-			2 2	24	2.4		-	с (с, с	009	
14 Bulangira III. Soroti District	Bulangira	IW	2,409	2,951	4,902	-	=	111		6.61	14/.1	Α	•	EF EF	17	17	71	4.1	0 07	- 00	7	°.	000,0	
1 Tubur	Acuna	\mathbf{ST}	2,069	2,517	4,533	п	п	Ш	41.4	62.9	136.0	A	EP	EP EP	12	12	12	1.9	20 -	NW	MN	NW	10,495	Cunected to NWSC Transmission of Tiriri in ST
	Tubur	\mathbf{ST}	2,433	2,960	5,332	П	Π	N	48.7	74.0	160.0	A	EP	EP EP	12	12	18	2.1	22 -	NW	NM	ΜN	8,095	
	Gweri	MT	2,214	2,694	4,852	'	Π	II	•	67.4	145.6	NA	-	DG DG	'	12	12	4.8	20 2	-	2	3	3,000	
3 Olio	Ocapa	Existing	608		_	'	1	,	'	,	,	,	•	•	,	1	ī	1.5	'	1	,		•	

Tab le 16-51 Water Supply Facilities for RGCs in Priority Districts

				Population		Categ	Category of RGC		Water Demand (m		/day)*		Power	Power Source	Ope	Operation Hours	Iours	Gr	Groundwater	er	Req. N	Req. No. of Borehole	ehole	n (m) Remarks
Sub-county	RGC	Term of Imple.	\$102	5020	5602	\$107	5020	5602	\$102	0202	Electricity	ytilidelievA	51020 5102	5602	\$102	5020	\$503	Potential Yield (m ³ /hr)	Success Rate (%)	(m) Depth	\$107	5020	5603	oizzimznerT
4 Kyere	Ocapa K vere	Existing Existing	2,433 4 867	2,960 5 921	5,332 10.663	VI II	VI VI	IV IV	109.5 16 97.3 14	166.5 3 148.0 3	359.9 /	A A	EP EP EP EP		112	18	18	4.2 4.7		09 90	0 C	ς, τ	5 5	1,500
5 Kateta	Iningo	MT	1,360	1.655	2,980		П	п			-					12	12	7.5	30	60		1		300
	Ocapa	Existing	2,433	2,960	5,332						-	A		•	'	•	•	4.9						
6 Bugondo	Kasilo	LT	190	231	416	,	,	I			12.5 N	NA	' ,	SP	'	•	9	2.1	72	70	,		1	
	Kamod	Existing	3,650	4,441	7,998	III	III	N	73.0 11	111.0 2	239.9	A	EP EP		12	12	18	2.7		60	ς	4	5	3,000
7 Kadungulu	Kadungulu	Existing	1,689	2,055	3,701	I	п	III	33.8 5	51.4 1	11.0 ,				9 0	12	12	5.7	67	60	1	1	2	· · · ·
•	Kagwara Port	ST	3,796	4,618	8,317	III	III	2	75.9 11	115.5 2	249.5 N	NA I	DG DG	G DG	G 12	12	18	7.0	60	60		0	7	5,000
8 Pingire	Kidetok	$\mathbf{T}\mathbf{S}$	1,265	1,539	2,772	Π	п	П	25.3 3	38.5	83.2	A I		P EP	_	12	12	7.0	56	06	1	1	1	1,050
	Pingire Etem	ST	1,582	1,924	3,466	Π	п	III	31.6 4	48.1 1	104.0 N	NA I	DG DG		G 12	12	12	2.9	86	70	1	0	ŝ	1,040
	Pingire Corner	MT	1,019	1,239	2,232		Π	П	-	31.0	67.0 N	NA	- DG	G DG	۰ ۲۳	12	12	2.8	86	09		1	7	1,800
	Mulondo	ST	2,214	2,694	4,852	П	п	Ш	44.3 6	67.4 1	145.6 N		DG DG	G DG	G 12	12	12	4.1	80	90	-	7	ŝ	8,000
	Mugarema	ST	5,125	6,235	11,229	IV	IV	IV I	102.5 15	155.9 3		NA I	_			18	18	6.6	40	60	1	2	3	2,200
Note: The	The following consumptions are applied for calculating the water demands of RGCs.	tions are app	vlied for cal-	culating the	water dem	nands o	f RGCs.																	

the routowing consumptions are applied for calculating the water demands of KUCS. 20 liter/day/capita for 2015, 25 liter/day/capita for 2020 and 30 liter/day/capita for 2035 considening those applied for SIP. The preliminary design of boreholes is provided for all the RGCs, because its size and required number are different from RGC to RGC. A submersible motor pump is installed in each borehole to lift up groundwater to the elevated tank. The power source of the submersible motor pump are either commercial electricity supply or diesel generation where the electricity supply is not available. The depth, expected yield of borehole and required number of boreholes, and the approximate distances of transmission pipelines from borehole to elevated tank considered in the preliminary design are presented for each RGC in Table 16-51.

b) Transmission Pipelines

The transmission pipelines are provided to convey the groundwater from the boreholes to the elevated

tank. Its size is determined by the Hazen-Williams formula. The pipeline is made of uPVC or HDPE pipes.

c) Elevated Tank



The capacity of elevated tank is determined to store 50 % of the daily demand, and the minimum height of the low water level in the tank is so set that the water pressures at the water kiosks and yard taps are more than 5.0 m. The tank is made of steel with steel supports. The capacity of the elevated tank is so designed that the supply of 50 % of daily demand is assured.

d) Distribution Pipelines

Elevated Tank

The distribution pipelines from the elevated tank to water kiosks

and yard taps are of uPVC or HDPE pipes and their flow capacities are calculated with the Hazen-Williams formula based on the peak hour demand which is calculated as twice of the average hour demand. The average hour demand is calculated with dividing the daily demand by 24.



Water Kiosk

e) Water Kiosks

The water kiosks are provided to cover 450 persons by one (1) kiosk, and each kiosk has three (3) taps. The kiosks is consist of block masonry wall and corrugated galvanized steel (CGS) roofing.

f) Yard Taps

Yard taps consist of a water meter, a water tap and connection pipes, and used for the customers who need direct connection.



Yard Tap Connection

5) Results of Preliminary Design

The results of the preliminary design of the selected RGCs are presented in Figures from 16-34 to Figure 16-42.

16.5 Management Plan

16.5.1 O&M in Uganda

(1) Present situation of the Sector and O&M

1) Organization of Water and Environmental Section in Uganda

Organization structure of National Level, District Level and Community Level for the water and environmental sector in Uganda is shown in Figure 8-1 in Chapter 8. The roles relating to the operation and maintenance of water supply system in each level are as follows.

a) National Level

The Ministry of Water and Environment (MWE) has the responsibility for setting national policies and standards, managing and regulating water resources and determining priorities for water development and management. It also monitors and evaluates sector development programs to keep track of their performance, efficiency and effectiveness in service delivery. The other ministries such as the Ministry of Health (MOH) and the Ministry of Education and Sports (MOES), etc., are engaged in the water and environment administration in their own fields.

b) District Level

Local Governments (Districts, Town Councils, sub-Counties) are empowered by the Local Governments Act (2000) to provide water services and manage the Environment and Natural Resource base. The District Water Offices manage water and sanitation development and oversee the operation and maintenance of existing water supplies in the District.

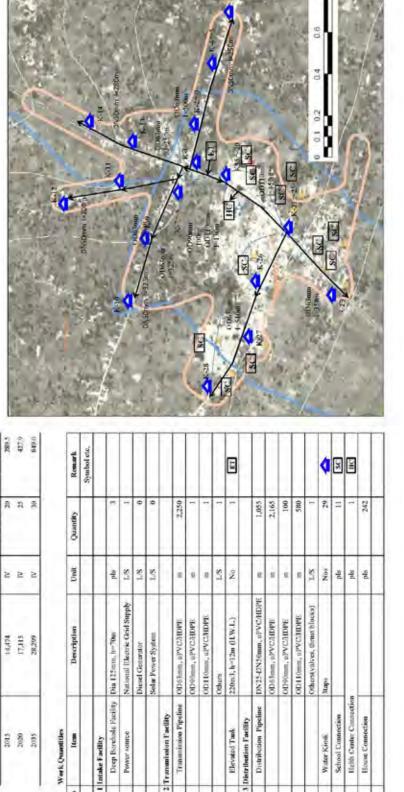


Figure 16-34 Preliminary Design of Water Supply system for Selected RGC (Namungalwe RGC)

The Development Study on Water Resources Development and Management for Lake Kyoga Basin Final Report -Supporting- Chapter 16 Master Plan of Rural Water Supply

Facilities	Namungalwa	Namengadwa
Outline of Water Supply	RGCI	Sub-Country

Calegory Iganga Population District:

Vears

Water Demand

umption per capita

m3/day

16-91

X

114.3

AA

2 2

\$715

2015

Water Denand

ption pur

Calegory

Population

Years

Outline of Water Supply Facilities

Nambale

Sub-Country District:

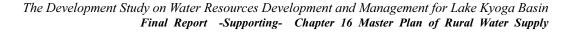
RGC:

I ganga

Nambale

Cax	4	etc.	/																	C								1 AL	N-N	Con Contraction	and the second sec	Choron	10056.0			and			Salle Salles	The second second	の日本	のないとうとう	and a second	「たん」ので		
	Remark	Symbol stc.																																	ET								4	SC	III	
8	Quantity			2	-	-	-	-	-			-	1	-	-	-	-	-	-	-	1		0	0	2		0	2		1,600	0		0	0	-			210	2,200	175	0	•	12	5	-	3N
					x	2	9	2	2	S'1	1.75	2	81	1/8	1/2	1/8	1/8	1/8	2.1	0,1	14	2.00	281	27	20.02	Ī	N/	- the state		E			E	1.18	No			E		.m.	E	1/8	Nos	pls	pls	ske
м	Unit			phs	Ē	-		-							1.1						6								1	-	-	t				1	+	Dif.	-	-	-	-	-	-	-	-
VI 871,11	Description Unit			Deep Borchole Facility [Dia 125mm, h=70m pb	-		Created Supply		-	-	-	National Electric Grid Supply 1	-	National Electric Grid Supply	National Electric Cirid Supply	National Electric Cind Supply	values a contro can supply		Diand Conservation	Diesel Generator	Laced Urbidial of			Solar Power System	tions town observe		Transmission Pipeline OD63mm, uPVC/HDPE	OD90mm uPVCHDPE		ODITOmin, uPVCHDPE	Others	90m3, hr12m (GL+H.W.L.)			DN25-DN50mm, uPWCHDPE	OD63mm, aPVC7HDPE	OD90mm, uPVC/HDPE	OD110mm, uPVC/HDPE;	Others(wilves, thrust blocks)	3tups						

-
-
4
1
1
- 1
1
_
- i
τ
4
1
1
- 1
•
i
4
5
į.
1
•
1
•
- 7
F
L
•
ν.
2
5
ļ
- P



				ĺ		4	L-L	C(363mm F= 30m	MOLA MADSNO	No.		- NEW	Ties, Y	_	No.	ET OULTIME FLOOR	111	110	0063 min 1 750m	1	FIEL	2	K	k-	0 01 02 04	
206	44.6	88.4	2	Remark	Symbol etc,			-			C				1		-						1			
97	ส	30		Quantity	*		1	0	1.	0		1,000	0	0	1	1		103	2,060	0	100	X	4	4	1	
				H	-	-			1/8	T/S								e	. 10	E	e	1.8	Nuss		-	t
I	=	п		Unit			pks	1.8	7	-		E	E	E	1./S	No		-					2	pls	plk	l
1,508				Description Unit			Dia 125mm, h=70m pls	National Electric Grid Supply 1.5	Diesel Generator 1.	Solar Power System L		OD63mm, uPVCHDPE n	OD90mm, uPVC/HD9E m	CD110mm, aPVC3HDPE m	Others L/S	30n3, h=12m (GL+H,W.L.) No		DN25-DN50mm, uPVCHDPE n	OD63mm, uPVC7HD9E	OD90mm, uPVC/HDPE	CDH 0mm, uPVCHDPE	Others(vulves, thrust blocks)	3tups N	apd	24	

ie of Water Supply Facilities	DPD.
Outline o	20

Ikumbya	Ikumbya	Soroth
- RGC:	Sub-Country	District:

White Demand ur3/day

Consumption per lit/day/capits supite

Category

Population

Years

16-93

	A LANDING SO		こうち したち ちょうどう	12	DNSQuart 1-50m		Continue to the second	SC SC		Of Shund Man A A A Closen 1 20		2 11C + 00 than 1-32tm		10063 mil 1-300m		5				0.1 0.2 0.4 0.5	
1	/			2		~		12	10	7					1		/				3
	Remark	Symbol etc,										RT.						4	×	HC	
	Quantity Remark	Symbol etc.	1	1	0	0		1.650	0	0	1	1 81	100	1,500	320	0	4	\$	4	1 10	1
		Symbol etc.	p4s 1	1.8	0 0	0 TVS		m 1,650	0 w	0 10	1 1/8	No L RT	m 190	IB 1,500	m 320	0 w	1.68 1			pls 1 100	1//5 1
	Quantity	Symbol etc.	Dia 125mm, h=70m pls 1	National Electric Grid Supply L/S 1.							Others L/S 1	1				-	Others(valves, thrust blocks) 1./5 1.	5	+	1	1/2 1/2

Q
RG
2
ya
Ę.
50
a.
RGC (N
U
Ŭ
2
ğ
сţе
le
Se
Ĵ.
\mathbf{fo}
Ξ
fe
Â
Ś.
Ę.
pp
S
5
te
₹a
2
of
g
Sig
e
N N
H.
ins
Ē
ij.
Pre
4
ή
16
ē
Ĭ
<u>छ</u> .
E

Facilities	Naigebya	Ikumbya	Iganga
Outline of Water Supply	RGC:	Sath-Country	Districts

Consumption per capita	lit/dity/capits	50	12
Category			=
Population		1,942	2,296
Years		2015	2020

38.8

Water Decand m3/dity

20	Item	Description	Unit	Quantity	Remark
					Symbol etc,
	Intake Fadility				
	Deep Berelede Facility	Dia 125mm, h=70m	pks	1	
	Power source	National Electric Chid Supply	1.8	1	
		Diesel Generator	8/1	0	
		Solar Power System	T/S	0	
	2 Transmission Fadility				
	Transmission Pipeline	OD63mm, uPVCHDPE	8	1.650	
		OD90000, uPVC/HDPE	æ	0	
		OD110mm, ePVCHDPE		0	
		Others	1/8	-	
	Elevated Tank.	30m3, h=12m (GL+H,W.L.)	NG	3	X
3	Distribution Facility				
	Distribution Pipeline	DN25-DN50mm, aPVCHDPE	e	100	
		OD63mm, uPVCHDPE	8	1,500	
		OD90mm, uPVC/HDPE	E	320	
		OOM 0000, uPVC/EDPE		0	
		Others(valves, thrust blocks)	1.45	1	
	Water Klock	Staps	Nus	\$	4
	School Connection		pls	+	y,
	Helth Center Connection		phs	1	HC
	House Connection		T/S	1	

				Othologina 1-21(en		X XI	いたちのころ	261m		Orysteem 1-31 One	DNSOmm Le 197 C K-5	1.5C Oloomun I=1.78m	K-2 CD94mm1-140m	COMmunity And	18	SC 0004mm1-173m	こう うちち たいしているのです	している あいいとう あってい	A State of the second second		And the second second	01 02 04 06 08	
11日 11日 11日		Contraction of the second	4			「いたん」「ころいろ」	いいたいいいた	0D63mm1-26by	a state of the				1.VI	00200mm 383m		いち こ あたかいたいひょう	and the state of t	いいて したいろう とうい	「「「「「「「」」」」」」」」」」」」」」」」」」」」」」」」」」」」」」」		したうながら		
	14	5											КT										
	Remark	Symbol etc.																		Ì	NC.	Ξ	
	Quantity Remark	Symbol etc		2	4	0	0		2,960	0	0	4	1		577	1.032	1,010	0	t	8	4	-	0
		Symbol de		pk 2	L/S 1	0 0	0 0		m 2,960	0 W	0 10	1. 1.	Nu II		m 577	m 1.032	m 1,010	0 10	1 1	Ì		pls 1	pts 0
	Quantity	Symbol de										Otters 1./S 1	1						Others(valves, thrust blocks) L/S 1.	8	+	1	

Outline of Water Supply Facilities RGC: Kameke

Sub-Country Kameke District: Pallisa 01.6

8 2

8 8

1001°E

2015

Writer Demind

Consumption pur capita lit/dty/capita

Category

Population

Years

Methodation Detail Interna Reformant Interna Reformant Interna Reformant Interna Reformant Interna Reformant Interna Reformant International Reformant Reformant International Reformational Reformation	RGC: Buseta	RGC:	Buseta		
		Sub-Country District:	Buseta Pallica		
1000000000000000000000000000000000000	Years	Poyntian	Calegory	Commission para	Water Twined
200 1 2 00 370 1 2 00 370 1 2 00 370 1 2 00 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 </td <td></td> <td></td> <td></td> <td>Buday copital</td> <td>rub div</td>				Buday copital	rub div
370 31 31 2 61 307 K K K K K 307 K K K K K K 307 K <t< td=""><td>20.15</td><td>2 839</td><td>п</td><td>30</td><td>56.8</td></t<>	20.15	2 839	п	30	56.8
M01 K K K Image: Section Sectin Section Sectin Section Sectin Sectin Section Sectin Section Sect	2020	3370	Ŧ	21	2.148
Image:	2035	3.637	NL.	30	1.661
Netroption Total (none) Remain (none) Interprete Interprete Sectorist Rev Sectorist Sectorist Rev Sectorist Sectorist Rev Interprete Interprete Sectorist Interpret Interprete	Work Quantities				
Noticity Noticity Noticity Noticity P Noticity Noticity P P Noticity </td <td>Item</td> <td>Description</td> <td>Unit</td> <td>Quantity</td> <td>Remark</td>	Item	Description	Unit	Quantity	Remark
lite lite <thlite< th=""> lite lite <thl< td=""><td></td><td></td><td></td><td></td><td>Symbol etc.</td></thl<></thlite<>					Symbol etc.
litte litte <th< td=""><td>1 Intake Facility</td><td></td><td></td><td></td><td></td></th<>	1 Intake Facility				
Nitrad Elebeis Citil Supply LS 1 Died Generike LS 0 Neue Elebeis Citil Supply LS 0 Sele Power System LS 0 Neue System LS 0 Mer Power System LS 0 Neue System LS 3.240 Orthoma, ePVC HDPE u 3.240 Onsen, ePVC HDPE u 3.240 Offician, ePVC HDPE u 3.240 Offi	Deep Borehole Facility		pls	.0	
Discl Granter 15 0 Sdar Power System 15 0 Sdar Power System 15 0 Mare System 15 0 Sdar Power System 15 0 Mare System 15 3.246 OFORoma, cPVC HDPE 10 3.246 OFORoma, cPVC HDPE 10 3.246 OFORoma, cPVC HDPE 12 3.246 OFOROma, cPVC HDPE 13 3.246 OFOROma, cPVC HDPE 14 15 OFOROma, cPVC HDPE 12 3.245 OFOROma, cPVC HDPE 13 3.246 OFOROma, cPVC HDPE 14 15 OFOROma, cPVC	Power source	National Electric Crid Supply.	L/S	1 - I	
Start Voter System 1.5 0 Voter System 1.5 0 Voter System 1.5 3.3.40 Voter System 1.0 3.3.40 Voter System 1.0 3.3.40 Of Solona, cPVC HDPE 1.0 3.3.40 Of Solona, cPVC HDPE 1.0 0.0 Star, U- Star OH WL.) No. 1.0 Distribution, cPVC HDPE 1.0 0.0 Distribution, cPVC HDPE 1.1 ET Distribution, cPVC HDPE 1.1 ET Distribution, cPVC HDPE 1.1 ET Distribution, cPVC HDPE 1.0 0.0 Distribution, cPVC HDPE 1.0		Diesel Generator	1.5	0.	
v 3.340 incomm. cPVC HDPE u 3.340 C050mm. cPVC HDPE u 3.340 Ofform. cPVC HDPE u 3.340 Jarc. Lu - San 6H WL.J. No 1 Jarc. Lu - San 6H WL.J. No 1 Dofform. cPVC HDPE u 3.36 Dofform. cPVC HDPE u 3.36 Obstant. cPVC HDPE u 3.36 Obstant. cPVC HDPE u 3.36 Obstant. cPVC HDPE u 3.36 Ofform. cPVC HDPE u		Solar Power System	- 1.8	0	
loc GTSG (main. F V V HD) E u 3.240 O CPO (main. c P V C HD) E u 0 O D11 (hans. u W V C HD) E u 0 O D11 (hans. u W V C HD) E u 0 O D11 (hans. u W V C HD) E u 1 Jane: Lu - 2 an et HW L.1 N/v u 1 Jane: Lu - 2 an et HW L.1 N/v u 3/v Jane: Lu - 2 an et HW L.1 N/v u 3/v O D10 hans. u PV C HD) E u 3/v u O Stotam. et PV C HD) E u 3/v u O Stotam. et PV C HD) E u 3/v u O Stotam. et PV C HD) E u 0/v u O Stotam. et VV C HD) E u 0/v u O Stotam. et VV C HD) E u 0/v u O Stotam. et VV C HD) E u 0/v u O Stotam. et VV C HD) E u 0/v u O Stotam. et VV C HD) E u 0/v u O Stotave. threat blocks) L Stotave. th	2 Transmission Facility				
GPS0mm. UPVC HDPE u 0 OD110muPVC HDPE us u OD110muPVC HDPE us us Shei, lu-2an tHWL) No u DS3-JDNS0mm, tPVC HDPE u u u u u u Offsman, tPVC HDPE u u u US0mm, tPVC HDPE u u u US0mm, tPVC HDPE u u u ODI Uman, uPVC HDPE u u u US0mm, tPVC HDPE u u u US0mm,	Transmission Pipelane	OB6500a, cPVC HDPE	R	5.240	
OD 11 (huma, u/VC-HDREmObsectL1S1ObsectL1S1Jack (hubble)L1S1Jack (hubble)NSJack (hubble)Jack (hubble)Obsev(hubble)Jack (hubble)Jack (hubble)<		OD90mm, uPVCHDPE	11	0	
Other 18 1 3lors: h=:2m off W(L) No 1 ET 3lors: h=:2m off W(L) No 1 ET and 3N25-JUNSonam: rPVC fED/E m 3/0 and 3/05/000mile: rPVC fED/E m 3/0 and 3/05/000mile: rPVC fED/E m 3/0 and 3/05/000mile: rPVC fED/E m 3/0 and 3/05 3/0 0 and 3/0 0 0 0 and 3/0 0 0		OD110mm, a2VCHDPE	Ħ		
Start. Is - 2an of I W. L.) No I ET D DX25.10N Solution. it PVC FIDPE it 3,00 atter 3,00 3,00 100 0.00 OEGStaum. it PVC FIDPE it 3,00 100 0.00 OEGStaum. it PVC FIDPE it 3,00 100 0.00 OEGStaum. it PVC FIDPE it 9,90 100 0.00 OEGStaum. it PVC FIDPE it 9,90 100 0.00 OEGStaum. it PVC FIDPE it 9,90 0.00 0.00 0.00 OEGStaum. it PVC FIDPE it 9,90 0.00 0.00 0.00 0.00 OBsers(values, ithreat blocks) 1.5 1 1 0 0 0 0 0 0.00 0		Others	LS	1	
International conduction Internation Internat	Elevated Tank	30m5, h=12m (H.W.L.)	No	11.0	ET
DX24-DNS0min, cPVC HDRE ii 3x0 offormu, cPVC HDRE iii 3x0 offormu, cPVC HDRE iii 2332 offormu, cPVC HDRE iii 9x6 offormu, cPVC HDRE iii 0 offormu, uPVC HDRE iii 0	3 Distribution Facility				
offsimm.rPVC HDPE m 2.312 0.D90mm.rPVC HDPE m 9x 0.D910mm.rPVC HDPE m 9x 0D110mm.rPVC HDPE m 0 0D110mm.rPVC HDPE m	Distribution Pipeline	DN25-DN50mm, cPVC/HDPE		3,00	
of 209 man. r PVC HDPE a 9x of 10 man. u W C HDPE a 9x of 10 man. u W C HDPE a 0 of and the blocks) LS 1 of any with the blocks) LS 1 Japs Nos 7 ▲ deter value pile 2 ≦ otion pile 1 FK of any nos 0 0.1 0.6		OD63mm, ePVCHDPE	#	2,335	
OD110hanz.u/VC/HDME ab 0 Otherscukes, threat blocks) LS I Otherscukes, threat blocks) LS I Jays Nos 7 🔨 Jays Nos 7 🕹 idage LS I I idage 2 🕹 SC otion pls I IKC of 0 0.1 0.2 0.8		OD90mm.cPVCHDPE	я	08.6	
Offsers(valves, threat blocks) 1.8 1 Jape Nos 7 1 Jape Stape 5 1 Anape Pile 1 1 Anape Pile 1 1 Anape Pile 1 1		OD110mm, uPVCHDPE	1	0	
34ye Yos 7 ▲ Autor pils ± ≦ extent pils ± ≦ other pils ± ± other n 0 0.1 0.5 0.4 0.6 0		Others(valves, thrust blocks)	1.8	-	
pls 1 sci	Water Koosk	Maps	Nos		4
which pls 1 14 0.0 0.1 0.2 0.4 0.6 0.1 0.1 0.2 0.4 0.6 0.1 0.2 0.4 0.6 0.1 0.2 0.4 0.6 0.1 0.2 0.4 0.6 0.1 0.5 0.1 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5	School Competion		pls	41	SC
	Helth Center Connection		pls	T	H
	House Connection		pls.	0	

5 80 H 90 10 20 Ş 10 Q 400 363.5 × C1 Symbol etc. Remark ЯĽ 192 A # B 600 1,390 105 含 215 2,800 Cuantity Unde S'I 1.18 148 3 128 Nag Na E ž 늰 B Ξ а = Ξ 2 2 2 8 DN25-DN50mm, uPV CTIDPE tumonal Electric Child Supply Othern(valves, throat blocks) OULOnes, aPV CHDPE uPVC/IIDPE ODGmm, «PVC/HDPE. ODGmm, «PVCHDPF DOOMMA, UPVC/IIDPE 10m3, h=(2m01.W.L) OD90mm, aPVC/IIDPE Description 1, 25, 250 Dia 125mm, h-70m iolar Power System Diesel Generation 0D110mm there tape Unlift Cantar Connection Doep Barchole Facility mission Pipeline Distribution Pipeline munission Facility Rome Consciou Giribution Facility Flevrited Tark Power source 2005 Work Quantities Water Kitok lien School Com take Facility į



4

16-97

ž

Outline of Water Supply Facilities

COLUMN T	Kadama	Kadama	Pallisa
Andre ime u no oninne	RGC:	Sub-Country	District:

Wear Domen

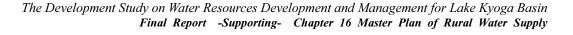
Conserption per capita

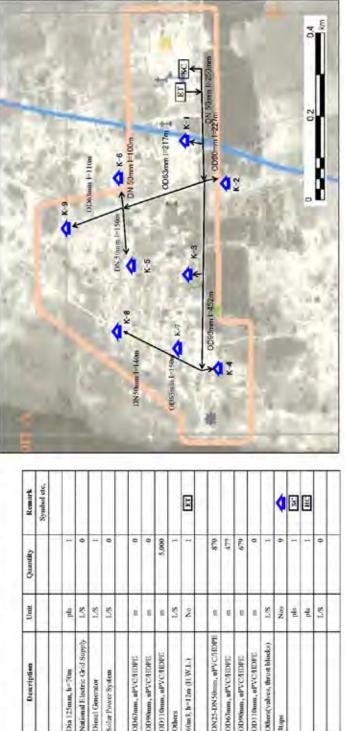
Category.

top: mouth

Vent

Figure 16-41 Preliminary Design of Water Supply system for Selected RGC (Kagwara Port RGC)





r Supply Facilities	Kagwaron Port	Kadungulu
Water		
Outline of	RGC:	Sub-Country

Kadungula Seroti

District:

tars.	Pepulation	Category	Commption per supta	Water Donneid
			his/day/capita.	yab'itm
2015	3,756	- 11	20	28.0
2020	4/618	H	25	113.5
2002	2112	N.	R	249

1	6	90
1	0	-20

Dia 125mm, h=70m

Deep Borchole Facility

1 Intake Facility

SOUNCE

POWNER

Work Quantities

Item

olar Power System Diesel Generator

Transmission Pipeline

2 I ransmission Facility

Others

Distribution Pipeline

3 Distribution Facility Elevated Tank

stups

Water Kiosk

tion

Helth Center Connec

Scheel Connection Hours Connection

Eq. 0.4 0.2

1				litida yi capita	voVdey.	
	2015	1,265		97	553	
	2020	1,339		ħ	38.5	
	2003	2,772	п	30	\$3.2	
	Work Quantities					
2	ltem	Description	Unit	Quantity	Remark	
					Symbol etc,	
-	I Intake Facility					and a state of the
	Deep Borehole Facility	Dia 125mm, h=70m	pls	-		
	Power source	National Electric Grid Supply	L/S			A COLORED AND A
		Diesel Generator	L/S	0		
		Solar Power System	L/S	0		
6.8	2 Transmission Fadility					K-L,
	Transmission Pipeline	OD63mm, uPVC/HDPE	6	1,050		h
		ODSOMM, uPVCHDPE	£	0		
		OD110mm, uPVC/HDPE	ũ	0		DNSOmm 1=300m SC
		Others	1.18	-		/
	Elevated Tank.	20m3, h=12m (H.W.L.)	No	-	КT	
-	3 Distribution Facility					
	Distribution Pipeline	DN25-DN50mm, uPVCHD9E	E	450		× E
		ODGmm, uPVC/HDPE		012		
		CESSONIM, UPVC/HDPE	- UA	0		
1		OD110mm, uPVC/HDPE	a	0		
		Others(velves, thrust blocks)	1./S	1		2
	Water Kiosk	Steps	Nos	3	4	CK-2
	School Connection		pls		28	
	Helth Center Connection		plk	1	9	
	House Connection		pla	0		
ľ						

cilities
Fa
ter Supply
Wa
of
Outline

Kidetok	Prodice	Soroti	
RGC:	Sub-Country	District:	

Water Dennin

uption per

Category

Popular

Years

Figure 16-42 Preliminary Design of Water Supply system for Selected RGC (Kidetok RGC)

c) Community Level

Communities are responsible for operating and maintaining rural water supply and sanitation facilities. A water user committee (WUC) should ideally be established at each water point.

2) Water Supply System and O&M Organization

Water supply system and O&M organization in each area are shown in Table 16-52. Water supply facilities in the rural area are mainly point water sources and operated and maintained by the communities, except those for RGCs with small scale of water supply system with pipeline and pumps. Water supply facilities in the small towns in urban area are mainly water supply system with pipeline and operated and maintained by the private operators, with some exceptions. In large towns NWSC operates and maintains the large scale of water supply systems.

	Area	Population	Type of Water Supply System	O&M Organization of the Facilities
Rural	Village	Less than 500	Point Water Source • Borehole with hand pump • Shallow well • Protected spring • Gravity flow scheme Tap • Rain water tank	Water User Community or Water User Group (WUC ^{*1} or WUG ^{*2}): The whale community served by the individual point water facility Water and Sanitation Committee (WSC ^{*3}): Acompetent WSC of about 6 people elected by the WUC Water User Association (WUA ^{*4}): In case of many WUC/WCG being served by one water source (like a GFS), the WSCs come together to form a WUA, who in turn can select/elect the Central Committee (like a WSC) to O&M the whole scheme.
	Rural Growth Center (RGC)		Point Water Source	Same the above
_		500 ~5,000	Small scale of Water Supply System with pipeline and pumps.	Water Supply Board under Water Authority
	Small	5,000~15,000	Water Supply System with	Town Board Water Supply Offce
Urban	Town		pipeline and pumps	Private Operator under the Town Water Authority
	Large Town	More than 15,000	Large Scale Water Supply System	National Water and Sanitation Corporation (NWSC)

 Table 16-52
 Water Supply System and O&M Organization

*1 Water User Community, *2 WUG: Water User Group, *3 WSC: Water and Sanitation Committee, *4 WUA: Water User Association

(2) O&M in Rural Water Supply System

The National Water Policy (1999) provides for user ownership and management of rural water and sanitation facilities as a sustainability strategy. This is promoted through the Community Based Maintenance System (CBMS) as the most appropriate management option where the users take full responsibility over management and maintenance of their facilities.

1) Organizations related to CBMS

In the CBMS the Communities should take responsibility for O&M of their facilities as shown in Table 16-53. At the same time, organizations of the local governments and the central government in

charge of rural water supply should undertake their duties to pursue a sustainability of the facilities and improvement of the water supply ratio.

Moreover, Development Partners, NGO·CBO and Private Sector are providing funds, technical assistance, training, supply of spare parts and repair etc. to support the smooth management of the rural water supply system. Table 9-18 shows the related organizations and their duties. Work items and relation of each organization are shown in Figure 16-43.

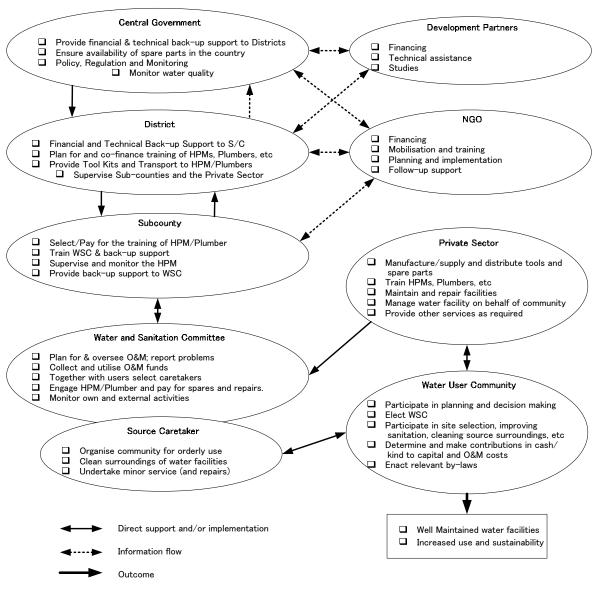


Figure 16-43 Work Items and Relation of each Organization

Organization	Duties
Central Government	Government prepares the overall policy framework, legislation and guidelines under which the sector operates. Central government here refers to the line Ministry (MWE/DWD) and other sector relevant Ministries responsible for Health, Gender, Agriculture, etc. The Central government coordinates funding, training, supply of inputs and implementation. It is responsible for ensuring that policies are followed, and approaches used contribute towards the attainment of sector objectives. It should therefore monitor the performance and functionality of the water facilities nationally, and take the necessary remedial action. MWE/DWD also contributes towards the costs of major repairs beyond community capacity. Also TSU supports DWO for capacity building for O/M of rural water supply system.
District	The District provides back-up support and technical guidance to Sub-Counties in planning and budgeting, implementation and monitoring of their work plans. It should also budget for co-funding of major repairs as part of the planning process. Where the need for major repairs arises the District should provide the required guidance and supervision, and also play a key role in ensuring established standards for O&M are maintained. The District is also responsible for routine water quality monitoring (after construction) to assess its suitability for consumption. It is also responsible for monitoring the performance of O&M and taking relevant actions to address shortcomings with support from DWD.
Sub-County	The Sub-County is a body corporate, and has a mandate to plan and oversee implementation of development programs. Therefore they should prepare plans and budgets incorporating O&M aspects. The O&M budget should provide for follow-up support and co-financing of major repairs. They can also supervise the private sector carrying out training and monitoring of O&M.
Community	The community is responsible for management and maintenance of their water facilities.Preventive maintenance and repairs, and payment of required funds. Each community should select a competent WSC and Care-takers to guide their participation.The mode of community involvement is dictated by the type of community and the type of water supply system.
Development Partners	Development partners support the government in improving the safe water and sanitation coverage. They provide funding and technical assistance directly to government programs and through other agencies, and also offer support in studies to assess performance of different aspects of the sector, with a view to improvement. All support should be coordinated with government.
NGOs and CBOs	Several NGOs and CBOs are involved in the water and sanitation sector. They have useful roles to play as partners in mobilization, training, planning, follow-up support and other activities, being already established in communities.
Private Sector	The role of the private sector is to support the communities in carrying out any activities beyond their capability. HPMs, masons and plumbers carry out maintenance and repair work, and are paid by the communities. Private firms manufacture, supply and distribute inputs and spares, and undertake major repairs. PSOs can also undertake community mobilization and training. They can also manage point or small piped water supplies on behalf of the users, particularly in RGCs.

 Table 16-53
 Organizations in CBMS and their Duties

Source: "A National Framework for Operation and Maintenance of Rural Water Supplies"

2) Maintenance Items

As shown in Table 16-54 maintenance of water supply facilities consists of daily inspection/ maintenance and repairs. Repairs are divided into minor and major repairs; minor repairs contains those of minor cracks and leaks etc. other than daily services, and major repairs include replacement of major components of the facilities. Communities are responsible for the daily inspection / maintenance and minor repair of their water facilities. With good routine maintenance the need for repair is normally minimal, and where it occurs the costs are relatively low.

Type of WSS	Daily inspection / Maintenance	Minor Repair	Major Repair	
Borehole (with hand pump)	Clearing drains and surroundings Maintaining fence. Checking of handpump. Periodical replacement of fast wearing parts (buckers, valves, etc)	Repair of damaged parts outside routine service. Replacement of damaged slow wearing parts (handle, chain, few pipes and/or rods, cylinder). Repair or cracks to platform or drain.	Fishing of dropped pipes and rods. Desilting of borehole. Repairs to borehole casing and screens. Replacement of platform and drain. Replacement of rising mains.	
Protected Spring	Cleaning Intake area, drains and surroundings. Maintaining fence.	Repair or cracks to retraining wall, platform or drain.	Re-protection (due to diversion or major failure)	
Gravity Flow Scheme	Cleaning Intake area, drains and surroundings. Maintaining fence(s). Periodical checking of components for proper functioning. Periodical replacement of fast wearing parts (taps, etc).	Repair of minor leaks in structures or components. Repair of pipe bursts.	Rebuilding of intake works or other major structures. Replacement of long pipeline sections damaged by landslides, etc.	
Pumped and Piped Scheme	Cleaning intake area, drains, fence and surroundings. Checking of pump.	Repair of minor leaks in structures or components. Repair of pipe bursts.	Rebuilding of intake works or other major structures. Replacement of long pipeline sections damaged by landslides, etc.	

 Table 16-54
 Maintenance Items for Each Water Supply System

(3) Constraints on O&M of Rural Water Supply

1) Technical Capacity and Staff Deployment

Table 9-20 shows the present status and constraints of O&M organizations with regard to technical capacity and staff deployment, stated in the "Strategic Investment Plan for the Water and Sanitation Sub Sector (MWE, July 2009)". During the site surveys in some Districts by the study Team, daily maintenance works by the staffs of WSCs at the Point Water Sources shown in the Table 16-55, such as Cleaning intake area and checking of pumps etc, were found to be inadequate. Training the staffs of WSCs and back up supports by Sub-counties and DWOs are required. Although not indicated in Table 9-20 it was found that in some DWOs staffs required had not been deployed yet and daily works could not been conducted sufficiently because of failure of necessary equipment such as computers etc. Capacity building and staff deployment including necessary equipment in other organizations engaged in O&M of water supply facilities are also considered to be required.

Organization	Role	Present Status	Links	Staffing	Major Constraints
Technical Support Units (TSU)	Capacity building support to DWO for facilitating O/M of rural system	Inadequate resources to fully support the implementation of the CBMS	DWD Districts	Knowledge and skills adequate	Capacity to adequately cover the new districts
Districts (DWO)	Support to management of RGC system and village committees for point sources	Inadequate priority and resources for implementation of the CBMS	DWD Sub-counties Communities Private sector	Inadequate capacity at LG and community levels	Inadequate support to CBMS in both parishes and RGCs
Sub-counties/ water Authorities	Supporting formation and functioning of Water and Sanitation Committees to solve management issues and problems. Function as Water Authorities for RGCs systems	Working but limited resources for facilitating the support to water committees and managing RGCs	Water & Sanitation Committees Districts Private Operators	Limited technical capacity	Inadequate support to parishes Technical capacity to manage RGCs
Communities (WSC)	Management, operation and maintenance of point sources and RGCs	Working but limited technical capacity for efficient O&M. Bottlenecks in spare-part supply chain	Parish/Sub-c ounty Private Operators Water Users	Inadequate knowledge and skills in water, sanitation and hygiene	Limited technical capacity affect effective O&M
Private Sector	Operation of water supply schemes through contracts with Water Authorities	Work but some constrains by technical skills and inadequate financing due to delayed Water Authority payments and release of subsidy to nonviable schemes	Sub-counties Districts DWD Water Users	Limited planning and technical skills	Spare-parts and supplies in rural areas Limited planning and technical capacity of local private Operators
NGOs, CBOs	Training and support to communities in O&M	Need to harmonies approach of different NGOs in communities	Districts Sub-counties Communities		Need to anchor NGO activities in LG structures for sustainability

Table 16-55 Present Status of O&M Organization

2) Funding for O&M

At the point water sources, users usually take the water without tariff. And at the time of Minor Repair shown in Table 9-19, WSC collects the fee from users if required. Major repairs and extensions of the scheme are sometimes not affordable to the local community. Funding for them should come from outside, that is the local/central Government.

As for the water supply schemes with pipeline and pumps, it was found in the field survey that the private operator was not able to supply the water to the users continuously but intermittently because they did not pay the electricity charge due to lack of operation fund, and the users were returning to the old point water sources they had used previously.

Thus the O&M fund is inadequate in both point water sources and water supply schemes in RGCs. Therefore as measures to solve the O&M fund constraints, there is the following organization at present. a) Umbrella Organizations (UOs)

Umbrella Organizations were constituted as regional organizations in three regions.

- "The South Western Umbrella of Water and Sanitation (SWUWS)" was set up to give back-up support to water authorities and water supply boards for RGCs and small towns in operation and maintenance (O&M). It was constituted in 2002 as an association of the local Water Supply and Sanitation Boards, and currently provides support for piped water supply schemes in seven Districts in 2008. The SWUWS carries out the role for the member towns as follows:

- Water quality monitoring, supplying spare parts to members, locating spare-parts suppliers

- Providing technical backup support, regular monitoring inspections for the member schemes and reporting to DWD

However, it requires a subsidy in the form of grant financing from the Austrian Development Cooperation (ADC) which is channeled through the Joint Partnership Fund in DWD.

- "The Eastern Umbrella of Water and Sanitation (EUWS)" was constituted based on the Joint Partnership Fund in 2007. It provides the same support as mentioned above in 24 Districts as of September 2010.

- "The Mid-Western Umbrella of Water and Sanitation (MWUWS)" was set up to give supports to water supply schemes in 8 Districts, but the activities were not started yet because of lack of Funds as of February 2010.

b) Town Cluster Operators

In the "Long-term strategy for Investment Planning, Implementation and Operation & Maintenance of Water Supply and Sanitation in Rural Growth Centres" (May 2005, DWD), the following recommendation is shown.

"The main approach will be that the WSC hires a Local Private Scheme Operator (SO) for the operation and maintenance of the scheme. The SO will do the day-to-day operation and maintenance. In the Small Town Strategy it is recommended that O&M for small town is contracted to private Town Cluster Operators. For RGCs it is recommended that O&M for RGCs that will develop into small towns in the near future are included in the clusters for small towns. The chosen technology for those RGCs will be more similar to small towns and the RGCs will benefic from the "economies of scale".

The concept of "CLUSTER" has just been started by IFC (International Finance Corporation) : this means that a few Towns join together to form the "CLUSTER" and one Private Operator is then allowed to bid for O&M for all these Towns under the "CLUSTER". There is a chance that the Private Operator can conduct the operation and minor repairs sufficiently by the increased income inspite of low Tariff because of the increased population served. And he might be able to afford to conduct some

major repairs. The adoption of this system is now under study by DWD.

16.5.2 O&M of Existing Water Supply System in Priority Districts

(1) Implementation System

Implementation of the Rural Water Supply System in the selected priority Districts is conducted based on the Local Government Work Plan as same as in other Districts. Construction of the water supply facilities and major rehabilitations are conducted by utilizing the "District Water & Sanitation Conditional Grant". "Specific Schedules / Guidelines for Utilization of District Water & Sanitation Condition Grant (2010/11), June 2010" provides the roles and responsibilities of each organization as follows.

a) Communities are responsible for demanding for, planning, contributing a cash contribution to, operating and maintaining rural WSS facilities. A water user committee (WUC) should be established at each water point.

b) The Ministry of Finance, Planning and Economic Development (MFPED), mobilizes funds, allocates them to sectors and coordinates development partner inputs. MFPED reviews sector plans as a basis for releasing allocated funds, and reports on compliance with sector objectives.

c) The Ministry of Water and Environment (MWE) has overall responsibility for setting national policies and standards, and priorities for water development and management. It also monitors and evaluates sector development programmes to keep track of their performance, efficiency and effectiveness in service delivery. MWE is responsible for the regarding the planning and provision of sanitation / hygiene facilities in Rural Growth Centres (RGCs) & public places as well as hygiene and sanitation education & promotion in areas around the water facilities constructed. In practice these activities are undertaken at District Government level.

d) The Directorate of Water Development (DWD), under MWE is the lead agency responsible for managing water resources, coordinating and regulating all water and sanitation activities and providing support services to local Governments and other service provides. DWD regulates water use and waste discharge, supports districts in implementing decentralized WSS programmes and implements scheme (new construction and rehabilitation) in small town and rural growth centres. DWD approves local Government work plans and reports.

e) Local Governments (Districts, towns, Sub-Counties) are empowered by the Local Governments Act (1997) for the provision of water services. They receive grant funding and may mobilize local resources for implementing rural WSS programmes and to support small town WSS. Local Governments, in consultation with DWD / MWE also appoint and manage private operators for urban schemes outside the jurisdiction of NWSC. District Governments are being encouraged to set up

District Water and Sanitation technical Committees (DWSC) to oversee and provide effective coordination of water sector activities in the respective Local Governments.

f) Private Sector firms undertake design and construction in the sector under contract to local and central government. Private hand pump mechanics and scheme attendants provide maintenance services to water users in rural and peri-urban areas. Private operators manage piped water services in the majority of small towns with piped water and vendors often bring water from the point of collection to the user.

(2) Current State of O&M of Existing Water Supply Facilities

1) Point Water Source

a) Current state of Existing water Sources in the three Districts is stated in the Results of RGC Survey. In many water sources, few WSCs have working members as stipulated. For sufficient O&M, Sub-County / District should guide and supervise WSCs to allocate the members. Water Tariff for minor repairs should be collected. In the RGC Survey, Tariff collection was conducted only in 21% of water sources in the Three Districts.

b) Functionality of water Sources

In the WATSUP Survey, total Functionality of Water Sources in the Three Districts was 85.3 % (Table 16-6). Main reason of Non-Functional is considered to be lack of Fund for Major Repair and Replacement of borehole pumps etc.

2) Piped Water Supply Scheme

As these was no piped water supply scheme working in the Three Districts at the time of RGC Survey, a survey by the Study Team was conducted on the existing RGC piped water supply schemes in Kamuli District - Kasambira Water Supply Scheme and Namwendwa Water Supply Scheme. Outline of the schemes is shown in Table 16-56.

a) Both RGCs were not gaztted as Towns yet, although the population exceeded 5,000 at the time of the survey.

b) O/M organizations in both RGCs were Water Supply Boards under the Sub-Counties, not private operation company.

In future the O/M organizations are considered to be private operation companies, as the privatization of small town water supply scheme is the policy of the MWE.

c) O/M of both water supply schemes seemed to be comparatively good, because the facilities were constructed in 2008 and major repairs were not required yet.

d) Balance of Income / Expenditure

In Kasambira scheme it was profit in 20009 / 2010. In Namwendwa scheme it was also profit except Electricity charge. They were negotiating with Electricity Company regarding the settlement of the charge to be paid.

e) In 2009 both schemes were registered to the members of Eastern Umbrella of Water and Sanitation Mbale. In Kasambira Scheme, the Umbrella Organization provided the assistance of water quality testing (twice a year), water flow meters and extension pipeline and public stand pipes, which contributed the benefit of the scheme.

		(September 2010)
Name of the Scheme	Kasambira Water Supply Scheme	Namwendwa water Supply Scheme
Sub-County	Bugulumbya	Namwendwa
Number of LC1 in the RGC	13	9
Constructed in	2008	Nov. 2008
O/M Organization	Kasambira Warer Scheme Supply Board	Namwendwa Water Scheme
	under the Sub-County (Water Authority)	Supply Board under the Sub-County (Water Authority)
Number of the staff organization	5 members of Water Board Committee 4 technical staffs including scheme	5 members of Water Board Committee 4 technical staffs including scheme
	operators.	operators.
Population Served	Approx. 20,000	Approx. 10,000
Water Source	2 Deep Boreholes (1 Borehole working)	1 Borehole
Water Supply Facilities	Borehole pump (15m ³ /H, 61m H)	Borehole pump
	Reservoire (90 m ³ , 12m H)	Reservoir
	7 Kiosks (3 taps each)	6 Kiosks
	175 Yard Taps	90 Yard Taps
Power source of Borehole Pump	Generator (36 KVA)	From Electricity Company (UMEME)
-	(No power supply)	
Balance of Income / Expenditure	Profit (2009 / 2010)	Profit (2009 / 2010)
		Except Electricity charge
Tariff collection Ratio	94~96%	Approx. 60%

 Table 16-56
 RGC Piped Water Supply Schemes in Kamuli District

(3) Financial condition of existing Piped Water Supply Scheme

Balance of Income / Expenditure in Kasambira Water Supply Scheme was surveyed.

1) According to the Water Supply Board, total balance of Income / Expenditure in the financial year 2009-2010 was profit. (22,589 x 103 SH / 22,527 x 103 SH)

Income was a total amount of Tariff collection. Approx. 45% of total Expenditure was Fuel & transport cost for borehole pump. Remaining 55 % of Expenditure was allowance for board members, salary for scheme operators, minor repairs and office expenses. This implies that there is a possibility that the scheme could get more profit if it could receive the electricity power from electricity company with reasonable charge.

2) The scheme received the assistance from Eastern Umbrella of Water and Sanitation, such as water quality testing, provision of water flow meters and extension pipeline and public stand pipes, from April 2009 to April 2010, which are not included in the above balance. That shows the scheme gets the benefit from the Umbrella organization.

(3) Major issues on O &M organizations

O&M organizations and the constraints of the existing Rural Water Supply Facilities are stated in Chapter 3.3. And the present status and the constraints of each organization indicated in the "SIP for the Water and Sanitation Sub Sector (MWE, July 2009)" are shown in Table 9-20. Followings are the major issues to be mentioned particularly on O&M organizations in the Three Districts.

1) New Districts

Three Districts were split up into six Districts from the beginning of July 2010. This is the major issue for the new Districts and DWOs. New offices and equipment as well as staffs should be allocated. At the time of site visits by the study Team in September 2010, offices, equipment and staffs were not fully allocated. The numbers of staffs of TSU4 (for Iganga and Pallisa) and TSU3 (for Soroti) might be required to be increased to cover the new Districts adequately.

2) District Water Office

a) "Specific Schedules / Guidelines for Utilization of District Water & Sanitation Condition Grant, 2010/11" provides the District Water Office Staffing as follows.

The following qualified staffs are requied in each DWO.

- 1 Senior Engineer / Senior Water Officer.
- 1 Hygiene Education / Sanitation Officer / Planner.
- 1 Assistant District Water Officer (ADWO) Mobilization

- 1 Technical Officer in each county for planning, supervision, of construction and overseeing maintenance of installed water supplies.

- 1 Borehole maintenance Supervisor

Three DWOs of former Districts have allocated the above staffs so far. But the staffs for new Districts should be selected and allocated.

b) Water quality testing at the point water sources should be conducted periodically. But it seemed to be inadequate.

16.5.3 Proposed O&M Structure

O&M Structures for Rural Water Supply Facilities in the Three Districts are proposed as fallows.

(1) Village Water Supply Facilities (Other than RGC) (Category I)

1

The following conventional WSC for point water source will be the O&M organization.

- Chairman

- Treasurer
- Caretakers 2 (One of whom must be a woman)

1

1 1

- Committee Member
- Secretary
- Total 6

(at least 3 of whom must be women, at least one holding an executive post e.g. Chairperson, Treasurer or Secretary)

(2) RGC Water Supply Scheme (Category II-IV)

1

1

For RGC piped water supply schemes, the following members of Water Supply Board and technical staffs are proposed as O/M organization.

```
- Water Board Members : 5
Chairman 1
Treasurer 1
```

Secretary 1 Board Members 2

- Technical Staffs : *4
 - Scheme Operators ³
 - Security Guard

Secretary

*Numbers of Scheme Operators should be decided depending on the scale of the scheme.

16.5.4 Capacity Development Plan

For smooth implementation of the master plan for the priority districts, the capacity building of the operation and maintenance organizations, monitoring to grasp the operation and maintenance situations, the workshops and trainings are proposed to be conducted at the times of construction and rehabilitation of facilities by the district water office under the support of TSU as shown in Table 7-20. The targets of the activities are water users, WSC members, members of Water Supply Boards, scheme operators and extension workers of sub-counties.

1) Capacity building for water users by extension workers (Hygiene Education/Sanitation Officer in DWO, Officers in Health Department and social workers in Sub-Counties) is conducted in the Three Districts also, using documents such as "Rural Water Supply and Sanitation HANDBOOK for Extension Workers", However it seems to be insufficient judging from the present condition of O/M in water sources. Workshops to instruct the water users the importance of O/M based on the CBMS are required at the time of implementation of Master Plan.

2) Training of HPM (Hand Pumps Mechanics)

According to DWD, at least 2 HPMs in each Sub-County or 1 HPM in 50 Hand Pumps should be allocated. In the Three Districts the training of HPMs has already been conducted, but the numbers of HPMs are not enough at present and the Training of HPMs at sites using the actual pumps installed is required at the time of construction.

3) Monitoring of O/M

Records on O/M are the basis of good maintenance, by which the time of replacements of the facilities could be judged and annual work plan could be made. Formats of daily report and inspection report should be provided and training of WSC members and scheme operators should be conducted during and after completion of construction of the facilities.

Timing/ Activities	Detail of Activities	Targets	Documents	Remarks
	1) Announcement to water users	- Water users	 Broad casting Bulleting Pamphlet 	 By central & Local government DWO should be the chairman of the work shops. Members of DWD, TSU should attend and lead/assisst the work shops. The minutes should be made by DWO
(1) Before construction Workshops & Site explanation	 2) Explanation of the Facilities (Capacity, Specification etc.) 3) Explanation of O/M including Minor & Major repairs 4) Decision of Water Tariff and collection method 5) Capacity building of WSC and Water Supply Board members i) Role and responsibility of each member ii) O/M procedure and records 	 Water users WSC members Extension workers Board members of the scheme Scheme operators Sub-County chief WSC members Board members Scheme operators Scheme operators Extension Workers Hand Pump Mechanics 	 Planning documents Document for maintenance including repairs O/M manual 	
(2) During and after construction Workshops & site trainings	 Capacity building of WSC and Water Supply Board members Role and responsibility of each member Confirmation of O/M procedure and records 	 WSC members Board members Scheme operators Extension Workers Hand Pump Mechanics 	 O/M manual Handling instructions 	
	2) O/M by the WSC members and scheme operators	 WSC members Scheme operators Hand Pump Mechanics 	 O/M manual Handling instructions 	
	 3) Training of Hand Pump Mechanics i) Inspection, repair ii) Records of inspection & repairs iii) Spare parts supplier 	- Hand Pump Mechanics	 Documents & drawings from supplier 	
	 4) Monitoring i) Records on O/M ii) Updated lists on household iii) Daily inspection of pumps and facilities vi) Collection v) Record on spare parts purchased 	 WSC members Board members Scheme operators 	 Daily report Inspection Report 	

Table 16-57 Workshops and Trainings