



KENYA

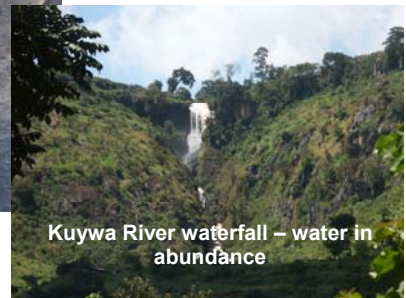
WATER SUPPLY NZOIA CLUSTER (PHASE III)



Fetching water from the river needs absolutely to be abandoned



Kimilili existing water treatment works



Kuywa River waterfall – water in abundance

Client	Lake Victoria North Water Service Board (LVNWSB), Kakamega
Financing	KfW Development Bank
Duration of Services	10/2008 - 06/2009
Cost of Implementation	39 mio US\$

Scope of Services

- Inventory of existing installations in the towns of Butere, Malakisi, Munias and Kimilili, of three rural water supply and sanitation clusters, and of nine independent rural water supply and sanitation schemes
- Socio-economical survey with tariff assessment
- Environmental impact assessment
- Water loss analysis in the existing distribution networks
- Review hydraulic computations for transmission mains, water distribution and sewerage networks
- Preparation of detailed engineering design on rehabilitation and expansion of raw water intakes, pumping stations, water treatment plants and sanitation facilities, and tender documents in 5 implementation packages and 10 construction lots

Brief Project Description

Within the framework of the Consulting Contract between the Employer Lake Victoria North Water Services Board (LVNWSB) and the Consultant for Phase III of the Water Sector Development Programme, Water Supply and Sanitation Systems Nzoia Cluster; (Butere, Malakisi, Mumias and Kimilili; three rural water supply and sanitation cluster; and nine independent rural water supply and sanitation schemes), detailed engineering design for the implementation of measures has to be undertaken in order to facilitate tendering.

The Nzoia drainage basin is located north of Lake Victoria between Mount Elgon to the West and the Rift Valley Province to the East. The water services in the towns and rural centres are operated by the recently founded Nzoia Water Services Company Ltd. and Western WSC Ltd., and supported by the LVNWSB.

The objective of the Water Supply and Sanitation programme Nzoia Cluster is to ensure the provision of sufficient economically viable and socially sustainable water supply and sanitation services for the towns and rural centres in Nzoia basin as major contribution to improve the health of the urban population. The Project is considered as a first but very important step for improvement and development of the Nzoia Catchment area and will in particular offer safe potable water by improved systems throughout the year at affordable price.

Lot	Location	Population 2025	Water demand 2025 [m ³ /day]	Rehabilitation / • Water Supply Expansion	Sanitation Augmentation	Investment Cost [mio USD]
1	Malakisi	63,058	8,334	raw water intake, pump station, treatment works, storage tanks, chlorination / • ---	sewage treatment works 1,104 m ³ /d, 5 km sewers DN 200 to 450	2.45
	Kimilili	209,213	17,923	raw water intake, pump station, treatment works, storage tanks, 15 water kiosks / • ---	sewage treatment works 2,000 m ³ /d, 5 km sewers DN 200 to 375	4.52
2	Cluster 3	130,747	9,971	raw water intake, pump station, treatment works, storage tanks, 23 water kiosks / • ---	-	1.44
3	Navakholo	20,619	1,033	control panels, storage tanks, 2 boreholes 55 m, chlorination, pump house/ • ---	-	0.68
	Musanda	6,429	313			
	Port Victoria Sio Port	35,681 6,784	2,721 498			
4	Kwanza	3,079	235	dam cleaning, pump house, storage tank, chlorination / • ---	-	0.11
5	Mumias	154,235	14,769	raw water main, treatment works, storage tank, distribution net, 4 water kiosks, chlorination / • treatment works' expansion from 1,215 m ³ /d to 16,000 m ³ /d, 2.7 km pumping main DN 350, storage tanks' expansion from 1,400 m ³ to 7,000 m ³ , 40 km distribution mains	sewage treatment plant 1,605 m ³ /d, additional capacity 2,515 m ³ /d, 23.4 km sewer DN 200 to 450	13.40
	Butere	18,717	2,391	1 borehole 80 m, control panels, storage tanks, chlorination, distribution net / • 17 boreholes 120 m ³ /d, 1,200 m ³ elevated tanks, chlorination, 6 km distribution mains	on-plot facilities	2.05
	Munias & Butere gravity scheme					
6	Funyula	7,566	555	chlorination, pump house, storage tanks, 1 water kiosk / • 2 boreholes 14 m ³ /hr each, storage tank 250 m ³ , chlorination, 4 km distribution mains	on-plot facilities	0.76
7	Lessos	4,125	393	desilting of dam, storage tanks, chlorination, pump house, 1 water kiosk / • new intake, raw water gravity main, treatment works 420 m ³ /d, 2 km pumping main DN 100, 200 m ³ storage tank, 4 km distribution main	on-plot facilities	1.08
8	Cluster 1	16,138	1,231	treatment works, storage tanks, 3 water kiosks / • new intake weir, raw water gravity main, treatment works 1,300 m ³ /d, 6 km pumping main DN 200, storage tank 700 m ³	on-plot facilities	1.92
9	Cluster 2	26,296	2,005	intake, raw water main, treatment works, storage tank, distribution net, 5 water kiosks / • augmentation of existing intake chamber, gravity raw water main, new treatment works 2,050 m ³ /d, 1000 m ³ storage tank, 3 pressure reducing tanks, 20 km distribution main	on-plot facilities	3.37
10a	Kapsowar	4,792	459	raw water main, storage tank, distribution net, 1 water kiosk / • new treatment works 460 m ³ /d, , 100 m ³ storage tank, 4 km distribution main	on-plot facilities	0.98
10b	Kapchero p	5,386	411	intake, raw water main, storage tank, distribution net, 1 water kiosk / • augmentation existing gravity / pumping system	on-plot facilities	0.17
Total		712,845	63,242			39.00